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Editorial

As professionals or researchers, be it architects, historians, environmentalists, conservationists or planners, we are often cocooned in our own professional or academic shells - providing expertise from a singular perspective. Although 'Sustainability' and 'Conservation' have become keywords for all professionals and researchers today yet the solutions provided fall short of a pluralistic approach. Despite an inherent linkage between built heritage, people and nature, a multidisciplinary attitude is still lacking in the country. "Context: Built, Living and Natural" provides a forum for exchange of ideas and dissemination of knowledge about the spectrum of people, place and architecture within the Indian scenario.

The introductory section 'Compiling Records' aims to regularly feature archival data in the form of measured architectural drawings, GIS mappings and community studies in different regions of India. This issue particularly records two interesting historic structures – the Narsimha temple in Uttaranchal and the Ahirtola Ghat in Kolkata.

The articles in the 'Methods and Approaches' section comment on the prevailing methods used for conservation and sustainable projects as well as problems faced in implementation and future sustenance of specific conservation ventures. The first article in this section elaborates on the dynamism of indigenous knowledge accumulated by the local communities of India. Subsequent articles focus on issues of holistic approach to heritage planning, role of professionals in conserving traditional skills, integrated spatial planning, environmental insecurities, sustainable energy, children's participation in environment management and community participation in planning. The article on 'Gaiety Theatre' presents an interesting dual saga of the architectural heritage and history of theatre in Simla.

The section on 'Sustainable Solutions' showcases three outstanding projects that successfully deal with issues of sustainability and conservation along with social upliftment – Initiatives of CIBART in villages of Rahimawad and Kotwa, efforts on water conservation by Tarun Bharat Sangh and the changing face of Ralegansidhhi with motivations of Anna Hazare.

There is a deliberate mix of articles covering both indepth research as well as fieldwork and experiential notes as the journal emphasises on the essentialities of combining research work with ground realities to achieve success in such ventures.

We keenly look forward to your feedback on this fisrt issue of "Context: Built, Living and Natural".

Shilehe Jam

Compiling Records

Narsimha Temple, Uttaranchal.....p.7

Research and Development Centre, Vastu Kala Academy, New Delhi
The team members involved in the Research work on temples of Uttaranchal
are Prashant Chander - Executive Director, Vastu Kala Academy, D.P Kambo
Director, Vastu Kala Academy, Sumit Kalra - Director Projects, R & D
Centre, Vastu Kala Academy, Siddharth Roy and Shivani Mittal.

Ahirtola Ghats, Kolkata.....p.12

- Debeshi Chakraborty The author is an architect by profession. She is currently pursuing Masters in Urban Design from Jadavpur University.

he temples in Uttaranchal, in the recent years have undergone numerous types of degradation. Many new conservation issues have arisen as a result of the increasing yet relatively uncontrolled mass of national and international pilgrims/tourists. While in the earlier times there used to be some sacred value attached with the pilgrimage, today these shrines risk becoming a market place, devoid of the sacred value. The negligence on the part of government in maintaining these temples, tourists and locals onslaught bring new risks to the physical integrity of the temples. In response to this situation Vastu Kala Academy, has taken initiative towards the religious, cultural heritage, tourism and environmental development of Uttaranchal with a comprehensive and holistic view of protecting the temples against physical and spiritual degradation and enhancing appreciation of the temples through restoration projects.

The documentation of the Narsimha Temple as part of the research work is presented here.









Narsimha Mandir is situated in Joshimath which is one of the main towns enroute Badrinath. This temple is dedicated to Lord Narsimha one of the reincarnations of Lord Vishnu. Apart from the Narsimha Mandir there are 6 other temples which form the part of this complex including Vasudev temple (having the rare 8-armed statue of Lord Ganesha), Navdurga temple and Shankracharya *ki Gaddi*.



Cultural Significance

The temple is of great religious importance. The seat of Lord Badri is placed here in the Complex and worshipped for 6 months of winter when Badrinath pilgrimage is covered under thick sheet of snow. Even the seat of Shankracharya is placed here in the complex in Shankracharya *ki Gaddi* and worshipped. Once the Badrinath pigrim is open, it is shifted there.



Building Structure and Materials

The main building construction element consists of load bearing stone masonry walls, 1'6" thick. The construction materials are soft red mud mortar (*chopri mitti* as per the local terminology), local stone for flooring, wooden columns and wooden framework for support of the main roof.

The foundation is made up of stone with soft red mud mortar type of construction quite common in the area.



Building Structure and Materials

The roofing system employed in the main building consists of –

- The pitched roof in the entrance portico consisting of the wooden trusses resting on the wooden columns (250 x 250mm & 320 x 250 mm) which instead are resting on the stone. The corrugated GI sheet is fixed to wooden purlins attached to the sloping beams, which in-turn rests on the wooden trusses.
- The upper storey consists of the wooden columns placed 1500 mm c/c which supports the wooden lintel which further supports the pitched roof.





Flooring

The flooring consists of the undressed locally available stone, on which cracks have appeared because of the improper bonding and levelling. There persists the problem of the rising dampness from the ground which can easily be seen.

The upper storey of the temple has the wooden flooring on the base of mud, which is not a levelled surface.

1st year - M. Arch Jadavpur University



Background

The city of Kolkata flourished by the bank of river Hooghly. Being a primarily river based settlement, its bank is dotted with several 'ghats'. Amongst them the Ahiritola Ghat is an significant one.

The history of Ahirtola Ghat at Kolkata, can be traced back to 1784. Some say the term 'Ahir' is derived from the sanskrit word 'Abhir'. But according to others, it was the local milkmans colony - Ahiritola from which the ghat was named after.

The place has been pretty famous from the beginning. Eminent personalities like freedom fighter Jadugopal Mukhpadhyay resided there.



Map of old Kolkata by Lieu'r Colonel Mark wood in 1784.

It is situated on the eastern bank of the river Hooghly. The presence of the ghat can be pointed out from the very first survey map of old Kolkata by Lieu'r Colonel Mark Wood in 1784.







Cast fron pil

NODE DAVIDING SOOM

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Accessibility

This place is a fifteen minute river ride from Howrah to its adjacent Ahiritola Jetty, which was established in 1928, and is still owned by Indo-Swiss Trading Company. The site is well connected by Strand Road and Circular Rail.



Function

The ghat is primarily meant for performing the river associated religious rituals. Family members of the deceased ones come from nearby Nimtola Burning Ghat to perform such rituals guided by the priests or pandas. The flowers and accessories required for such rituals are available from the open store in the ghat itself. There is also a changing room for the ladies who take a holy dip in the ghat.

Structure

This 200 year old structure stands proudly on its decorative cast iron columns and roof truss. This 26 metre long and around 5 metre wide ghat descends into the river with its grand flight of steps. The side open structure has now been partly enclosed by brick wall to shield weather.



Conclusion

The ghat at present is facing problems like unauthorised idol immersion, pollution, and absence of toilets. But amidst the dingy tea stalls, dusty auto-stand and rambling traffic, the Ahiritola Ghat stands out to speak to us the epics of its glory and lure us for a second visit.

Methods and Approaches

Indigenous Knowledge Systems for Sustainability

SARITA ANAND AND DIVYA THIMMAIYA

The scientific knowledge is generated by professional scientists through systematic scientific research and experiments, whereas indigenous knowledge is generated by local people through their day to day experiences in facing challenges of nature and society. Like professional scientists, local people also undertake research and experiments, but in contrast to them, they do the research as a part of their daily struggle to survive while wor king to earn their living. As a result, a systematic body of knowledge is created by people through accumulation of experiences, informal experiments and ultimate understanding of the environment in a given culture. Therefore, it is dynamic in nature and is embedded in community practices, institutions, relationships and rituals.

> "Indigenous Knowledge (IK) is a systematic body of knowledge, acquired by the local people through accumulation of experiences, informal experiments and intimate understanding of environment in a given culture" (Warren, D.M. and B. Rajasekaran).

It is a tacit knowledge, which has empirical elements that facilitates communication and decision-making in day-to-day affairs. It is a significant asset commonly held by the communities rather individuals. Tribal people, shamams, rural artisans, women, farmers and cattle rearers etc are the custodians of indigenous knowledge. They often pass these adaptive skills and knowledge through generations.

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There are a number of reasonable, ecologically sound indigenous practices

that contribute to sustainable development in the area of food preparation, health care, natural resource management, income generation, education, community organization etc. For indigenous people all elements of the nature – the rivers, trees, land, birds, animals and mountains are sacred and they revere them. They consider these as the gift of god, who is the creator, the preserver and the destroyer.

In many parts of the world, the indigenous communities identify the characteristics of different soils, climate, plants and animal species. They use these resources in limitation and do not exploit the nature. This is the key of preservation and sustainable use of bio-diversity. The people of the Bishnoi community in Rajasthan and Haryana, for example, rear selective breeds of the cattle and they can predict about the weather by monitoring the behaviour of these animals. The Kameng and Lohits of Arunanchal Pradesh and people of Kajrat Tribal area of Maharashtra have vast knowledge of medicinal plants.

Gradually, due to industrialization, modernization and westernization, the people have alienated the indigenous knowledge. In the race of economic development, the indigenous knowledge has come at the verge of extinction. The epidemics of piracy and patenting of indigenous knowledge are swallowing the ethnic legacy. The patents on neem, karela, jamun, amla, basmati, turmeric etc are the proof of subjugation of indigenous knowledge for monetary gains.

Indigenous people throughout the

world, occupying different agro-economical zones have generated vast bodies of knowledge related to the management of their environment. This store of knowledge is known by many names. It is termed as Indigenous Knowledge, Traditional Knowledge, Indigenous Technological Knowledge (Howes & Chambers, 1980), Local Knowledge, Traditional Cultural Knowledge, Traditional Ecological Knowledge and Traditional Environmental Knowledge (Johnson 1992) denoting slightly different meaning to different users of the concept. There is however, consensus amongst scientists using various terms that such knowledge is linked to a specific place, culture or society, is dynamic in nature, belongs to groups of people who live in close contact with natural systems and contrasts with modern or western formal scientific knowledge.

Although some Indigenous Knowledge Systems (IKS) include sacred texts (IUCN 1997 P 47), but most are oral based, often revealed through stories and legends. For this reason, it is often difficult to transmit ideas and concepts to those who don't share the language tradition and cultural experience. Thus, when language is threatened or diminished, the cultural transmission of Indigenous Knowledge is jeopardized (Warren 1991; Gurung nd, IUCN 1997).

The term Indigenous Knowledge Systems (IKS) refers to a body of empirical knowledge and beliefs handed down through generations of long locale by cultural transmission about the relationships of living beings with each other and environment.

TYPE AND USES OF INDIGENOUS KNOWLEDGE SYSTEMS

There are a number of reasonable ecologically sound indigenous practices that can contribute to sustainable development. Useful Indigenous Knowledge can be found in different fields like health, natural resource management, agriculture, education and a host of other fields.



Relation to Land : Although indigenous people vary widely in their customs, culture and impact on land, all consider the earth like a parent and revere it accordingly. The idea that the land can be owned, that it can belong to someone even when left unused, uncared for, or uninhibited is foreign to indigenous people. They understand only too well that to harm the land is to destroy ourselves, since we are part of the same organism.

Nature's Pharmacy: Globally, indigenous people use 3,000 different species of plants to control fertility alone. Almost all trees and many plants have a medicinal role. Many developed countries realize the potential for indigenous medicines. It is locally

Fig.1: Custodians of Indigenous Knowledge - Shepherds hailing from Rajasthan

available, culturally acceptable, and cheaper than imported drugs. Indigenous people work on body and mind together to help cure illness. Medicinal plants are used to treat the spiritual origins of disease as well as the physical symptoms. The vast knowledge of such plants is now beginning to be acknowledged by the rest of the world. So is the role played by indigenous people as custodians of the world's genetic heritage. A botanical survey of India reveal that tribal people of the northeast use plant drugs to cure fevers, bronchitis, blood and skin diseases, eye infections, lung and spleen ulcers, diabetes and high blood pressure. Knowledge of their use is passed on by the "vaidyas", Indian herbal medicine doctors. In a single area of 277 sq km (107 sq miles) 210 types of



Fig.2 : Traditional women in Bundi

medicinal plants have been found. Properly studied and recorded, this traditional knowledge could revolutionize the world of medicine.

Resource Management : The industrial world is facing an ecological crisis. Indigenous people use the resources available without depleting them. They use their intimate knowledge of plants, soils, animals, climate and seasons, not to exploit nature but to coexist alongside it. This involves careful management, control of population, the use of small quantities but a wide diversity of plants and animals, small surpluses, and minimum wastage. Plants provide food, medicines, pesticides, poisons, building materials and animals provide meat, clothes, string, implements and oil. Indigenous Knowledge of nature has ensured the survival of many people in fragile habitats.

Social Relationships : Social cohesion has been the key to survival for many indigenous cultures. Food gathering and hunting depend on mutual support and cooperation and disharmony within a part of the

groups is dangerous to the whole. In many cultures men and women have developed complementary, if not equal, roles; political decisions are arrived at by consensus in many cultures, and other social arrangements that benefit the entire community have often been incorporated into indigenous cultural traditions. Marriage can also ensure political stability for the community (by regulating exchange between groups), and continuing harmony with the spirit world. The notion of marriage as a relationship founded only on the bond of romantic love is rarely, if ever, seen in traditional societies. The nuclear family, too, is a rare concept. A complex interweaving of lineage, clan, and family connections means that most individuals are related to each other, traditions that fosters the sense of belonging to the group, and of the need to share.

INDIGENOUS KNOWLEDGE: WHY IS IT IMPORTANT?

- It has been recognized that Indigenous Knowledge plays a key role in the preservation and sustainable use of biodiversity.
- Indigenous Knowledge is the foundation for decision making in most day-to-day activities and livelihood strategies.
- Access to plant genetic resources and other forms of biodiversity and the associated Indigenous
 Knowledge can provide substantial benefits to companies and scientific research centers in both developed and developing countries.
- Many activities and products based on Indigenous Knowledge are important sources of income, food and health care for large parts of the populations in many developing countries, including the least developed countries.
- A number of Indigenous Knowledge-derived products are traded internationally. These include handicrafts, medicinal plants, traditional agricultural products and non-wood forest products (NWFPs).

DIFFICULTIES FOR INDIGENOUS KNOWLEDGE Systems

The three fundamental difficulties that Indigenous Knowledge Systems are facing today are:

 Loss or disappearance of Indigenous Knowledge, particularly from ethnic minority groups or tribes is rapidly occurring due to cultural homogenization and the decease of elders carrying that knowledge. Once lost, orally based knowledge cannot be retrieved.



Fig.3: Traditional housewife grinding herbs for medicinal use

- The two profound different world views of scientists and indigenous communities, based on radically diverging assumptions about the nature of the world, stand in the way of real communication and understanding. An attitude problem derived from cultural barriers and political realities prevents both groups from acknowledging the value of each other's system of knowledge.
- Under the auspices of the Modern Nation-State and the International Trade System threaten the life style, practices and cultures of indigenous people.

Modern & Indigenous Knowledge Systems

The world has suffered and continues to suffer from a profound loss of indigenous people and rural groups and their knowledge about the natural world constructed from their intimate ties to land and place. This loss has accompanied by neglect and the marginalization of their practices and beliefs, often figured as inferior forms of knowing to be replaced by universalized knowledge derived from western scientific tradition. While the later tradition has great beauty, power and utility, attempts to apply it universally without regard for traditional knowledge systems has in many cases led to failures in sustainable resource use and the erosion of biological diversity.

PLURALISM VS HIERARCHY

Diversity and pluralism are the characteristics of the Indian environment and Indian society. We have a rich biodiversity of plants for food and medicine. Indigenous Systems of Knowledge were defined as inferior, and infact, as unscientific. Thus, instead of strengthening research on safe and sustainable plant based pesticides such as neem and pongamia, we focused exclusively on the development and promotion of hazardous and non-sustainable chemical pesticides such as DDT and Sevin. The use of DDT causes millions of deaths each year and has increased the occurrence of pests 12,000-folds. The manufacture of Sevin at the Union Carbide Plant in Bhopal led to the disaster, which killed thousands and has disabled more than 400,000 people.

The failures and non-sustainability of chemical route to agriculture and health care provide an opportunity to re-evaluate knowledge systems, and move from the false hierarchy of these systems to a plurality. Such a pluralistic view of knowledge systems would imply respect for the different systems in their own logic. The integrity of our biological intellectual heritage can be protected only in such a pluralistic perspective.

INTERNATIONAL DEBATE

The international debate on Indigenous Knowledge covers many issues such as biodiversity, food and agriculture, health, expressions of folklore, trade and development, and human rights. The World Health Assembly has adopted a number of resolutions drawing attention to the important role played by traditional medicine in the primary health care of individuals and communities in many developing countries. International trade in herbal medicines is rapidly increasing. However, according to the World Health Organization (WHO), in most countries the herbal medicines market is inadequately regulated. Through its Traditional Medicine Programme, the WHO supports member states inter alia in their efforts to formulate national policies on traditional medicine and to study the potential usefulness of traditional medicine, including evaluation of practices and examination of the safety and efficacy of remedies.

Traditional Forest Related Knowledge (TFRK) is a specific subset of Indigenous Knowledge. To milude any actions that protect either indigenous and local communities living in close contact with forests, or the forests on which their traditions depend, could be considered as actions aimed at protecting TFRK, for example, actions relating to traditional resource rights. TFRK can also be included in criteria for sustainable management of forests and certification of forests and forest products.

PROTECTION OF INDIGENOUS KNOWLEDGE

Many international and national organizations are advocating for a cumulative knowledge base such as Food and Agriculture Organization, World Health Organization, World Trade Organization, World Intellectual Property Organization, World Bank, United Nations Development Programme. Lots of debates have been organized during the convention on Biological Diversity, Trade Related Intellectual Property Agreement, United Nations Conference on Trade and Development. The only motive behind all these efforts is to preserve, promote and sustain Indigenous Knowledge.

Various approaches put forward by them are:

- Documentation of historical and contemporary Indigenous Knowledge of numerous groups around the world.
- Strengthening the relevant customary laws of Indigenous Knowledge holding communities.
- Adopt Intellectual Property Right Systems (Patents,

Geographical Indications, trademarks, copy-rights) to include new forms of ownership such as communitarian titles.

- Trade secrets (covered under TRIPS Article 39) can be used to protect fair amount of Indigenous Knowledge with commercial value.
- Development of Sui-generis System by the countries in tandem with the consent of indigenous communities concerned.
- Generating Access and Benefits Sharing Mechanisms (Prior Informed Consent, Benefit Sharing Legislation, Contractual Agreements and guidelines and codes of conduct).

To sum up, Indigenous Knowledge is a treasure, enhanced incrementally through generations. It is collective in nature and is a common property. So Indigenous Knowledge should not be exploited for the interest and monetary gains of individuals and institutions. Indigenous Knowledge should be utilized only for the development and welfare of the humanity.

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The Ganga Riverfront in Varanasi

A Heritage Zone in Contestation

RANA P. B. SINGH

Varanasi owes its existence to the river Ganga (Ganges) considered to be the holiest river for Hindu people and especially sacred in Varanasi where its course towards the Bay of Bengal suddenly turns north. This led to the development of the ancient city of Kashi on the west banks of the river, facing the rising sun and thus making the ghats of Varanasi sacred for all Hindu rituals. The ancient association of the river Ganga with the religious, traditional and cultural fabric of the city and the immense influence of the associated activities on the development of economic and social life of the city and related tangible and intangible cultural expressions is unique in the world. "The Ganga River and the Riverfront and Old City Heritage Zone of Varanasi" being proposed for nomination to the World Heritage List of UNESCO fall mainly into the second category of cultural properties, i.e: "groups of buildings, groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape are of outstanding universal value from the point of view of history, art or science" (cf. Singh 1993: 298-304).

BOUNDARIES AND COORDINATES

"The Ganga River and the Riverfront and Old City Heritage Zone of Varanasi" spreads between 25° 17.350' to 25° 19.678' North and 83° 00.340' to 83° 02.374'East, and covers an area of 374ha (spread between 0.5km to 1.8km wide, and 6.4km length; Fig. 1). The area is delineated by several reference points and lines. In the east the edge of the annual floodwater that spread over the green area marks the boundary; there is no settlement in this part, except the Fort area, Ramanagar, in the south. The

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Fig. 1. Varanasi: The Ganga Ghats

western boundary is demarcated by the old road passing Assi, Godaulia, Chauk, Maidagin, Machhodari, and Rajghat.

CULTURAL SIGNIFICANCE

From its source in the Himalaya to its mouth in the Bay of Bengal, covering a course of about 2,525km, only at Varanasi does the Ganga river flow in a crescent shape from south to north, converging into a meander. The 6.4km (4 miles) long riverfront of the Ganga presents a specific vision of a magnificent architectural row of lofty buildings and holy sites. The construction of the stepped stone ghats ranges from 14th century to the latest interventions in 1995. There are 96 sacred waterfront spots (jala tirthas) concentrated around the 84 ghats. Most of the Ghats are active spots for festivities and rituals since historical past (Singh and Rana 2002: 87-102). The 84th ghat, Adi Keshava Ghat, is not taken into consideration in the heritage zone with an aim to avoid the discontinuity of settlement between the last two ghats.

HISTORICAL BACKGROUND

In the 2nd century, for the first time we find description of Dashashvamedha Ghat with reference to the great horse sacrifice ritual performed by the kings of Naga dynasty (Fig. 2). During the Gupta period, 3rd to 6th century BC, the ghats became the centre of economic and cultural activities. The Puranic literature describe its glory vividly in various contexts. In the Gahadavala period, 11th-12th century, as much as five ghats were mentioned in several inscriptions, viz. Adi Keshava, Vedeshvara, Kapalamocana, Trilocana and Svapaneshvara. From the inscriptions it is also clear that on solar and lunar eclipses and on some other family celebrations people used the ghats for performances and giving donations to the Brahmins.

By 17th century the riverfront landscape (ghats) became prominent in the overall arena of Varanasi. Varadaraja's *Girvana-padamanjari* (17th century) gives a full account of the ghats, rituals and festivals associated to them. The palatial buildings along the ghats were built under the patronage of the Marathas during 18th -19th centuries. Even in 19th-20th century many ghats were re-constructed, re-named and reshaped too. Since 1950 the state government of Uttar Pradesh has been deeply involved in making the ghats stone staired (*pucca*) and their repairing.

During the period between late 18th and 20th century, along the riverfront many monasteries (*ashramas*), Sanskrit schools, temples, and pilgrim rest houses were built by the estates of different parts of India, like Peshvas of Pune (Gujarat), Holkars of Indore, and Scindhias of Gwalior (Madhya Pradesh), Bhonshalas of Nagpur (Maharashtra), Sursand, Bhabhua, and Darbhanga estates of Bihar, Rani Bhavani of Bengal, kings of Nepal, etc. (Fig. 3).

AUTHENTICITY AS WORLD HERITAGE

(According to article 24 to 34 of operational guidelines of UNESCO)

Natural Heritage. The peculiar, crescent-shape of the river Ganga is the result of fluvial process through which the coarser sediments are deposited on its western bank between Raj Ghat in the north and Samne Ghat in the south. The portion between these two points, a hillock-like geologic feature, called natural levée, consists of nearly 60m bed of clay with coarse-grained sand, limestone concretion (*kankar*)



Fig. 2. Dashashvamedha Ghat, Varanasi: A view in 1820s, by Prinsep, 1830

and gravel. Another similar ridge like formation of limestone concretion exits other side at Ramanagar where exists the fort. This unique geologic formation has provided base for the growth of the city in a crescent shape, symbolically described as crescent moon on the forehead of Lord Shiva (cf. Fig. 4). The average elevation of such levée is around 76.20m, the crest of which is 15.24m above the lowest level of the Ganga (cf. Singh, *et al* 2001, and Singh and Dar 2002).

The rough line that marks the edge is demarcated with the help of an ancient road linking Asi-Godaulia-Chauk-Maidagin-Matyodari-Raj Ghat. This path is considered to demarcate the western boundary of the Riverfront Old City Heritage Zone. The sandy-loam belt on the other side, which is subject to yearly inundation, is a natural breeding site for turtles. During summer and autumn seasons the sandy-loam belt is used for cultivation of vegetables and melons. This belt is surrounded by the bushes and mangoe trees.

A GREAT CULTURAL HERITAGE SYMBOL

There are 84 *ghats* (stairways to the riverbank), forming a symbolic chain of holy sites. In archetypal terms each ghat represents 100,000 organic species (*yonis*) as described in Hindu mythology. Thus by taking holy dips in the Ganga at all the ghats the individual soul can get purified in all the 8,400,000 species. This number also refers to the annual cosmic journey, i.e. 12 zodiacs X 7 layers of the atmosphere, or 7 *chakras* (sheaths). Among the 84 ghats the 5 described as the most merit-giving and sacred, called *Panchatirthis*, are Asi, Dashashvamedha, Manikarnika, Panchaganga, and Adi Keshava. These five ghats symbolise the microcosmic body of Vishnu, respectively as the head, chest, navel, thighs, and the feet. Thus the area along the ghat is eulogised as Vishnu's body.

The riverfront of Ganga is the nexus of major rituals and festivities in the holy city of Varanasi. Any festival and ritual starts from sacred bath in the Ganga and followed up by rituals like worshipping the river, oblation to the sun-god and preparatory rites for continuing the sacred performances.

HERITAGE AT RISK

The areas and properties identified in the heritage zone are at the risk of being irreversibly modified or even destroyed due to immense pressures from tourism, economic development and population pressures which are now threatening the unity and integrity of the cultural landscape and atmosphere, and the urban skyline in these zones. The increasing population is over burdening the carrying capacity of the urban environment and the river ecosystem and unplanned mass tourism could potentially have a hard impact on the cultural carrying capacity of the old city centre.

The conservation of most heritage properties faces intense pressure. In the name of development, old structures are modified or demolished, even where the structures are made of stone and are not weak. The



Fig. 3. The first map of Banaras/Varanasi by Prinsep, 1822.



Fig. 4. Varanasi on Shiva's trident having the Ganga as base: a painting of the late 19th century.

ownership is collective or remote (like mathas, ashramas, palaces, etc.) and renovation work is expensive. Besides these risks, the buffer zones and the skyline of the old city, whose status quo is preserved at this moment, are also being threatened by encroachments and rising heights of buildings.

MANAGEMENT AND CONSERVATION

Most of the heritage properties in the old city belong to individual owners, substantial holdings by the Vishvanatha Temple Trust, non government organisations and charitable trusts. A few tangible heritage sites falling within the Riverfront and Old City Heritage Zone such as Manmandir Observatory near Dashashvamedh Ghat, Aurangzeb's mosque at Panchaganga Ghat and the Jnanvapi mosque have been declared as monuments by the Department of Archaeology, Government of India and are maintained and conserved by the Department of Archaeology.

At the Municipal level, the State Government had created the Varanasi Development Authority (VDA) under U.P. Urban Planning and Development Act 1973 Act II and 1973 (State Act). This authority is responsible for planning the development of the city and is also responsible for the protection of Heritage zones, sites and properties and the surrounding physical environment. The Govt. of India and State Govt of Uttar Pradesh, with the participation of a local body at the Municipal level are involved in implementing the protective regulatory measures through the agencies, including VDA and Town & Country Planning unit, and Ministry of Culture through Department of Archaeology, Govt. of India. Some of the NGOs involved in cleaning and maintaining the ghats are the Sankat Mochan Foundation, Ganga Seva Nidhi and Ganga Seva Samiti.

According to the Master Plan (1991-2011), under the Clause 2.9.2 Use Zone S-2 (Core Area/Heritage Zone), all the heritage monuments will be protected by the laws and construction permits be issued as per the norm of "the distance-regulation". This plan is the first of its kind to be officially approved by the govt. of Uttar Pradesh (ref. No. 2915/9-Aa-3-2001-10Maha// 99, dated 10 July 2001). For the first time, heritage protection issues have been discussed in this Plan and heritage zones and sites have been identified. The Plan has been revised in order to implement the policy of preservation of heritage sites and to channelise the development of the city in the context of environment and heritage protection.



In order to absorb population growth in the old city centre, new buildings are being constructed either by demolishing old structures or by building on them. Since most of the heritage sites are in these densely inhabited narrow lane areas, two state government orders (order number 320/9 A 3-2000 127, dated 5 February 2000, and order number 840/9 A 3 2001, dated 11 April 2001) state that, in all the towns situated along the Ganga river, no development activities can take place 200 metres from the riverbank. It specifically prohibits new construction on the riverfront ghats unless these buildings are temples, maths and ashramas and only if these have approved construction plans or are solely being renovated.

The order goes on to say that all other old buildings, that are within 200 metres from the ghats, can only be renovated. A recent example of renovation and conservation of the Manikarnika Ghat with the support of JAICA is an example of work in progress (Fig. 5).

DEVELOPMENT PRESSURES

Like most urban areas in India, Varanasi too has to affront intense development pressures. The impact of these pressures is harder in the old city centre where every inch is constructed, where population density is extremely high (400 to 500 persons/ per ha) and where the city is bursting at its seams.

Population : According to the Census of 2001, the population of the city was around 1.5 million. The heavy influx of migration from rural to urban in search of better livelihood has supported the high growth rate of population, recorded around 32.5% in 1991-2001. It is projected that by 2021 the population of the city will cross 2.5 million. Additionally, an estimated 30,000 daily floating population is recorded in the city. The riverfront and old city heritage zone of the city is densely populated (above 500 persons/ per ha), and it is here that development pressures are altering irreversibly the socio-cultural fabric of the city. The built heritage of the city is seriously threatened today by the population pressure. Increasing population is leading to traffic congestion, noise pollution and smog.

Tourism and Pilgrimage Pressures : Every year about a million pilgrims come to this city, and all of them bathe in the river Ganga, followed by worshipping in various temples. The six months, from October to March, has always been the main season for international tourists but recent tendency shows a continuous pattern throughout the year (recently approx. 125,000 every year). Among international tourists visiting Varanasi, more than forty percent are from four countries, viz. Japan, France, UK and Germany. While the Japanese come to the city because of its association with the

Buddha, who in 528 BC gave his first sermon in Sarnath, the British are attracted by the colonial tales of India, the Germans follow their indological perceptions and the French are guided by their aesthetic quests for selecting this city as a destination point. There has also been an increasing influx of tourists from Australia, Italy and Switzerland. This is a soft-impact tourism and often socially, environmentally and culturally harmonious and sustainable.

Environmental Pressures : The river eco-system is facing pressures from the increasing population in the riverfront heritage zone and also from other parts of the city whose sewage flows directly into the river. It is also facing pressure from the pollutant agricultural run-offs from villages around the city. However, approximately eighty percent of the pollution in the River Ganga in Varanasi is urban waste. Around sixty percent of the total overall pollution concentrate in the Riverfront and nearby Old City heritage zone of Varanasi. Due to contamination of water, the water borne diseases are common in this area.

TOWARDS MARCH

It is important to note that the move made by local NGOs, experts and eminent citizens of the city, to propose the nomination of the old city centre of Varanasi for inclusion in the UNESCO World Heritage List has activated the present sensitive and positive city administration to propose comprehensive measures for the preservation of the cultural heritage of Varanasi. Mahatma Gandhi rightly warned us that "nature has enough for everybody's need, but not for everybody's greed". A mass awakening in the context of old cultural values would promote a new spirit of sustainability.¶

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What Else is Heritage and How to Ensure its Continuity Emerging Role of the Profession for Interventions in the growth and Development of the Historic Settlements

NIMISH PATEL AND PARUL ZAVERI

BACKGROUND

In the past two decades, there has been a great upsurge in our exposure to, and our awareness of man made heritage. There is evidence of an increasing interest and awareness even for a man on the street. There are a growing number of architects who have made careers out of their concerns for heritage. More and more architecture schools are beginning to offer courses in conservation.

It is to the credit of the second and third generations of architects of post independent India, that the appropriateness of the role of modern architecture, and that of the living and continuing traditions of architecture, in the practice of the profession, has been questioned. The process of finding its own relevance and balance is well on its way. Its direct consequence is the increasing awareness amongst the people at large about the presence of our invaluable heritage throughout the country.

It is time to take this understanding, a step forward in our thinking, practice and action. Through this awareness the professionals, in the past two decades, have been able to project the 'Products'¹ as a significant part of our heritage.

The authors are Partners, Abhikram, Panika & Panika Crafts and Technologies Trustees, Virasat Foundation & Kanineeka Foundation. They are practicing architects, who have, over the past almost two decades, educated themselves about heritage conservation and related aspects, through an exploratory process, not an academic one. The views expressed in this article are a result of their explorations, experiences, learning and understanding, through their involvement in heritage conservation projects, as well as in new development projects around historic settlements.



Fig.1 : The Vision: Manmade lakes built centuries ago for the use of a fraction of its present population, trapping water from 200 sq.km. catchments area with only $\frac{1}{2}$ km long wall, is a vision not only un-recognised but also un-emulated.

Now, it is also the time to concentrate on the 'Vision', the 'Skills' and the 'Processes' that made these 'Products'. These constitute the remaining, unseen, often not discussed and therefore ignored aspects of our heritage. Since our focus has been on the "Products' the key word has become 'Conservation' instead of 'Heritage'. Consequently a fuller understanding of what constitutes our heritage still eludes most of us. This article is an attempt to clarify one of the perspectives of our Cultural Heritage, its role and meaning in our lives, the need for its continuity, and therefore its conservation, the issues involved in the process, and the possible directions of our efforts. Let us see some aspects of what else constitutes our heritage, without which the 'Products' would not have come about.

WHAT ELSE IS HERITAGE?

The Vision: Every settlement is the result of a vision of its leader, who recognized their responsibilities, as extending far beyond their own generation. It was never restricted by the limitations of the capabilities, but was demonstrative of the aspirations, which stretched the capabilities beyond their known limits. Freedom and Responsibities: Historically, the notion of freedom was always tied to the notion of responsibilities. One did not exist in the absence of the other, at any scale of the decision making processes. The notion of collective responsibility, which is seen missing from most of the present developments, was an integral part of it. Creativity with Common Sense: The most common denominator of the traditional decision making processes appears to be the sieve of common sense.

There was always an opportunity for creative inputs at all levels of implementation, but within the boundaries of an order and common sense.

Continuity and Growth: In more recent past, the issue of development has been seen as one of "continuity and change". It is, in effect one of "continuity and growth". Continuity does not normally accommodate change, and vice versa. Growth accommodates both, continuity as well as change. The attempt, traditionally, was to balance between continuity with the past without fossilizing it, and bring about a change for the future without making that change incongruent with its contextual surroundings.

Problem Solving and Creativity: Built environment has always been a response to changing human needs, which are complex and dynamic, demanding a deeper understanding of resources and constraints. Efficient but simple solutions, almost always optimized the use of human, material and financial resources, and yet were highly creative.

Aesthetic Aspirations and Construction

Technologies: Aesthetic appearance assumes significant importance in almost all contemporary buildings. This is not to say it was any less important in the traditional buildings. The major difference between the two is that in the current decision making processes, aesthetics is often the starting point of the design, and demands materials and technologies to fulfil the designers' aspirations. The traditional processes seem to demonstrate that both ends need to respect each other, with materials and technology often being the starting point.

Genetically Inherited/Developed Skills: The skills of construction craftsmanship represent knowledge and wisdom of centuries. It comprises many aspects such as, the selection of the principal material, the manner of its use with the other materials, the detailing of their assembly so as to last centuries, and the sequence of construction in the overall process. The wealth of all encompassing knowledge is passed on from one generation to another and represents our heritage of "Genetically inherited/developed skills". The continuity of this knowledge comes through its use and not through the documentation alone. This entire body of knowledge is in danger of becoming extinct, primarily because of the decreasing demand of its use. The lack of demand has its roots in the lack of familiarity and low comfort levels about its use, amongst the current professionals.

While it is necessary to focus our efforts, energies and resources in conserving and preserving the "products," it is equally essential, or may be more so, to also invest them in the conservation of the crafts itself, by increasing the demand for it.

THE PREMISE

Conservation of our Cultural Heritage is a responsibility every Indian is expected to live up to. The Heritage itself, and the wide range of background that we all come from, provides adequate range of roles, through which, each one of us can make a meaningful contribution to the cause of its conservation. A clearer understanding, of the issues involved, will go a long way towards maximizing the utilization of our scarce resources.

The basic premise arises from the inferences drawn by the authors, over past 25 years, in understanding the underlying principles of the historic architecture of India. They are:

- Maximum deterioration of our cultural heritage has occurred in the 20th century, and the main cause of it is a change of value system of the society which associates progress with rejection of most things connected with the past.
- Most traditional buildings are very respectful of the land and the surroundings they are set in.
- Traditional materials & technologies have greater longevity in comparison to the contemporary materials & technologies.
- Common sense was the common denominator in the traditional processes of decision making.
- The traditional design and construction processes offered opportunities for creative inputs at all levels of implementation, and were not restricted to the design studios of the designers' offices.
- The traditional craftsmen and construction workers are the principal carriers of the 'skills' and the 'knowledge' required to use the traditional materials & technologies.
- The traditional craftsmen have much better understanding of local materials and techniques in comparison to the professionals trained in the present education systems.
- The traditional skills and craftsmen are still available, but there are not enough owners/designers generating demand for their skills.
- The traditional craftsmen were shown greater respect for their 'skills' and 'knowledge' in the past, than their counterparts are being shown today.





Fig.2 : Genetically Inherited: The master craftsman and his pupil, at contemporary site in Jaipur and (below) a craftsman at work at Amber.

- The contemporary research activities in design & construction related fields rarely cover the traditional materials, technologies and their use in the contemporary times, in their main sphere of work.
- As professionals, our understanding of the traditional materials & technologies tends to be more superfluous and concentrates more on the visual aspects rather than the construction aspects.
- Most of us, the trained designers, are inadequately equipped to undertake design & construction work in historic areas, and there is a strong and urgent need to retrain ourselves.
- There is a strong and urgent need to review the methods of specification writing for small works, to make them less legal and more understandable by a layman.
- A reflection of the designers' personality appears to be the principal objective in many new constructions, rather than the purpose for which the





Fig.3 : Continuity and Growth: Jaipur City, from Nahargadh Fort. Continuity and congruent change with growth for close to three centuries.

building is built, and the person/organization which has initiated the project.

- The designers' overconfidence and self-righteous attitude reflect their ignorance about the knowledge, the skills and the capabilities of the craftsmen. The craftsmen are made to feel diffident about their own knowledge, which is often superior in comparison.
- The contemporary designers tend to deal with the craftsmen as they, the designers, feel comfortable about the design, and not the way the craftsmen feel comfortable about the implications of the design.
- Simple looking time tested solutions are better for the long term objectives in comparison to the variety oriented experiments without innovative approaches.
- New buildings in historic areas must attempt continuity with the past without fossilizing it, and a change for the future without it being incongruent to its contextual surrounding.
- Responsible architecture will evolve only by contextualising the design in all respects.
- The strength of Indian Architecture lies in the anonymity of its designer.

THE MILIEU OF THE CONFLICTING PARADIGMS

The strength and the presence of the enormous, as well as wide ranging cultural heritage of India, in the present milieu, is in direct conflict with the demonstrative aspirations of the practicing architects, in the past few decades. The short-term gains rather than long term responsibilities dominate the emerging paradigms in the built environment. They seem to strive towards, the qualities of aesthetic arrogance rather than those of aesthetic sustainability; an individual identity rather than a collective one; the fashion statement they make rather than how pleasant they are to work in; the need to use the new materials irrespective of their value efficiency rather than the need to understand their strengths and weaknesses before determining how to use them; the notion of individual aspirations rather than collective responsibility; the insensitivity towards the environment and context rather than sensitivity; the abuse of scarce resources rather than conservation of it. These crossroads are the reality of India at the start of the 21st century.



Fig.4: Problem Solving and Creativity: A traditional assembly detail of corner bracket which locks itself in a position inverted to it actual position, for greater fixity and longevity.

THE PATH

Which direction is more appropriate and more responsible, is a decision that must reflect the needs and the priorities of the country and the society at large, rather than those of only the designers. The confusion arising out of the conflicting paradigms has given rise to the emergence of developments, which are irresponsible towards the environment, the context and the resources, and they lack appropriateness in its direction. This is not the result of only the influence of the Western thought processes and their role models for development. It is also a direct consequence of our having neglected the process of understanding our own heritage, and how it has evolved, sustained and continues to be relevant even today.

It is imperative that we, as responsible professionals involved in the growth and practice of the profession, recognize that there is an urgent and a dire need to:

- Reorganize our educational curriculum, through which, a deeper understanding of our own heritage is imparted in our students from the very beginning.
- Re-educate our professionals with lessons from our traditions and the traditional decision making processes.
- Redefine the objectives of our profession so as to make a more meaningful and responsible contribution to the society.
- · Re-identify our professional objectives so as to take

on newer, more appropriate and more effective roles, which strive to set the required standards, which are in the larger interest of India.

THE TREADED PATH

We started our practice in 1979, with the following set of beliefs and convictions:

- Conservation of resources must be primary guidelines for all projects.
- Innovativeness, for a developing society, is a necessity not a luxury.
- It is necessary to design buildings, which in their form space and technology, reflect the continuity of the Indian traditions.
- Every problem, irrespective of its nature magnitude or constraints, has an appropriate solution.
- Appropriate solutions will only come, through clarity in the identification of the problems, the selection of correct tools, and their appropriate solutions.
- The design and construction process must ensure freedom for creative inputs at all levels of participation.

Our practice², through its two and a half decades of existence, has been able to establish that it is possible to enjoy the works in this direction, as well as to survive professionally, with the objectives that we had set for ourselves at the start of our practice.¶

Notes and References

1 Product in this context stands for a particular artifact, archetype or built form. 2 In the past 25 years we have performed many roles. Some of these roles are: a) as students of the profession, b) as architectural and interior advisors on principles of design, use of traditional materials and technologies; c) as the strategists and policy makers only; d) as the patrons of traditional arts, crafts and crafts based technologies; e) as motivators to make patrons out of willing clients; f) as generators of employment for craftsmen for the revival of the genetically inherited / developed skills; g) as responsible architects, interior designers and conservation consultants. The process of learning continues.

Gaiety Theatre Revisited: 2004 Conservation for Development

CHEENA KANWAL

This paper discusses the revival of Gaiety Theatre Complex at Simla being carried out under the aegis of the Department for Language, Art and Culture, Government of Himachal Pradesh. It provides the historical background of the Raj years during which time the theatre flourished and was renowned for its theatricals from 'white' as well as 'native' amateur groups. The paper highlights the importance of not just the aspects related to architectural conservation but also the associated cultural conservation. It also emphasizes the need to incorporate modern technological solutions into conservation projects and increased participation from the local people who are the actual custodians of this heritage.

THE BACKSTAGE

"It is the great drawback of the actor's art that his art departs with him: the poet, the sculptor, the painter hand down their work to posterity; but beyond tradition there is nothing to give the existing generation a tangible idea of the genius that animated the leading actors of the past century."

This was expressed in a speech made by General G.C. Morton when he acknowledged the honour done to him and his family during a dinner hosted to bid them farewell in October of 1898. The family had for twenty seven years; attended to details regarding production of plays and general management of the Simla Amateur Dramatic Club (A.D.C.). It was one among the many who had painstakingly worked to keep the very English heritage alive in a foreign land. Although, this was said much oblivious of

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the times that were to come and sweep the world of the age long traditions cherished by the earlier generations in the absence of modern media such as photography, cinematography, computer imaging and Laser. Nevertheless the profundity of these words still evoke feelings that can be experienced by many a theatre loving genre even today. The same year also marked the end of the association of a constant supporter and performer in the Club's activities, the couple known as the 'Deanes'.

Colonel Thomas and Mrs. Jessie Murray Deane were devoted artists who adorned the Simla theatricals with their many accomplished performances over several years. On 30th May 1887, at the opening of the new Gaiety Theatre inside the neo-Gothic style Town Hall building, Mrs. 'Joey' Deane spoke a prologue which was specially written by Colonel Deane.

Coincidently, some excerpts from this poem are a befitting tribute to the glory of this once magnificent and vibrant arena bustling the *centre stage* of Simla circles with the latest; not only in ladies' fashion wear and perfumery but also theatre productions from the best London plays of the time.

"Since plays are but the mirrors of our lives, On this new stage, let maidens, widows, wives, Essay the art to please, and nothing more, And add to past success another score, Some active minds, in Simla, oft must be, Weighed down by idleness to misery, No fool should thus his time in suffering waste, The stage here offers an amusement chaste, So let us strive each other to excel, Shall we succeed or not? Why – 'Time will Tell." 'Time will Tell' was the opening play of the new theatre hence the allusion in the last line. The revelry on the achievement of having something as foregone as a proper proscenium theatre that was indeed a much wanted place; to unwind from the mundane duties of the establishment and a chance to rejoice in the cool and long summer evenings of Simla, came across remarkably in the lines above.

And of course, the very existence of Simla came about as a remembrance of beloved home that was Britain; among the minds of the homesick community that was, in a way; forced to find refuge in the hills of middle Himalayas. Thus started a saga of recreation for a home away from home where as much social and cultural ethos was enlivened as the physical resources and imaginative minds could permit.

PROPS AND ALL

Raja Bhasin in his book entitled *Simla: The Summer Capital of British India* suggests about the old Town Hall building, "Some say it was Gothic others say it was Roman architecture, but from what I remember it was P.W.D.; if not, it might have been still standing."

Henry Erwin's building was opened in the year of 1887 – a tall massive structure of five stories including a basement in grey quartzite brought from the Jutogh hills nearby. He was also the architect who executed plans for the Viceregal Lodge around the same time. It is said that perhaps the stress of a hurried completion of the latter building for Lord Dufferin for occupancy before his impending departure was the primary cause of neglect with which the old Town Hall construction was handled. Henry Erwin was an able designer having many beautiful structures to his credit in Simla and back home in England.


Fig.2. Floor plans and section

Basement: Stores for the armoury

Ground Floor: Theatre with corridors, Masonic Hall, Municipal Offices separate for European and Natives divided by a courtyard, A Police Station with a treasure room and a Chowkidar's room.

First Floor: *Gallery of Theatre, bar room and dressing rooms, Station Library, a Volunteer Armoury with an underground entrance.*

Second Floor: A Ball Room with overlooking galleries on two sides, a band stand and a retiring room, Drawing room, ladies and gentlemen's cloak room and a bar and a card room.

Third Floor: Gallery of ball-room, Supper room with a promenading corridor and a purveyor's room and in the tower- one room for the Volunteer Adjutant and one for meteorological observations.

Courtesy: Architect Ved Segan

The building was spanned in rows of cross-vaulted hallways on either side of the main entrance from the Ridge grounds. The Gaiety Theatre on the ground floor had an entrance from the Mall as well. The external façade of the building contained a series of Gothic arched windows to break the monotony of a huge surface. The height of the upper three floors stood at approximately 20metres flaunting the Simla skyline like a large protuberance also remarked by Lord Curzon as 'gaunt and graceless'.

The main portion of the roof of the building was pitched from North to South being slightly higher than the slope on the western end - that been pitched east to west. The final cover was in grey slate underlined with seasoned local timber. Numerous turrets and towers of varying sizes jutted out of the roof – some were fireplace ducts and others especially along the edges of the roof largely adding character and aesthetic appeal to the monolith. The theatre inside could be termed a miniature replica on the lines of the Royal Albert Hall in London. The auditorium was repeatedly altered and improved over the years. Initially there were six upper boxes, three on each side with a gallery in the centre. Later the central gallery was altered to accommodate another three large boxes. Presently a gallery runs right round the theatre with the seats in the middle raised in tiers to allow an uninterrupted view of the stage.

The décor inside with heavily gilded gold motifs and emblems adorned the subtle pale shade of the parapets and walls and added a Victorian aura to the interior. The upholstery of the general gallery was in patterned rose coloured velvet where as the sofas and chaises for the more dignified guests in the upper boxes were of yellow satin. Plain crimson velvet curtains in four layers above the wooden stage completed the look. The acoustics of the theatre were said to be excellent at that time.



Fig.3.The colonnaded upper cushioned boxes with parapets. The timber columns decorated with papierwere mache work



Fig.4. A view of the lower stall inside the main hall of the theatre. Tiered seating was considered an exceptional design of the arrangement in late 1800.



Up to 1896 the theatre continued to be lighted by oil lamps that were a source of great inconvenience and danger. The commendable foresight with which the British are bestowed in planning matters they stored sand bags in the wings to put off fire in case of any such eventuality. Very fortunately in the entire period of almost nine years before electric lighting was installed in the building there was no major accident barring an occasional one in which there was reported a loss of a painted scenery for the back drop. The lighting for the stage and the auditorium had cost about Rupees 15,000 at that time and the same plant was used to light the Masonic Lodge and the ball room of the Town Hall.

ТНЕ АСТ

In 1911, the upper three stories of the Town Hall were demolished owing to the structure being faulty and therefore unsafe. It is believed that the flying buttresses meant to support the main structure instead pushed the walls in thereby leading to fissures and faults. There was a possibility of substandard material been used owing to the parallel construction going on of the Viceregal Lodge which obviously required everything that was top quality. 1911 also saw the advent of the Afghan War and the Government faced with shortage and diversion of funds decided to leave the structure half demolished and in disrepair. Subsequently the left over portion of the lower stories of the Town Hall that housed the Gaiety Theatre continued to suffer damage and neglect until recently when the present administration actually started the restoration of what remained of it.

For a long time the building was owned by the Municipal Corporation that had occupied a portion of the first floor for the electricity and tax offices. The Police Control Room was always with the Police Department and the theatre and Amateur Dramatic Club continued to be monopolized by the Army Headquarters stationed at Simla. The constitution of the A.D.C. had an entire list on its Executive Committee consisting only of army officers from whom one was a General Secretary and the President of India being the Patron. Nobody knows clearly how and when the Simla A.D.C. who was supposed to be a custodian of the premises to promote theatre and other arts actually reduced them to just a card-room club and brought to nought the very activity for which it was formulated in the first place.

With much deliberation by the State department for Art, Language and Culture the building was purchased by it in the year 1986 for a sum of Rs. 40 lakhs. In 1985 with the help of INTACH (Indian National Trust for Art and Cultural Heritage), Prithvi Theatre- Bombay and some local residents a committee was set up to look into the preservation of this unique heritage of Simla. It took almost twenty long years before any real action could be mobilized to safeguard the Gaiety Theatre. Architect Ved Segan was consulted for professional advice. He has many prestigious projects to his credit such as the Prithvi Theatre, Afghan Church, Jijabhai Udyan Conservatory and also a conservation proposal for the General Post Office at Mumbai. He was a member of the Heritage Committee set up by INTACH in 1985 and one of the founder members of the Bombay Conservation Group in 1988-89. A strategy was prepared to start a renovation project for Gaiety Complex in a phased manner under his guidance. The first phase of the project concentrated in securing the Gaiety from the eternal water retention and dampness that had pervaded through its very foundations. Nearly twenty million rupees were earmarked for this purpose. The work started in early 2004.

THE ACTORS AND AUDIENCE

Modern theatre in India had its origin at nearly the same time as the early dramatic performances that took place at Simla. In 1831, Prasanna Kumar Thakur established the 'Hindu Rangamanch' at Calcutta and staged Wilson's English translation of Bhavabhuti's Sanskrit drama 'Uttar Ramacharitam'. Bengali theatre continued its journey through social dramas of Girish Chandra Ghosh, historical dramas of D.L. Roy and artistic dramas of Rabindranath Tagore. This was the beginning of Modern theatre. About the same time, professional theatre companies from abroad had hesitatingly started visiting the cities of Kolkata and Mumbai bringing in the new Western form to the shores of India. Simla was fortunate to have a direct transfer of such ideas because of the regular contact with these cities by its official travelers.

Edward J. Buck suggested the first written records of play-acting in Simla from Emily Eden's diary. On 9th June 1838 she wrote," We went to a play last night. There is a sort of little theatre at Simla, small and hot, and somewhat dirty, but it does very well....." The theatre mentioned there in was by no means a reference to Gaiety Theatre! In later times - Baden Powell, Rudyard Kipling, the Kendall family of U.K. and many others were associated with this historic theatre. The Viceroy was the Patron of A.D.C. that continued to have the support from all of them irrespective of their interest in dramatics. So much that Lord Lytton himself supervised the rehearsals of a play called 'Walpole' in 1878. Usually, only the royal families of Indian princely States were invited or allowed into the theatre in early 20th century. That too probably was because they could afford to pay handsomely for the Royal boxes in the auditorium. 'Desi Babus' was an amateur group of natives and performed the first Hindustani play in 1893 in Simla. They used to perform at Nabha Estate, Phagli, Lal Pani and Boileauganj. The Gaiety management allowed them to perform at the theatre once in a year but then ceased to give permission because of the heavy stagecraft that they used.

Durga Das, an Indian Municipal Commissioner in late



The detail of stone work of bav window Fig.5. а above the Police Control Room the southat western corner of the building

Fig.6.The encroachments around the Theatre on the Mall Road, Simla

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LIGHE & CONTECTIONERS

NESCAFE

1928 got the Gaiety to reopen once again for local Indian amateur clubs which gave a boost to many other clubs to form and perform. Notable among those were Indian, Edward, Premier and National. The revered artist of Indian cinema K.L.Saigal was a member of the National group and started his journey into acting from the Gaiety stage. In late sixties Himachali artists like Ramesh Gaur and Manohar Singh came to fore and brought the reputed National School of Drama to integrate Simla and the Gaiety Theatre to mainstream drama. Another artist was Amla Rai who gained fame on stage and Indian television and also started her group 'Abhivyakti' here. Shashi Kapoor and Anupam Kher have also been visitors from time to time.

There were always odds against these people who struggled to keep the art form alive and provided a reflection of the society and culture to the best of their abilities. However the audiences' preferences gradually changed to cinema and television and theatricals began to lose their popularity. In addition the absence of State level support from educational or other institutions and hiked rental charges by the A.D.C. at Gaiety with lack of improved facilities such as rehearsal rooms or green rooms led to a decline in production and performances.

THE APPLAUSE

Over the decades this building sheltered and protected an art form as a showpiece of prevailing cultural milieu for generation after generation. It stood like a mute spectator reverberating with sounds of laughter, cries, whispers, cat-calls and thunderous noises of clapping hands. Above all it was a place that pulsated with activity and provided amusement to many a pleasure seeking soul for a long time. It gave Simla a reason to feel alive and in tune with the rest of the world. It is only appropriate therefore that such a place must be revived for all its glory As the world moves on to modernity and people imbibe various changes to suit the temperament and pace of today's life it is pertinent that some old schools must be kept alive for inspiration and thought.

Resistance to change is fundamental human nature. As the people of Simla got used to the stump that remained from the old building and the gradual disintegration of Gaiety Theatre it was understandable that some opposition was faced time and again that prevented the project from beginning in the first place. There were unresolved issues around the ownership



the stage inside the Gaiety Theatre

of the building, the financial viability, outside consultants being entrusted with a prestigious local project, building by-laws, the long term sustainability etc. which raised more doubts than cleared any. It is imperative that conservation projects such as these do not lose their true meaning by being susceptible to such controversy.

The conservation plans for the Town Hall and Gaiety Theatre were proposed keeping a suitable 'adaptive reuse strategy' in mind. The design for the building elaborated a concept that not only brought back similar features as in the original building but also responded to present needs. For example, by no means- financial or otherwise was it plausible to raise a structure similar to the original one at 20 metres high above the level of ridge grounds. Hence the present roof umbrella was kept 10 metres high accommodating a recreation multi-purpose hall for dance and theatre troupes. Stone and mortar from the existing vaults and pillars underwent exhaustive laboratory testing before the load of the superstructure was decided. The construction in the first phase underway now is hinged steel fabrication including stanchions and girders. There are steel roof trusses supporting the rest of the steel framework for the roof. The structure incorporates earthquake resistant technology prepared by Mumbai based structural engineers (Parikh, Kulkarni and Associates). However the masonry work is proposed to be done in similar stone work that existed before and even the plaster components to be kept similar to preserve the

authentic look. The plans for the Gaiety Theatre comprehend a reinstated original pristine Victorian appeal without much modification. There will be an effort to revive the interiors with the same style of furniture, upholstery and other decorations. However, the lighting and sound systems will be contemporary and state- of- the- art.

Whether theatre groups too will revive to give better performances after the completion of this project is a responsibility of the society as a whole. The Simla residents as well as visitors must ensure that the true and total heritage is maintained in the years to come. The waves of change and apathy of the general public do instill a doubt on many minds but it will be true to say here once again that 'Time will Tell'. The soul will have to resurrect the body.¶

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Integrated Spatial Environmental Planning A Tool for Environment Protection

AVINASH KARERA AND ANURAG MISHRA

Despite considerable efforts and significant achievements since the "Earth Summit", many of the problems which plagued the Earth during the 20th century still linger on.

The latest readings reveal a planet still in need of intensive care. Poverty, pollution and population growth; rural poverty and rapid urbanization; wasteful consumption habits and growing demand for water, land and energy continue to place intense pressures on the planet's life support systems, threatening our ability to achieve sustainable development.

Sustainable development rests on three pillars: economic growth, social progress and protection of our environment and natural resources.

INTRODUCTION

Developmental activities viz industrialization, mining, urbanization etc. are on the increase and therefore the environmental pollution due to emissions and waste generated from these activities. The air, water and soil pollution due to its nature has a potential to cause irreversible reactions in the environment and hence poses a major threat to sustainable development. Lack of proper land use control is resulting in poor land use compatibility. Since the carrying capacity of the environment is not unlimited and some areas or ecosystems are more susceptible to adverse environmental impacts than others, the unplanned

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and haphazard location of developmental activities might substantially create complex environmental pollution problems and high risk environment.

Presently, regional plans that incorporate environmental component and provide for various zones compatible to the surrounding land use, do not exist in India. Hence, the entrepreneur is forced to purchase a site convenient to him and then apply for clearances. Normally, even if a site is presently not in an earmarked/notified land use, the land use conversion is made based on clearances from environmental aspects and other considerations, such as availability of electricity, water supply, etc.

A proposed site for starting an activity is cleared from environmental angle, after reviewing its pollution potential and probable impact on the environment, by the State Pollution Control Board and the State Environmental Committees or Site Clearance Committees. An activity cleared from environmental angle will however pollute because the discharge/ emission of pollutants is permitted up to a certain amount of tolerable levels. Such tolerable levels are set based on technological and economic feasibility considerations. Furthermore, appropriate pollution control equipment provided in an industry to meet the standards, may not be performing or operating at its desired efficiency all the time which implies that there is an additional risk of pollution. The site may turnout to be either suitable or unsuitable. It becomes more complex when we club a number of activities in a vicinity and small amount of pollution from all activities then add up to a big problem.

Conventionally, the environmental pollution problems are solved by introducing environmental management techniques such as control of pollution at source, provision of sewage treatment facilities etc. However, environmental risks are not being controlled completely by such solutions. The environmental aspects are to be induced into each of the developmental activities at the planning stage itself and are to be well coordinated and balanced. Presently, the environmental aspects are not usually considered while preparing master plans or regional plans and the process is skewed towards developmental needs. For all developmental activities, a crucial input is land and depending on the activity a specific land use is decided.

The environmentally related land uses such as trade and industry, housing construction, mining etc. are likely to have some impact on the environment. These land uses need proper planning and integration as some of the activities have interdependencies such as industry with transport, housing etc.

The present site clearance procedures also insist on carrying out Environmental Impact Assessment (EIA) for certain projects. The EIA process turns out to be a myopic assessment as the reports are several times engineered to meet the desired results. Even if an impact is found as a result of the EIA, the impacts are nullified by changing the manufacturing process or the treatment technology. However, subsequently the industry may not find it feasible to operate even those modified systems. Also, an EIA is carried out considering the existing surrounding land use. The industry has no control on land use changes. If a sensitive land use comes up in the vicinity of the industry, impacts might be noticed even if the industry is meeting the required standards. Also, EIA is a lengthy procedure besides being expensive and, in addition, is proving to be a set back in fast and realistic decision-making process. Due to lack of land use controls around the industrial sites, areas/uses sensitive to pollution come up in the vicinity of the industrial areas. The impacts, which are mainly depending on the distances to the receiving environment, are noticed due to such uncontrolled land use changes. Adoption of strategic EIA region-wise is being considered appropriate rather than site-specific or project-specific EIA.

The spatial planning tools can help in sustainable development. In India, spatial planning approach is mostly limited to urban areas only and the regions are not normally considered for planning purposes and for attaining balanced development. The present paper details the need for usage of environmental planning as a tool for environmental protection and the priority actions needed to be taken.

SPATIALENVIRONMENTALPLANNING-THENEED

Lack of spatial planning:

The country today lacks integrated spatial planning (national/state/regional/town level). The planning is mostly limited to urban areas and even in these areas the master plans do not take into consideration the environmental aspects and the developmental needs are not well reflected. Also, the master plans are several times violated. Lack of planning is leading to unbalanced development thereby forming uneconomical agglomerations, ecologically degraded areas and over exploitation of resources. The developmental activities tend to be haphazard and uncontrolled thus leading to over use, congestion, poor land use compatibility etc. The planning solutions for achieving balanced and sustainable development have been demonstrated to a good extent in some of the countries. Some of the major constraints for introducing integrated spatial planning in India are:

- In view of the existing social and living conditions, economic interests may tend to over-ride the environmental aspects;
- · Ecosystems are already over-used in some areas;
- Introduction of spatial planning which involves highly complex nature of planning activities is a daunting task particularly in a large country, like India;
- Lack of legal framework for spatial planning, dearth of financial resources, inadequate environmental awareness, shortage of manpower and limitations in technical competence are among the constraints in integration of environmental concerns in the development process.

However, spatial planning based on assessment of existing environmental profiles as well as potential assimilative capacity could help environmentally acceptable development and resolve the conflicts which are otherwise confronted with. Planning of activities based on assessment of local or regional environmental impacts could be a useful approach for introducing the concept of spatial planning in a limited manner under Indian conditions.

Absence of environmental considerations in planning:

Presently, the environmental aspects are not usually considered while preparing master plans and the process is skewed towards developmental needs. For all developmental activities, a crucial input is land and depending on the activity a specific land use is decided. The environmentally relevant land uses are trade and commerce, housing construction, transport facilities (road, rail and water), utilities (water - surface and ground etc.), refuse/hazardous waste disposal facilities, waste water installations, quarrying and mining, power generation, forestry, recreation and tourism etc. These land uses are likely to have an impact on the environment. There is a need for the assessment of land in terms of not only the economic aspects but also the environmental aspects and the land uses are to be allocated accordingly so that the natural environment and ecological balance are not disturbed.

Inadequacy of conventional control techniques:

The environmental problems of concern and increased environmental risks are due to air pollution from vehicular, industrial and domestic sources, noise pollution, water pollution - lack of proper storm water drainage and sewerage system, improper and inadequate garbage collection and disposal system, haphazard location of industries/processes, transportation, storage and handling of toxic or hazardous chemicals, lack of adequate open space and green areas; etc. Conventionally, the environmental pollution problems are solved by introducing environmental management techniques such as control of pollution at source, providing of sewage treatment facilities etc. These measures are proving to be inadequate because of the complexity associated with the dynamics of development.

Increasing public awareness:

There is an increase in public awareness on pollution and its effects. The people today are demanding good quality of life and living conditions. The increasing public interest litigation (PILs) for relocating environmentally incompatible land use is an indication that there will be an increased need for proper planning of land uses and siting of industries and other development projects.

Growing environmental costs:

It has been proven even with in our country that though the economic considerations tend to bring in gains in a short term, the liabilities from neglecting the environmental aspects are heavier in the long run. The costs involved for cleaning up river Ganga or for introduction of unleaded petrol or for shifting industries from Delhi are just a few examples. This necessitates proper planning in advance so as to be prepared for the subsequent consequences.

Constraints in the existing industrial siting procedures

The targets for industrial development are fixed but the sites for location and development of these industries are rarely pre-determined thereby paving the way for haphazard growth of industries.

The responsibility of selecting a site is primarily entrusted with the entrepreneurs and this does not necessarily lead to objective assessment of environmental aspects.

The information base available for evaluating environmental impacts and taking decisions on industrial siting is weak. Hence, it causes subjectivity in decisionmaking process as well as lack of transparency and delay.

The environmental clearance by the regulatory

authorities does not necessarily imply zero pollution from an industry. Hence, the major challenge is not just finding a site for an industry or a developmental activity but also finding a solution for achieving sustainable development. It is being increasingly realised that the developmental activities are to be planned in such a way that the socio-economic objectives are fulfilled without causing adverse impacts on the environment.

THE POSSIBILITIES

The possibilities for a suitable response in the Indian conditions include introduction of integrated spatial planning as a long term solution. In the context of spatial planning, the planning models of other countries having similar conditions/constraints with respect to population, resources etc. can be taken as an example. For instance, the German planning system is based on 'co-operation' among various levels federal, state, regional, local etc. and 'balancing' among different sectors - industry, agriculture, forestry, environment etc. The prior interaction at the lower level makes the guidelines more acceptable and the plans more implementable on ground. At the same time, this helps in achieving a coordinated and balanced development. For the situation in our country, sectoral land use plans

for all the environmentally relevant activities such as those given below should be prepared keeping in view the developmental needs/targets and the environmental considerations and then these are to be integrated into one plan that is binding on all:

- trade and industry locations;
- housing construction;
- transport facilities (road, rail, water)
- utilities;
- refuse/hazardous waste and wastewater installations;
- quarrying/mining;
- power generation;
- agriculture;
- forestry;
- inland and coastal fisheries;
- recreation and tourism;
- water regulation and development;
- · tapping of groundwater; and
- out falls into surface water.

This helps individual sectoral authorities to meet their development targets while ensuring that these targets are achieved in an environmentally compatible manner.¶

Environmental Refugees from Sundarbans

SUGATA HAZRA

Global warming and sea level rise pose a serious threat to the existence of the small islands and island states throughout the world. Though the absolute sea level rise globally over the last century is only 20cm, locally the relative rate of rise is found to be several times more due to deltaic subsidence and siltation. Island communities in several parts of the world like Holland, Sharp and Poplar of the Chesapeak Bay region have had to settle elsewhere as some of the islands were completely eroded off. Three outer islands of Maldives have had to be vacated recently by the people due to lack of protection against storm surges, the intensity of which rises with increasing sea level. With a little rise in sea level, some of the coral reef atolls of Marshall island may lose their entire freshwater reserve and off island migration of environmental refugees may be anticipated

Environmental refugees are those groups of people who have had to leave their habitat either temporarily or permanently because of potential environmental hazards of disruption in their life supporting ecosystems (El Hinnawi, 1985). A close link between environmental degradation and population migration had been argued over the last decade (UNHCR 1993). However as it appears now, the relationship is more complex than has been envisaged earlier. Large scale migration is often, put forward as a 'cause' rather than the 'effect' of environmental degradation (Williamson, 1996). The Intergovernmental Panel on Climate Change (IPCC) noted in 1990 that the greatest effect of climate change may be on human migration as millions of people will be displaced due to shoreline erosion, coastal flooding and agricultural disruption. A prognostication of the number of environmental refugees in a greenhouse affected world of 2050 A.D.

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stands close to 150 million (Mayer 1993). This is a group of people who need to be registered and require international recognition, as well as rehabilitation programme. Environmental refugees may be considered as bio-indicators of environmental quality and national indicators of resource management competence.

In India, though the plight of environmental refugees uprooted from their ecological niches are well known from earthquake devastated Bhuj, Gas affected Bhopal, or Narmada Dam catchments, there is no clear-cut policy to record and register these groups of people. Neither is there any appropriate rehabilitation programme. They do not satisfy the legal criterion for trans border refugees. Again, in most of these cases, the nature of environmental degradation is of 'rapid on set' type (Lonergan, 1994) and the population migration 'inland' is temporary.

However, the situation is different in the island system of Sundarban delta where some islands are fast vanishing from the map rendering thousands of people permanently homeless and displaced from their original habitat.

The Sundarbans of India and Bangladesh constitute one of the World's largest Mangrove system, with the highest species diversity, and the only one with Tiger population and has been designated as a World Heritage site. The area consists of low elevation deltaic islands, vegetated tidal ridges and swamp traversed by highly mobile estuarine channels and creeks. It is threatened by the high incidence of cyclones and sea level rise. The rate of relative sea level rise is presently approaching 3.14 mm per year near Sagar island (Hazra et al, 2002) and this could increase to 3.5 mm per year over the next few decades due to global warming, including the other global and local factors. At Bangladesh the rate is more than double due to higher rate of deltaic subsidence. In India, thousands of people are being displaced from their original habitats from islands like Ghoramara forming a new group of vulnerable community of 'environmental migrants'. The biological processes of this huge arial extent of mangrove forest is also one of the key factors influencing and affected by climate change in this part of the Bay of Bengal. More over, the ecological community of Sundarbans, which depended upon the resource of mangrove forest for it's livelihood is also being threatened by rapid degradation of mangrove forest. Post partition refugee influx, proliferation of aquaculture farms and other anthropogenic activities leading to large scale reclamation are all causing further environmental stress. The resource depletion and environmental stress build up can trigger large scale migration in the Sundarban island system in near future.

A time series analysis of shoreline changes (Hazra et al 2002) of Sundarbans using satellite data reveals that while some of the islands like Lohachara, Bedford, Kabasgadi have vanished altogether, a few others like Ghoramara, Sagar are on the verge of total to partial extinction. Even the eastern islands like Bhangaduni, Dalhousi are facing erosion and submergence. Over past 30 years Sundarban island system, inspite of feeble delta outbuilding phases along the sand head and island fringes, has witnessed a total loss of 100 km² of land area, making thousands of people environmental refugees, yet of a different kind.

The process of land degradation erosion and submergence in this estuarine island system is of 'slow onset' type and of 'permanent' nature. Analysis of tide gauge record of Sagar Island by School of Oceanographic Studies reveals that the relative sea level in this area is rising at the rate 3.14 mm/yr over the past few decade which is slightly more than the global average. It is also noticed that rate of erosion and submergence of these island systems has a close correlation with the rate of change of sea level in the area (Hazra et al 2002).The entire population of the villages of Khasimara, Baisnabpara, Khasimara Char and Baghpara of the Ghoramara Island has had to leave its original habitat and seek refuge in the nearby island like Sagar.

Apart from the sea level rise, the island systems is also vulnerable due to recurrent coastal flooding, embankment failure and severe cyclones and storm surges, which may be termed as 'rapid onset' type environmental disaster. An earthen embankments of 3520 Km. in length was erected in the early twentieth century to protect the agricultural land from saline water flooding and loss of crop. However with time the embankments have been worn out and the river beds have been raised by siltation. Some of the rivers like Muringanga are even flowing above the level of island coasts. This has created conditions for breach of embankment and total wash out during cyclone and storm surges. Over last two decades crop and forest property worth 950 million Rupees has been damaged or lost and over 0.4 million people have been affected out of which around 600 families have had to migrate and settle elsewhere as environmental

Table 1

Projected Loss of Island Area due to Erosion/ Submergence by 2020	
Inhabited island	Reserve forest/
	wetland
Sagar - 15%	Lothian – 3%
Ghoramara - 30%	Dhulibasani – 3%
Namkhana - 08%	Dhanchi – 15%
Mousuni - 15%	Bulcheri – 10%
Patharpratima (G-Plot) - 09%	Ajmalmari – 11%
Dakshin Surendranagar - 12%	Bhangaduani – 32%

refugees due to storm surges and coastal flooding. The islands of Ghoramara, Dublat G.P.of Sagar island, G-Plot and Mousuni are extremely vulnerable in this respect.

In case of Sundarbans, as the population is entirely dependent upon coastal resources, it is very difficult for them to leave the coast and live elsewhere. The situation for the environmental refugees of Sundarbans is further complicated due to the fact that

- most of them are primarily migrants from other parts of the country and trans-border refugees of different phases. The settlements of refugee fishermen at Fresherganj – Bak khali from Chattogram and Noakhali of Bangladesh since 1953, and those from Howrah and Uluberia at Jambudwip are noteworthy in this respect.
- they already exist in a high risk zone of cyclonic disaster and storm surge
- most part of the island system of Sundarban is a notified coastal regulatory zone-1 area and no large scale resettlement and development activities are permitted there
- population pressure is increasing alarmingly on the fragile ecosystem, with a recorded decennial growth rate of 28-40%.

Sagar is the most populated and vulnerable island of the Hoogly estuary. Over the last few decades the island has registered a land loss of 12 Km² with marginal accretion on the portion of the southern and eastern fringe. Within the last few decades, 3800 persons have been rendered homeless from Sagar island itself due to sea level rise, coastal erosion and flooding due to cyclone/surges. In addition, four refuge colonies for the displaced persons from other islands (Lohachara, Ghoramara etc) have been set up at Sagar. A computer generated Sea Level - Shore line change model (JUCOAST, 2000) developed at the school demonstrates that with the current rate of SLR, the Sagar island will loose around 15% of its existing land area by the 2020 (Hazra et al 2002). An estimate considering the population growth rate and future population density of Sagar indicates that the number of displaced persons due to SLR and associated storm surges/coastal flooding will be around 28,000 by 2020 (Hazra et al, 2003). The model further demonstrates that with a little (1 mm/y) fall in the rate of sea level rise, the area as a whole shows accretion/emergence with a pronounced pro gradation in the southern part. However even with a 1-mm/yr rise over the existing rate, the southern load continues to prograde with reduction of the overall area from west and east. But in case of any further rise in the rate of SLR the sea enters from all sides of the island and exhibits a typical feature of submergence. Similar output(Table 1) indicate that 10 other vulnerable islands together may loose around 100Km² of land area by 2020 which constitutes 11% of the total area of the 12 most vulnerable islands.

The projected no of environmentally displaced persons from Sundarbans due to climate change, sea level rise and associated disaster of storm surges/ coastal flooding may thus be estimated to be around 69,000 by the year 2020.

Considering the number of already displaced persons from different islands, rate of area loss, habitation pattern and population density of these islands, the projected number of displaced persons from Sundarbans by the year 2020, stands as given in Table 2.

It is, therefore, imperative that unless appropriate futuristic planning to minimise environmental insecurity and migration stress is undertaken at this point of time, this group of disenfranchised people will poses a serious threat to the environmental balance of this ecologically sensitive area.¶

Table 2

Projected number of	
displaced persons from Erosion	
Ghoramara	1600
Sagar	28,000
Mousuni	5700
Namkhana	15000
G-Plot	6000
Dakshin Surendranagar	12700
Total	69,000

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Society, Energy and Sustainable Development

PATRICK DEVINE-WRIGHT

This paper discusses what a sustainable energy approach might mean for the UK by contrasting it with the nature of our current energy generation and supply system. It summarises what we use energy for, what sort of infrastructure system has been developed and what sorts of fuels we currently use. The consequences of the current system for climate change are outlined together with current policy responses. Social aspects of a sustainable energy system are explored in more detail, both because these are typically narrowly defined and because they are crucial elements of a more sustainable approach. A switch towards better public engagement and understanding, more transparent billing, genuine public participation and local renewable energy generation is advocated. This approach can lead to a more vital future for both our rural and urban areas: in other words a future based on sustainable energy. The paper draws attention to environmental, social-psychological, economic, technical, political and geographical aspects of energy with a particular focus upon the socialpsychology of sustainable energy, for two reasons: firstly, the author believes that this aspect is treated narrowly, if at all, in energy discussions and, secondly, it is his primary area of expertise, as an environmental and social psychologist.

WHAT WE USE ENERGY FOR

We use energy for a wide range of everyday activities: most notably to generate electricity, which is then used for lighting, heating, cooking, mobility, power etc. Whilst some types of energy are only used to generate electricity (e.g. nuclear and hydro), most are also used for a range of other

Dr. Patrick Devine-Wright is Senior Research Fellow in Environmental Psychology Institute of Energy and Sustainable Development, De Montfort University, Leicester, UK purposes, directly for heating and cooking (oil and gas), industrial processes (coal and gas) and mobility (petrol(eum). Therefore, energy used for generating electricity is only a part of the total energy used. Ultimately, our consumption of energy is not an end in itself but aims to provide for our modern quality of life. In modern industrialised societies, expectations have risen enormously in the past 100 years about which levels of energy services are considered adequate for living. At the other end of the wealth spectrum, there is justifiable dismay at the number of people, mainly from vulnerable social groups, who remain in fuel poverty and are more likely to die in the winter cold. In less industrialised societies, such disparities between the 'fuel rich' and the 'fuel poor' are even more marked. With growing awareness of climate change, the contemporary challenge is to provide energy for a good quality of life in a way that does not simultaneously destroy the ecosystems in which we live; to reign in unbridled growth in energy consumption whilst ensuring that all people have adequate heating, lighting and power. This has to be the fundamental attribute of a 'sustainable energy' system. I also feel that there needs to be more social debate, beyond 'deep green' thinkers, about whether rising material consumption levels deliver anything akin to a better quality of life, or, more controversially, happiness.

THE ENERGY SYSTEM WE HAVE

The energy 'system' that we have in place in the UK can be characterized as a centralised network of supply organized around a national grid - a complex criss-cross of large-scale power stations, gas pipelines, electricity pylons and wires (Patterson, 1999). From a rural perspective, it is worth noting that the system is predominantly rural based, with the aim of meeting urban energy demand. The state (and taxpayer!) developed the power stations and grid distribution system in an era when the provision of fossil-fuel energy extracted from North Sea oil and gas fields, and nuclear energy, was the chief political concern and when planning consent for large scale power stations was easier to achieve than today. However, a centralised network is not the only way of constructing a country or region's energy system. Early power stations in the late 19th and early 20th centuries were based in cities to cater for local energy demand. These came to be replaced by a system under state control with ever larger power stations situated further and further away from centres of demand (i.e. in rural areas) exploiting economies of scale but

neglecting external costs (Hughes, 1988). This system has had its critics (e.g. Lovins, 1977); for example there are huge inefficiencies built into the existing system that most consumers are unaware of. Every unit of electricity consumed requires roughly three times that amount of primary energy! This stems from inefficient power generation that dumps waste heat into the atmosphere or adjacent rivers, rather than using it productively, and lengthy supply systems that inevitably 'leak'.

CENTRALISED SYSTEMS AND URBAN AND RURAL LINKS

For these reasons and others, the centralised energy system is being challenged by a return to smaller power stations and more local generation and supply at neighbourhood and building level. What does this transformation look like? Well, if you picture in your mind's eye a typical power station, you would probably see a huge techno/industrial complex with pipes, valves and cooling towers pumping steam into the atmosphere. However, new technologies and new policies are leading to smaller power stations such as combined heat and power (CHP) plants and renewable energy technologies. The location of smaller power stations closer to areas of consumption leads to less 'leakages' and allows the wasted heat to be used beneficially to supply hot water to homes and businesses. This is why neighbourhood CHP plants feeding community heating systems are used widely in municipal energy planning in Germany and Scandinavia: because they use less energy, more efficiently, at lower cost to the consumer and emit less greenhouse gases into the atmosphere. So far, development in the UK has been distinctly patchy, but there are encouraging signs that this is changing, with more credence by policy makers today and recent budget and energy policy statements have begun to favour chp technology. It is the basis of innovative developments in both urban (e.g. Leicester District Heating CHP scheme and BedZed in London) and rural (e.g. the bio-gas system at Holsworthy in Devon) areas. It has obvious benefits for all medium to large scale new build housing developments, with renewable fuels supplied from rurally grown biomass for example, but it requires a level of integrated planning and design that is rare. A policy maker with vision would legislate that all new developments, especially public/private partnerships, to gain planning permission should adequately defend why they would not employ such a system supplied by locally grown biomass that could rejuvenate local farming! This sort

of integrated development could promote rural renewal as well as links between urban fringe and rural areas.

But even this illustration falls short of what the future may hold because future power generation will also consist of buildings that integrate power generation into the building structure itself. In effect, all homes could become mini-power stations! The Institute of Energy and Sustainable Development at De Montfort University is a member of the INREB Faraday Partnership, which is researching and developing the integration of renewable energy in buildings. The sorts of technologies that would be involved include solar hot water heaters, solar photovoltaic panels, smallscale wind turbines and hydrogen fuel cells. But mention of solar power leads to the final point of description of the current system: the types of energy sources that we currently use.

THE FUELS WE USE

The fuels used to generate electricity in the year 2000 in the UK were: natural gas - 39%, coal - 31%, nuclear - 21%, oil - 1.5%, hydro - 1%, other fuel sources - 2.5% and imported – 4%. The most important point to note here is that natural gas, coal and oil, which collectively represent 71.5% of all energy used to generate electricity, are non-renewable fossil-fuels that contribute to climate change by releasing greenhouse gas emissions into the atmosphere when burned. Renewable energy sources account for only 3.5%, most of which is older hydroelectric power, which may surprise some considering the amount of publicity that new wind farms tend to generate! Finally, nuclear power contributes a significant proportion at 21% and its supporters have argued that since it does not emit greenhouse gases, it is a vital solution to climate change. Climate change is the main driver leading the sustainable energy agenda. The prospects for all living creatures on the earth are threatened by the ever-increasing emissions of greenhouse gases into the atmosphere. This is seen as the cause of gradually rising rates of temperature and radical shifts in climate patterns producing potentially catastrophic consequences that we can foresee and, quite probably, many we can't. The recent Royal Commission on Environment and Pollution report (2000) identified a need to reduce annual UK CO² emissions by 2050 to a level that is 60% what they were in 1990. This is a formidable objective that will require increases in energy conservation and the deployment of renewable energy in a way that

represents a step-change from our current approach. Such a step-change is broader that devising new technical solutions or 'quick fixes', but will require political, cultural and social change.

WHAT IS THE GOVERNMENT DOING TO CREATE A MORE SUSTAINABLE ENERGY SYSTEM?

The government's thinking has been revealed in the recent PIU report on Energy Policy (2001) and the Energy White Paper (2003). These support an approach based upon liberalised, competitive energy markets, ensuring reliable, secure, competitively priced energy supply. The White Paper supported more renewable energy development and greater energy conservation while leaving the door open for more nuclear power stations. Currently announced initiatives to deliver this policy include: requiring utilities to supply 10% of their electricity from renewable sources by 2010 (the 'Renewables Obligation'); increasing energy efficiency by 20% by the same date (using the 'Energy Efficiency Commitment'), the Climate Change Levy (the beginnings of a 'green' tax on energy consumption by business, administered by the Carbon Trust) and ordering regional assemblies to assess regional renewable energy resource availability and to set targets for locally-appropriate implementation. But will this policy and these initiatives create a more sustainable energy approach? Arguably, policy makers have not gone far enough.

Social aspects of a sustainable energy system need mentioning because hitherto, these have rarely gone beyond a narrow, if important, focus upon fuel poverty. It is useful to start with the concept of energy itself: research has shown that for most, 'energy' is an abstract, vague concept little used by non-experts (Hedges, 1990). The centralised energy network has contributed to this, creating an 'out of sight, out of mind' mentality amongst people divorced by distance from the environmental costs of their energy consumption – for most, it is just a switch that we turn on or off (Pasqualetti, 1999). The way we pay our bills further contributes to this mentality since it is increasingly indirect and aggregated, with no feedback about the type of fuels used to create the electricity we use or where it has been generated. This needs to change to promote engagement amongst people that will lead to a better understanding of the changes required (Devine-Wright, McAlpine and Batley-White, 2001). The PIU report called for a 'national public

debate' to help shape a 'radical agenda' for energy in the UK, hoping to galvanise discussion of the social, cultural and political changes required to deal with climate change. In my view, this just won't happen unless social aspects of sustainable energy are addressed with the same enthusiasm policy-makers display for economic, technical security and aspects. Some possibilities include:

- Better public consultation, with enhanced opportunities for genuine participation and stakeholding in all new energy development (including encouraging social energy enterprises through village companies or cooperatives, to enable local people to benefit from energy profits; integrating energy issues within village appraisals and community planning etc.)
- Linking local power stations to rural biomass supply, encouraging farmers to switch to energy crops from mass produced, over-subsidised, nonorganic food crops
- New billing procedures (showing CO² emissions and type of fuels used to generate electricity), and wider, better use of energy efficiency labeling, to make energy use less 'out of sight, out of mind'

These actions would enable people to be more aware of the harmful consequences of current patterns of energy use and to take responsibility in an equitable way for their own actions. Behaviour change is more likely if people derive some personal benefit from switching to a more sustainable energy system and feel some sense of control over decision-making. This is where moves towards greater energy efficiency, more locally based renewable energy generation and better public participation, are vital. Recent research carried out by the author in South Wales indicated overwhelming public support for rural wind farms IF the community was involved as partners in development and profits were returned back to the local community (Devine-Wright, in press). NIMBYism (not in my back yard) is not an inevitable social response to energy development. In the UK, the Countryside Agency's Community Renewables Initiative is an excellent indication that social aspects, and social benefits, of energy are beginning to be fully appreciated by government. This can lead to more vital rural and urban areas, regeneration and sustainable development, in short to sustainable energy.

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Children's Participation in Environment Management

MEENAKSHI BATRA

CHILDREN AND PARTICIPATION

Over the past few decades the poor people living in developing countries have been at the receiving end of waves of interest from governments, bilateral donors, NGOs, and INGOs by way of involving them more actively in their development processes. Many lessons have been learnt on issues related to poor men and poor women's participation from a range of programmes. More lately increasingly new models and approaches are being developed for participation of children in decisions that affect their lives. Innovative experiments at the ground level governance have opened debates and space for up-scaling participation in the larger government and donor funded programmes.

Participation should not be percieved as an end in itself but a means or an approach to empower communities. While empowerment and participation are the different sides of the same coin, participation also helps make the programmes relevant to people and their situation as the projects and processes become more informed. Participation is also a process that has different levels and people move from one level to a higher one. Referring to Hart's model¹ of participation, while at the top end of the participation ladder is development programme initiated, implemented and owned by the people at the other end of the spectrum is *Manipulation*. In *Manipulation*, children and their communities have no understanding of the issues and hence do not understand their actions. People are consulted but are given no feedback on the use of ideas they share during consultation.

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Other level is Tokenism. Here, children, women and men are apparently given a voice. They are invited to sit in conference panels as representatives but no opportunity is provided for them to formulate their ideas on the subject of discussion. There is also no process of consultation with other children they are supposed to represent. Beyond this several levels represent genuine participation and there is always scope and opportunity to move from lower to higher level. One of the lower end levels is Assigned but informed. This represents the first level of genuine participation. Here, men, women and children understand the intentions of the project, they know who made the decision concerning their involvement and why, they have a meaningful role, and they volunteered for the project after the project was explained to them. Next level is Consulted and informed. Here, the project is designed and run by adults but children understand the project and their

opinions are treated seriously. And run by men and women who understand the project and their opinions are treated seriously. Next level is Adult initiated, shared decisions with children. Although adults initiated the project, the decision making is shared with young people. Child initiated and directed is at the next level. Children can initiate and direct their own projects provided adults are able to leave children alone to design their own projects. Finally at the top end is Child initiated, shared decisions with adults. This is the highest level of participation, according to Hart's model. Here, young people incorporate adults into projects they have designed and managed. Hart does not differentiate it from the other levels of participation. He explains this level by citing examples and by saying that this kind of participation is very rare.

Many NGOs and INGOs working with children are increasingly adopting participatory approaches to programme development and implementation, rather focussing on participatory approaches in a cross cutting way through out the project cycle management. In addition to lessons learnt from the work of civil society organisations and governments on child participation the United Nations Convention on Child Rights signed by all countries across the world except one provides as part of Articles 12 that : Girls and boys have the right to be involved in decisions affecting them. Article 12 places an obligation on governments to ensure that girls' and boys' views are sought and considered in all matters that affect their lives. Children of any age should be allowed to express their views and in ways with which they are comfortable.'

Many NGOs in our country have helped children set up their forums in the form of children's clubs, Bal Panchayats, Prerna Manchs, children committees for village development etc. The essential core of establishing such forums is to provide a space for children to discuss the issues of concern for them and to have a say in the matters that concern them. Children have been successfully addressing issues related to education system, child labour, livelihood for village, and discrimination of various forms. These forms are also being increasingly used to address the issues related to environment in and around the communities where children live.

CHILD PARTICIPATION AND ENVIRONMENT PROTECTION

Traditionally children have been involved in nature conservation programmes run by many organisations. Mostly such programmes are run by children yet determined by adults. Children interact with the environment or nature in a much broader manner and it is not just restricted to an extra curricular activity in urban elite schools. Children in villages along with their families depend upon rainfall, fertile lands and good seasons for their survival. An environmental disaster could easily interfere with the lives of poor and marginalize them even further. Tribal children depend for their daily food and medicinal needs on their surrounding environment. They should be taught about the soil and water conservation, forest conservation, value of diversity of flora and fauna in their immediate environment and general protection of their environment not just for better tomorrow but also for survival today. In poor rural families children both girls and boys begin their lives as livelihood

earners much earlier, by ages 14-18 and therefore must have opportunity for learning about livelihood skills through official and non-official channels. Mostly they are left out on the basis that they are still young, however reality is different. Therefore it makes better programme sense if children are involved in all aspects of development programme management in their localities i.e. right from planning stages to implementation to monitoring and evaluation in a meaningful, useful and ethical manner. Children also have the capacity to look at their development needs in a comprehensive manner with sufficient guidance and facilitation rather than looking at fragmented picture that is sectorally divided taking into consideration not just their physical environment but also the social and cultural factors. For instance a typical example of children determining their vision for their village is as follows:

Children participating in Bal Panchayats from 45 villages in Chittaurgarh and Bhilwara prepared these posters for the occasion. They depicted various issues related to Child Rights and developed a "Vision 2010" for their respective villages that were depicted in beautiful drawings and explanations.

By 2010 they would like to see the village as a place:

- Where they get love, nutrition, and human dignity
- There are good facilities for educational, nutritional and protection needs of the children
- Village elders give respect to their feelings







- There is no child labour in the village and every child should attend school
- Children's opinions are taken for development of the village
- Child marriages do not take place, drug abuse or any other form of bad habits are not encouraged
- There is an anganwadi (crèche), school, road and hand pump
- There is more greenery, cleanliness and less pollution
- With no discrimination between girls and boys
- Water and electricity is available as per the need
- Children's rights are protected
- There is no filth or standing water
- There is a hospital
- People are living in peace
- Places of worship for all religions are coexisting

- NGOs or other agencies continue to work for our development
- All modern amenities are available

CONCLUSION

Changes in the environment that may seem a slow change and normal, a slow emergency or a sudden disaster are known to affect children in many ways. They can have an impact on children's health, education, can increase child labour, and expose them to various forms of abuse when they migrate alone or with families. In Rajasthan during the recent drought period many families pulled out children from schools and asked them to work in a range of employments for additional incomes. Many young girls were pulled out of the schools to look after household chores and their siblings thereby freeing up adult female labour within families who could then engage in economic development activities. Poor income that results from exposure to environment disasters often leads to poor nutrition and health conditions for children. They are exposed to serious hazardous conditions as well when forced to take up employment for survival. In the drought situation many families are known to abandon children, as they feel unable to look after them. Children often turn to taking on work outside homes or within homes that can be hazardous itself or involve work in hazardous conditions. In addition when families migrate during environment disaster periods they often take children along but are unable to look after them in the new living and working spaces thus many a times exposing them to a varied degree of abuses which can include discrimination, sexual exploitation, and physical abuse.

Childhood years are also the years when children develop physically and cognitively. This is an age for learning for children. Through proper exposure and opportunities for learning children can be helped to form the right attitude towards their environment and resource base. Developing an understanding of need for conservation can help take the environment conservation work quite far. Generally the environment and development programmes tend to focus more on the needs and participation of women and men. Children too are key stakeholders here and future users of the resources. They are often left out of such discussions and are not taken seriously.

A lesson from work in participation of children on a range of issues is that they are also an important part of the community and their energies must be directed constructively not just because it will benefit the entire society but also because they have a right to participate in matters that concern them. Children have dreams of a better tomorrow. They have enthusiasm and energy to fulfil these dreams. Once an understanding develops of how environment protection can lead to a better tomorrow and they are helped to develop a clearer and constructive vision, it is possible that they can bring the much needed change in our lives, in the way we live and in the way we use resources from our environment.

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Community Planning for Sustenance in a Heritage Environment

ANSHU SHARMA AND MANU GUPTA

Planning has been around for long. We are all familiar with the colourful looking Master Plan documents and technical looking blueprints of our cities, that portray an image far off from the actual ground relaities. The common city-resident's faith in the present city planning system has taken a severe beating over the passing years and decades. Not only have plans failed to deliver, they have also been unmindful of the rich heritage of our cities. This paper describes some experiments with community planning as a viable approach, particularly in context of heritage settlements.

A FAILED MASTER PLAN APPROACH

Since the first Delhi Master Plan of 1962, which was also the first Master Plan for any city in the country, the town planning process has followed the standard routine of preparing comprehensive city development plans with twenty year perspectives. The responsibility of plan preparation rests with the town and country planning departments of the states, or with city development authorities. The process does include a component of public participation: it is mandatory for the authorities to announce the preparation of the draft plan, and invite objections from the public, through newspaper advertisements, public notices or beating of drums! However, this approach of public participation has failed to play any significant role in the plan preparation process. Urban growth continued in the shadow of unimplementable Master Plans, giving rise to increasing

The authors are founder members of SEEDS,an NGO based in Delhi that focuses on ideal habitat for communities. Both Anshu Sharma and Manu Gupta have a Masters in Urban Planning from School of Planning and Architecture, New Delhi trends of risks. These risks usually stem from local and micro level problems, giving a corollary that local knowledge and wisdom have the potential to provide solutions for them. It is on this basis that the Community Action Planning (CAP) methodology was taken up for testing through small interventions.

COMMUNITY ACTION PLANNING PROCESS

Action Planning features the following characteristics, many of them shared with Participatory Rapid Appraisal (PRA) techniques:

- Problem based and opportunity driven
- Based on achievable actions
- Participatory, encouraging rapport and partnerships
- Reliant on local knowledge and skills and traditional wisdom
- Non reliant on complete information
- · Small in scale, community based
- Incremental rather than comprehensive plans
- Starting points rather than end states
- Fast, not rushed
- Visible, tangible objectives

Conventional analytical planning has tended to follow a linear routine of survey-analyze-plan. Procedures typically begin with extensive data collection, followed by lengthy data analysis. Options emerge, which will undergo a thorough review involving the respective authorities before a plan is prepared. It is a lengthy process, culminating in inflexible plans that often run into difficulty during implementation, because they assume institutional and administrative resources that are rarely available. In contrast, action planning includes several phases. (Fig.1)

Participation in planning and governance has been an issue that has been in focus at national as well as international fora. The United Nations in its Habitat Agenda had a specific commitment, Commitment C, that related to the issue of community enablement and participation. India was a signatory country to the Commitment.

CITIZENSÍ PLANNING INITIATIVE FOR Sursagar, Bikaner

A community planning endeavour, taken up in the historic town of Bikaner in Rajasthan by SEEDS in partnership with the Friedrich Ebert Stiftung demonstrated that planning does not have to be a puely technical process, and that communities are very capable of planning the development of their cities.





The findings of the city level consultation program revealed that the main cause of concern among the community members is the degenerating condition of Sursagar, historically a fresh water pond that now has become a collection point for the city sewage and sullage.

The support from the community members as well as other organisations working in the city was immense. There is high degree of enthusiasm as well as ready participation among the people, which has motivated everyone to take on the task further.

The city consultation workshops were attended by a large number of people. People from almost all the fields and age group categories attended the last workshop, as the issue of discussion was something that was close to their hearts. At the end of the workshop it was decided that attempts would be made to take it on further. For which, support of the people and organisations would be needed.

CITIZENSÍ PLANNING INITIATIVE FOR Delwara

Delwara is a semi-urbanized village and is about 28 kilometres from Udaipur in the District of Rajsamand, Rajasthan. It is located on the foot of the famous Devigarh Fort, and has a distinguished history linked to the craftsmanship of the Fort as well as the various temples, tanks and other structures present in the settlement. Being situated on the national highway, it is well connected and the villagers have an easy access to all the amenities of a town like electricity, telephone etc.

Delwara falls on route to the famous Nathdwara Temple, which is just 20 kilometers from Delwara; and Eklingji Temple, which is just 5 kilometers from Delwara. It is also on the route for the tourists on way to Ajmer, one of the tourist destinations of Rajasthan. According to the census reports, the village has a population of around 4800. However, present estimates put it at not less than 6000, with 1200 families out of which 240 families are listed under Below Poverty Line (BPL).

The kingdom of Mewar was originally divided into 16 Rajwaras or Districts, with Delwara being one of them. The Jhala Rajputs ruled it. Around three centuries back, gifted sculptors belonging to the Yadav community from Brij first came to Delwara on the invitation of the King to construct the magnificent Devigarh Fort. This fort is now converted into a heritage hotel catering to foreign and upper end tourists. The village is also the house of four ancient Jain Temples. There are two main temples, which are built in marble and have splendid sculptures and carvings. In the ancient times, Delwara was known as Devkul Paton Nagri, which means the 'Town of Gods'. At one time the village had about 1000 temples out of which around 400 were Jain Temples. At that time, Delwara was a large town and spread from Gandharva Sagar Talav to Nagda. Today only 25% of the original town remains.

PRESENT STATUS

Delwara is one of the many Indian villages, which has with time got converted into a semi-urbanized town. The village is now at the brink of losing its individual identity of once being a historically prominent place. Along with this, the traditional livelihood options and age old professions are vanishing leading to increased unemployment for e.g. the Yadavs, who are gifted sculptors and once upon a time came to Delwara to construct the Devigarh Fort, have now either taken up masonry or are migrating to Gujarat to construct temples. The village also has high illiteracy rates and poor civic amenities. Due to scanty rainfall in the region, acres of land are lying untended. In such a situation, the opportunities provided by Delwara's location offer some respite. Many villagers commute to Udaipur or Nathdwara on a daily basis in search of odd jobs, while the more skilled and educated section of the village now prefers to stay in these towns itself for work and have not come back to Delwara. Many old havelis and houses can be seen locked, as one strolls in the village. Water scarcity is acute, given the prolonged drought conditions prevailing in the region, and its brunt is borne by all, specially the women who are responsible for water management within the household. Sanitary conditions are poor, and more concerning is the fact that this is taken for granted as a part of life by the local residents. Health and education facilities are present, but are inadequate for meeting the requirements, and poorly managed. The community is also not enlightened enough about when and how to access the services available to them. The settlement is dotted with rich architectural heritage resources in the form of temples and water bodies, but these lie in a state of neglect and decay. On the whole the village gives a strong sense of the glory and richness of its past, but is today a sad reflection of the ills of modern urban lifestyles having

invaded into it, yet not bringing the wellbeing promised by the urban mirage.

THE INITIATIVE SO FAR

SEVA Mandir is an NGO based at Udaipur, which is working for development of some five hundred odd villages under its area of operation. It is working to strengthen sustainable livelihoods of village communities, to build capacities to achieve well-being in terms of health, education and gender equal relations and to create village level autonomous institutions and supporting organic leadership. It has had a long association with Delwara, where it also has its zonal office. SEVA Mandir has three of its para-workers staying in the village and looking after natural resource management issues, women and health related aspects in ten near-by villages. Apart from this, SEVA Mandir is also connected with this village through its Women's Patchwork Group. Delwara has the largest cluster of these women doing patchwork, which is sold under the brand name of 'Sadhana'.

NFI and SEVA Mandir developed an interest in achieving over all development of the village through partnership with various stakeholders and an integrated development approach. NFI and its partner organization SEEDS carried out an assessment of the potential and feasibility of implementing a model programme in Delwara, targeted at fringe settlement development issues. The objective was to assess the degradation of the village on an urban fringe, and explore various possibilities of developing Delwara as a model settlement with good quality of life, that can be followed by other similar peri-urban settlements. Therefore, the prime focus is on improvement in quality of life of the residents.

VIABLE OPTIONS

The possible means to enhance the quality of lives of people is by strengthening their inherent capabilities to be able to earn more and live well. This would require widening the employment base as well as improve the existing occupations. For doing so, we need to focus on capacity building and improvement of basic infrastructure. Focus will be required in key areas as described below.

WATER AND SANITATION

The basic problem is lack of water. Presently all natural sources of water have been exhausted. The village pond, next to the national highway is completely dry.

Only two hand pumps out of thirty-six are operational, since the water table has gone as deep as 700 feet. At present, the village is suffering with choked drains, piles of garbage on its road, due to outdated drainage and sanitation facilities. There is an instant need to look into this issue. The Panchayat is taking an active interest, but so far has focused on short-term interventions like cleaning up of roads and drains after periodic intervals.

LIVELIHOODS

With time, many traditional occupations have become defunct, forcing the locals to work as labour or take up new skills. Thus it is felt that newer employment opportunities need to be developed for such people. The patchwork group holds tremendous promise. It needs to be supported with production and marketing management skills. The community being traditionally from a construction background, this dying skill can be revised by promotion of masonry skills and creation of masons guilds. Given the location on the regional pilgrim circuit, and presence of heritage sites within the settlement, even tourism could prove to be another good avenue to provide local and sustainable employment options to the residents.

HERITAGE

The village has four ancient Jain temples and the Kund (step-well), which are architecturally magnificent and historically prominent. These buildings are worth restoring. They are too precious to be getting wasted without any notice. This effort would also lead to an over all face lifting of the entire village. The village has a rich heritage and ancient temples to boast of. If Delwara is converted into a possible tourist destination, it would bring along with it generation of related livelihood options.

HEALTH AND EDUCATION

Though the village has the relevant infrastructure with respect to health and education, it is the quality of service that is lacking. The village has three schools and a Primary Health Centre (PHC) within the village itself. Still, the literacy rates are very low especially among the girls. While, regarding health, for any major illness, the villagers depend on public hospitals in the main Udaipur town. There is a need to improve the quality of the services provided locally.

COMMUNITY DEVELOPMENT PLAN

An overall development plan needs to be drawn up,



Fig.3. Aerial view of Delwara

illustrating the manifestations of the above issues in terms of physical planning. This physical plan will cover physical and social infrastructure and housing. However, it will be based on community capacities and will incrementally build upon its initial form as these capacities are developed.

DELWARA CITIZENÍS GROUP

A locally grounded institutionalization mechanism needs to be put in place to ensure sustainability of the initiative, and this can be best achieved through a citizen's group that may play the lead role in planning, implementing and monitoring the activities under the community development plan.

PLANNING: THE SCIENCE AND THE ART

The process, at various levels, uses PRA as its primary tool. PRA activities are mainly map based, wherein

people easily relate to major landmarks and identify problem issues in a spatial context. A number of such area and subject maps are prepared. Proposed solutions are also marked out on these maps.

Though the post-implementation stage has not been reached in the projects under discussion, it is felt that the same set of tools will also be useful tools for monitoring and evaluation of the projects.

Development Planning is not rocket science. This is a reality that we need to accept if development plans are to be made to work at ground level. Planning is an art that is inherent in individuals and communities. It does need to be supported by technical inputs and refinements to ensure practicality and larger interest, but basically works best at micro level, with communities in the driving seat, backed with their local knowledge and traditional wisdom.¶ Sustainable Solutions

Bamboo and Sustainable Living Rahimawad and Kotwa Villages

I.V. RAMANUJA RAO AND INDERPREET K. JAIJEE

Bamboo has often been termed as 'Poor man's timber', 'Friend of the people', 'Wonder plant', 'Green gold', 'The cradle to coffin timber' etc. The significance of bamboo world over is highlighted by the fact that over 2 billion people are associated with bamboo. The annual usage of bamboo world over is equal to US 2.7 billion dollars. Approximately, world trade in bamboo and bamboo products is over 14 billion dollars. Hence, there is a need for paradigm shift in perception. It is high time we stop associating bamboo with poor and realize its potential to act as a vehicle for economic development for the entire nation. Bamboo in India generates 432 million man days of employment. Some 25,000 bamboo based industries provide employment to over 20 million people.

BAMBOD FOR DEVELOPMENT

Bamboo is excellent for development as it has several advantages as a crop, as a raw material as well as a commodity.

As a crop it can be harvested annually and non-destructively. Bamboo establishes rapidly after planting and the investment required to establish a plantation is comparatively low. Bamboo continues to yield for many dozens of years and responds exceptionally well to proper management. Bamboos can be grown on peripheral or non-cropping land and can be intercropped. Growing bamboo builds on farmers inherent plant cultivation skills. Bamboo is regarded as an annual crop in land tenure terms.

As a raw material it is important because bamboo processing already occurs in many societies and a multitude of different products that can be

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made from bamboo. Bamboo lends itself to community based growing and processing. Many processing stages may be involved, depending on the product. Producers can add value to bamboo even with limited technical knowledge. Products may require high or low levels of skill to produce, or a combination of both. Investment and returns depend on scale and type of product. Bamboo processing is often highly suitable for women as it can often be processed at home and in spare time.

Semi-processed bamboo is as valuable a as commodity as raw bamboo Skilled inputs greatly increase the value of the commodity and bamboo products have both high value and low value markets.

However, the alarming fact is that one third of the world's 1500 bamboo species are on the brink of extinction. Loss of forests in Asia poses grave danger to wild bamboo and its dependent species. In India alone, in the past 50 years, half of our forests have disappeared and 10% of the 1,35,000 species of flora and fauna are threatened with extinction.

INITIATIVES BY CIBART

The Centre for Indian Bamboo Resource and Technology (CIBART) is a not-for profit networked organization incorporated under section 25 (non-profit organization) of the Companies Act, 1956, dedicated to the development of the bamboo sector in India. CIBART serves as a catalyst to the bamboo industry in India undertaking various collaborative livelihood development projects. CIBART brings together state and district level bamboo organizations and enterprises in a federating mode. It provides project development and implementation, technical consultancy and turnkey services on all aspects of bamboo sector development in collaboration with its partners.

Currently, CIBART has two community-owned organizations in the States of Tripura and Manipur in northeastern India, that are also Section 25 not for profit companies. Seven more organizations in Himachal Pradesh, Uttaranchal, Nagaland, Arunachal Pradesh, Orissa, Chattisgarh and Jharkhand are under incorporation in order to backstop bamboo development activities in other States. CIBART has recently set up 'Konkan Bamboo and Cane Development Centre' as well. Within each State, the local organizations set up by CIBART have extension linkages down to each village, backed up by field technical resource centres at the sub-district level. CIBART's main area of focus is to achieve livelihood development, ecological security and economic development through the sustainable use of Bamboo and Rattan. Its primary focus is on benefiting poor rural communities.

CIBART implements livelihood development or poverty alleviation projects with its state and district level organizations namely Tamenglong Bamboo and Cane Development Centre (TAMBAC), Tripura Bamboo and Cane Development Centre (TRIBAC), Uttaranchal Bamboo Development Centre (UBDC) in the states of Manipur, Tripura and Uttranchal respectively. These projects are funded by Union Ministry of Rural Development (MORD), Government of India, respective state governments and by International Network for Bamboo and Rattan (INBAR).

Such top down initiatives can only be effective if they are matched by simple but significant steps taken by the community. Hence, CIBART emphasizes on development through local self governance and good resource and supply chain management practices at the grass root level. It aims at development and protection of indigenous knowledge. It gives impetus to the poverty eradication programs and employment generation. We seek to improve the economic status of the rural poor by developing market led approaches that mainstream them into the large economic framework, and so address all products whether industrial, commodities, handicrafts/handmade products, resource as such. And to support them with a professional technical organization that is majority owned by the community and linked into the national and global technical information systems/institutions. Majority of the population working in harvesting bamboo are women and children, who live below the subsistence level. The aim to reach out to them and help raise their standard of living.

TAMBAC was set up by CIBART in 2003, to tap the rich bamboo and cane resources available locally and to generate livelihood based on this. Extensive jhum cultivation was being practiced in Tamenglong, 50,000-1,00,000 bamboo culms were being burnt to prepare the jhum fields. TRIBAC focused on weaning the farmers away from this destructive practice and capitalizing on the traditional skills of the local community with expert design inputs to meet the market demand. Village level organizers have been appointed in all target villages for effective linkage between TAMBAC and the community. TAMBAC has build up extensive linkages with the community organisations, youth groups, village development councils which have representation from church, women groups etc. Joint forest management (JFM) committees and self help groups (SHG) have been established by TAMBAC for maximum outreach and ensuring that the benefits reach the target group directly.

Similarly, TRIBAC is also a recent initiative by CIBART, but has a track record that speaks volumes. This project aims to reap benefits of the fact that 1.2 million tonnes of bamboo amounting to 8 % of the total bamboo harvested in India is from Tripura. TRIBAC has adopted a community based, market driven industrial approach. In a short span of 10 months 70 village community organizers have been recruited, 154 SHGs formed and 350-400 forest officials have been trained. TRIBAC is now actively exploring the possibilities of setting up aggarbatti manufacturing units and exporting it to other states. Another very innovative incentive taken up by TRIBAC is the construction of a parisal boat. This is



CIBART Approach

- · Community-focussed
- Evolutionary, rather than revolutionary
- Process, rather than project-oriented
- Businesslike, with an eye on the bottomline
- Development of backward and forward linkages from the rural resident to the global players
- Servicing the community at the doorstep
- Respecting traditional knowledge, skills and practices and building on these
- Setting up community venture capital funds
- Setting up design interface between international designers and rural artisans
- Bridging the digital divide by using technology to modernize traditional skills and for planning, monitoring and evaluation (GIS, Internet)
- Adopting industrial approaches
- Setting up daughter organizations to professionally manage bamboo-based activities from resource generation to production enterprises
- Networking state and district level bamboo organizations and enterprises in a federated mode
- Bamboo resource generation
- Infrastructure development
- Product development and design
- Bamboo construction
- Training (capacity building)
- Consultancy
- Setting up enterprises
- Marketing

an oval shaped bamboo boat and is very simple to construct. This has been successfully done and tried out by TRIBAC. This can be a landmark achievement in the lives of the rural fisher folk.

Bamboo is woven deeply into the life and history of man. It is the single most important forest produce used by the rural communities in the Asian Pacific region. Its innumerable virtues like fast growth, short rotation period, flexibility, versatility, labour intensive processing, low extraction cost, productivity, wood substitute, reclamations of wasteland etc make bamboo an indispensable mantra for social, ecological and economic progress.

CIBART stands not only for trade networking, sharing ideas, disseminating information but also to empower people who are directly affected to take up their cause and become active agents of sustainable and equitable development –'to think globally, act locally'.

SUCCESSFUL IMPLEMENTATION

This is an amazing story about how the miracle shoot – bamboo, transformed the lives of the villagers of the Rahimabad and Kotwa village and reversed the process of almost irreparable environmental degradation. Vast stretches of land lay wasted due to the rampant brick mining done since early sixties. Decades of misuse of the land had taken its toll and the land lay barren.

In 1996, a local NGO called Utthan launched an INBAR aided project to reclaim the degraded land and to alleviate the poverty stricken locals of the area. More than 4,000 hectares of land was severely degraded, out of this 106 hectares was covered under the project. The fast growing species of bamboo was chosen to swiftly cover the vast tracts of land. Bamboo can be grown on degraded land with a thin cover of top soil and can be ready for use in a short span of three to four years. Identification of the right species of bamboo was of vital importance. Bamboo seeds, seedlings and rhizomes were obtained from various sources. A nursery was set up and various macro propagation methods were introduced. Conventional methods like vegetative propagation and non conventional ones like tissue culture were effectively used for mass propagation that could be swiftly transferred from the lab to the land. The project included training, demonstration on the plantation methods and catalyzed the development of various successful agro forestry models.

Farmers in that area have been imparted proper training and have formed self help groups to carry forward the bamboo movement. To tap the tremendous production potential created by the bamboo resource in these villages, several cottage industries like pencils, matchsticks, *agarbatties* have been initiated. Besides this, bamboo has also substituted for fish feed. Bamboo grown around the ponds not only helps in reinforcing the boundary but its leaves fall in and the fungus that grows on them is rich food for the fish.

Even though the people were a little skeptic initially about the potential of bamboo to transform their lives, they finally participated in the project whole-heartedly and are reaping their dividends now. The lush green landscape of the site bears no resemblance to the acres of red land ravaged by brick kilns, with ugly moon like craters all over.

The people of Rahimabad and Kotwa village have come a long way now. A baseline survey after five years of the project revealed that the groundwater that had dipped to 40 meters rose to 33.7 meters, the land became productive and the micro climate improved. The socio economic condition of the people improved. The bamboo nurseries provided employment and wooed 70% of the migrant population back. There were over 1,800 people below the poverty line when the project had started but by the end of it, there was no one below the poverty line.¶

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Reviving the Johads of Alwar Water Conservation by the Community

JUHI SHAH

THE ACTION

Where is the water?

It is blazing 40 degrees on a harsh July afternoon. The thud of furious activity breaks the stony silence of the inhospitable Aravali hillside. A group of villagers from Village Dumoli are working at constructing a dam among dry hills.(Fig. 1) Women balance *tagari*-fulls of stone, cement and concrete on their heads, sure-footed, for the masons waiting to slap on the *masala* (mixture). Kesar, of the '*taalvriksh*', is one of them.

But where is the water? There is no habitation nearby either. The last one was Dumoli, some miles down the hillside. So, why would men, women and children scramble up every day to voluntarily labour and contribute money for a structure that is of no apparent benefit to their village?

Kesar smiles..."the bandh will green the hillside," she says simply.

Community takes the lead

It is the 15th of the month. About 50 men from 12 villages gather at Bhartrihari in Alwar district. The day swelters yet again — no sign of the monsoon promised 15 days ago. They spend three hours clearing the pilgrimage centre of plastic waste, a voluntary *shramdaan* (labour). Then it is time for a quick wash, community lunch and finally the real business - the monthly meeting of the Sariska Sanrakshan Mandal.(Fig.2)

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Fig. 1 Villagers contribute money and labour forbuilding of the bund

On the agenda today is the village of Dehlawas. Fierce-looking men look to the other members for guidance on effective protection of the village forest from the villagers. "There is no option. You have to impose penalty. And you have to ensure the fine gets paid even if you have to extract it from the doorstep of the offender," comes back Heeralal of Bakhtpura. Ram Singh looks unconvinced, which is not surprising. Dehlawas is fighting the birth pangs of its conservation and regeneration initiatives.

Though this was not always so. Dehlawas, which lies in the catchment area of the River Ruparel, had long given up on the local tradition of conserving and protecting forests. Agriculture, cutting of wood for fuel and fodder, stone quarrying for construction activities played their part in the increasing deforestation. Gradually all hills around this village in the Sariska buffer zone became bare.

Matters came to a head two years ago when it did not rain in Dehlawas even though it did in neighbouring Bakhtpura. As water sources dried up and fodder vanished, people began poaching upon Bakhtpura's resources. Tension reached a flashpoint with villagers opening fire upon each other. Realising the good sense of water and forest conservation, the village elders decided to bring back the centuries old traditions. On hand was Bakhtpura, which started its efforts a decade ago. But that is another story...

Bring back the Dev Bani (divine forest)

On the face of it, white bearded Heeralal Saini is hardly the sort of man one would expect to lead a group of men labelled *Gramin Utthan Evam Vikas Samiti* (Village Uplift and Development Committee). But an air of quiet authority, of having achieved something of lasting value draws the old and the young to him. This 60-something is spearheading the tree plantation drive one hot and dry July afternoon en-route to Bhartrihari — a major pilgrim destination, where Raja Bhartrihari is supposed to have rested during his travels, for Alwar and other surrounding districts of Rajasthan.

Pooling their own resources and with some financial help from donors, the group has also devised some long-lasting cement tree guards that it plans to re-use. Interestingly, none belong to the place. But all have come together to create a modern-day Dev Bani Bhatrihari around the temple. A sense of community in a place that is without a community...

A river flows through it

In all the riotous shouts of boys splashing about in the Tildeh Gomukh reservoir, Jagdish stands out quietly. There is an air of peace about this saffron clad youth resting on a patch of green nearby. He and three other friends have just walked 900 kilometres,



Fig. 2 Jagdish Gujjar addressing Sariska Sansthan Mandal



Alwar has a rich tradition of building '*johads*' (water harvesting structures, bunded reservoirs) — an ingenious and inexpensive, simple, traditional technology remarkable for recharging the groundwater of the entire area around. *Johads* are simple mud and rubble concave-shaped barriers built across a slope to arrest rainwater with high embankment on three sides with the fourth side left open for water to enter.

The height of the embankment is such that the capacity of the *johad* is more than the volume of run-off coming from the catchment based on a rough estimation of the maximum possible run-off that could come into it. Therefore, the height varies from one *johad* to another, depending on the site, water flow, and pressure, etc. To ease the water pressure, a masonry structure called *aphra* or *apra* is also made for the outlet of excess water. The water storage area varies from 2 hectares to a maximum of 100 hectares.

The water collected in a *johad* during the monsoon is directly used for irrigation, drinking, and other domestic purposes. The advantage of this structure is that apart from arresting

sometimes barefoot and often without food and water, to "fetch water for Brahmeshwar" from the other Gomukh in Gangotri.

Twenty-one days is the number of days it took these *kavadiye* (pilgrims) to perform this self-imposed task. "Why do you do it?" one asks him. "Tyag" (to internalise sacrifice), he says simply looking towards the Shiva shrine overhead. "The new pilgrims," muses Rajandra Singh, the man behind Tarun Bharat Sangh (TBS) that has catalysed this pilgrimage of water. "That Tildeh once again flows through the Gomukh is only the fruit of our *punya* (good deeds)," says Roop Narayan of Village Palpur in Rajgarh Tehsil

and storing rainwater, it improves moisture concentration at the sub-soil level in the field, particularly in the downstream areas, which recharges ground water and wells.

The distinctiveness of this structure is that it is based on simple and cheap technology with locally available resources, i.e., labour and material. All the estimations are based on the villagers' experience and intuition, with rough calculation rather than 'sophisticated' technology.

Seeing the benefits of these *johads* even during the toughest drought condition both quantitatively and qualitatively in the livelihood and the lives of the villagers, many more come forward to build these structures in their villages reviving the traditional method of harnessing the rainwater.

According to Rajendra Singh of Tarun Bharat Sangh, "*johads* are very good for Rajasthani culture apart from their scientific and technological value, because they reflect cultural wisdom handed down through centuries, the philosophy and the spirituality of water as well as management of water."

(administrative unit) of Alwar. Roop Narayan, who had migrated 10 years ago to sell *chaat* (Indian savouries) in New Delhi's Paharganj, came back some years ago. Today, he farms his land near Gomukh once again and spreads awareness about conservation of water, land and forests.

THE STRATEGY

Things were very different 20 years ago. Large-scale quarrying had left the Aravali hills bare and shorn of life-giving vegetation. Shift to agriculture and the disappearance of the old relationships between man and his natural environment had further denuded an



Fig. Participatory process for identifying location of johad. In а foreground: Kanhaiya the Lal, Secretary General of Tarun Bharat Sangh Ranjan (Courtesy: Samantaray)

area once rich in forests, water bodies and wildlife. Drought raised its deadly spectre with alarming frequency. The region that had once sustained the eco-system of the Aravali mountain ranges had become barren.

Women trudged long distances to fetch a small pot of water. Crops failed regularly. Barely three percent of the cultivable area was irrigated. Lack of vegetation led to soil degradation and the monsoon run-off washed away the topsoil. "I remember, there was not a single blade of grass and we often stumbled on the carcasses of cattle," recalls Singh. Life was difficult and hardship endless. Dwindling resources and shortsighted government policies had forced livelihood changes upon communities once living in harmony with their surroundings. Nearly 80 per cent of the male population in villages around the Sariska reserve had migrated to urban India in search of jobs and the remaining subsisted in extreme poverty with little healthcare and education.

Appropriately, the strategy for tackling these numerous odds came from the wisdom that comes from age, from traditional knowledge. "One day, Mangu Kaka of Gopalpura village told me, 'we do not want your literacy. We want water,'" says Singh, who did not know anything about water! Acting on Mangu Kaka's advice, Tarun Bharat Sangh became the local catalyst for building a *johad*. In 1985, this unique traditional water harvesting and management system (*see box*: A reservoir called *johad*) was still alive in the collective subconscious of the people, though they were alienated from their environment.

A johad is not only a physical structure made by

people through traditional knowledge and wisdom, but it is also a symbol of peace and community bonding. Recognising this, the Sangh has used the stratagem of linking with the community to fulfil its objectives. "The role of civil society organisations is to catalyse internalisation of a problem and action," says Singh.

The Sangh has contributed money for the construction of *johads*, but only after the villagers have stepped forward to ask for the help. The Tarun Bharat Sangh strategy is simple

- Approaching villagers: Going directly to villages allows the organisation to target women, who are not able to attend meetings elsewhere.
- Promoting interaction between villagers: TBS organises 'exposure trips' to enable the residents of a village to see for themselves the water and forest conservation efforts elsewhere. People from villages who have had success are also taken to neighbouring villages in *padyatras* (walks) to talk about it.
- Organising people into village assemblies: Supporters of new projects are organised into a *gram sabha* (village assembly), which holds regular and open meetings. Villagers are also encouraged to form a small committee for day-to-day supervision of the projects.
- Submitting written project records to villagers to promote transparency: The organisation stands by the villagers through good times and bad, earning their goodwill. It also holds public ceremonies to honour supporters of conservation projects as the tree planters of Bhartrihai were honoured a month later on August 16, 2004.

By the People, For the People

In the middle of the River Arvari at Hamirpur stands a brightly painted fish woman under a cement *chhatri* (canopy). For the villagers, she is the focal point of their worship of the waters.

Arvari is a small river in Alwar. The river had dried up into a monsoon drain for decades while the region was facing chronic drought. With the construction of a small *johad* in Bhaonta in 1987 began the process of rejuvenation of this river. In 1988, many more *johads* were built in several villages — Bhiriavas, Dumoli, Khadata, Khatala, Samatsar, Chosla, Lalpura. Today there are nearly 400 *johads* in the 504-sq km catchment area of the River Arvari raising the water table in the entire catchment area.

In 1996, the river came fully alive and became perennial. Once the river had been revived, fish were seen in its waters. Seeing this, a private contractor secured from the government the rights to fish at Hamirpur. The villagers saw red. Who owned the river? The government was intruding into community's domain, its right over the use of the water — a resource that had been developed by them.

A *jan sunwai* (public hearing) was organised by the Arvari banks on December 19, 1998. Hundreds of villagers and representatives of voluntary organisations attended this meeting along with environmentalists and officials from the government. It was decided to form a river parliament (*sansad*) to protect the rights of the people who had brought the river back to life. The Arvari Sansad, representing 72 villages, was formally constituted in Hamirpur on January 26, 1999 to manage the river and its waters judiciously.

The *Sansad* covers the full river basin of Arvari and is the supreme authority to make decisions regarding the river. The Sansad meets twice a year and has 142 members nominated by the respective gram sabhas — every 500 hectares of land or 500 people have one representative in the Sansad regardless of land use. It has framed 11 rules for the use of Arvari waters. The Sansad decisions are executed by the gram sabha and supervised by the Aravari Sanchalan Samiti (coordination committee) made up of 20-22 people, 4 from each geographical cluster. This sees to the day-to-day implementation of the decisions of the parliament.

"God willing, this Parliament will have its own building before long," says an intense Kailash, who owns land on the riverbank at Hamirpur. "What is important," says Rajendra Singh, is that "in the Arvari case, one can see community leadership in action in protecting a resource."

The temple at Hamirpur is representative of this determination.

Through this bonding with the communities, the Sangh is able to

- Tackle common livelihood concerns of water, forest and land degradation.
- Raise awareness of environmental issues the Dumoli dam, the Rada Dev Bani are cases in point. Perhaps one of the most illustrative cases is the public sanctuary created by the communities of Bhaonta-Kolyala, one that drew even Prince Charles to visit in November 2003.
- Create resource ownership of the people through participatory processes TBS helps construct a water harvesting structure only in economic partnership with the people; in most cases it contributes 25% in a 75:25 ratio. (Fig. 4) It also provides support in dialogue between the villagers and the administration.
- Engage with people through providing employment apart from all the above activities — Kanhaiya Lal of Village Bhaonta is the TBS General Secretary today.

In all these activities, workers of TBS function as facilitators. They leave the process to the traditional and collective wisdom of the people. But all this is possible only when every member of the village community has a feeling of ownership. This feeling of ownership is very important and is a product of contribution, participation, and sharing for the greater common good.

THE FALLOUT

Starting out with first *johad* in Gopalpura, which took three years to build, today village communities and Tarun Bharat Sangh have jointly revived and built 7,800 *johads* over 6,500 sq km in 18 districts of Rajasthan benefiting 1,000 villages and 700,000 people, according to Rajendra Singh.

Prosperity returned to the region — agriculture became productive, and, with availability of fodder, cattle rearing and dairy farming started again. Higher water levels also meant less expenditure on pumping up of water by diesel generators. Only 20 percent of the agricultural land was cultivated in 1985. Seventeen years on, it was 100 percent. Villages began to sell surplus grain in the market for the first time. Studies have shown that an investment of Rs 100 per capita on a *johad* raises the economic production in the village by as much as Rs 400 per annum.

As villagers mobilised themselves to improve their quality of life by contributing in building *johads*, this participation of the people prompted capacity building within the community optimising social cohesion and emotive bonding. Once people realised they were responsible not only for individual, but also collective action, they became more aware of their rights (*see box*:



Women trek miles for fodder rather than cut dev banis

By the people, for the people). They took an activist stance to fight a legal battle right up to the Supreme Court of India to stop indiscriminate mining on forestland.

An enlightened and active community also enforced self-discipline for the common good of the village. It strictly enforced its own rules to stop deforestation, hunting for wildlife and consumption of liquor. The development of community participation through the *gram sabha* gave everyone an opportunity to freely discuss, decide and implement a common decision taken for general benefit.

This infusion of energy caused by the construction of *johads* has encouraged villagers to go further looking for innovative methods of 'social change'. The greatest challenge before them now is to sustain those traditional values that first started this movement in the face of 'progress'-induced prosperity.

But hope lies in people like Kesar... Kesar of the beautiful smile and the rare *taalvriksh* that she protects with a ring of stones and worship.¶

The Story of Ralegansiddhi and Baburao Hazare

S.D. CHAVAN AND P. S. BHONSLE

THE VILLAGE

Ralegansiddhi, a village of 2700 population (982 hect. in area), is in Parner taluka in Ahmedanagar district of Maharashtra state and about 82 km. from Pune. It lies in hot and dry climate zone. On its east and north the village has a natural barrier of hills. Sloping topographically towards south-west nalah it has a water body flowing from the east to the west side of the settlement. Main road from Pune-Nagar state highway to Parner has Nilgiri plantations on either side. It clearly demarcates the old centrifugal settlement on east and new linear growth on west. Agricultural lands are spread all over increasing towards south taking benefit of the geo-scope. Residential zones are along roads in a concentric ring fashion in the old village and linear arrangement in newer areas. Public blades of amenities are located towards west of main village; every activity is sufficiently pulled inside towards major roads to avoid accidents. Schools are easily accessible to residents. Commercial and public buildings are very near to main road for catering to the society services and appropriate plantations enhance the ecology. Cremation ground is on the bank of *nalah* and does not pollute the environment. Industrial developments that could be detrimental to air, water and soil conditions are completely absent.

VILLAGE CONDITIONS IN 1974

In 1974, the village was declared under DPAP (Drought Prone Area Programme) as there was hardly any water for cultivating or for drinking. People were struggling to sustain life and outward migration started in search of livelihood. The per capita income in the village was reduced to 200/- Rupees per month and sixty percent of the farmer population was surviving on purchased grains. Production of Jawar was just five percent, milk production was about 200 litres per day with only 3 milkmen and 22 buffaloes in the village. No financing agencies were present. People were frustrated and a great number of inhabitants were addicted to liquor. Total economic growth had come to a standstill influencing standards of living, educational status, income generation and forced migration.

VILLAGE CONDITIONS TODAY

Now the village has undergone drastic change having 1500 acres land under cultivation due to implementation of water-shed management projects, Jawar production has increased by fifty percent, dairy business has flourished with a maximum yield of 2000 litres per day generating 13-14 lakh rupees income per month. There are 375 milk giving cattles, 3 dairies primarily with Yadavbaba Dugdhavyavasaya Sanstha which have more than 8 lakh Rupees as fixed deposit in banks, to give loans for purchasing cattle, fodder, construction of cattle sheds etc. Total per capita income has increased to 2000 Rupees per month and migration has completely stopped. Farmers are cultivating cash giving crops such as onion, of which the production has increased up to 25 trucks from the previous production of 3 trucks per season. In case of surplus grain production, farmers donate grains to bank. Grain bank serves the needy poor people. State bank of Maharashtra that started in 1982, gives a lot of financial help in public works. Various financial NGO's such as Mahila Mandal, Patasanstha, Vivekanand Krutadnyata Nidhi Yojana etc. further aid developmental programmes. Government has given various grounds from Agriculture (Gramurja) Scheme, Environmental Forest Department, Social Welfare Department, and IRDP for total development.

THE MAN BEHIND THE CHANGE

A villager, Shri Kisan Baburao Hazare (Anna), born on 15 June 1938, realized the position of the village at the age of 35 and started his social service after taking his voluntary retirement from army in 1975. He was the lone survivor in bomb blast in 1965 during Indo-Pak war and a follower of Mahatma Gandhi and Swami Vivekananda. He has his own philosophy, one village-one family. He laid down principles for village development such as :

Nashabandi
 Nasabandi
 Kurhadbandi
 Charaibandi
 Shramadan

No addiction Family Planning No cutting of trees No grazing on fertile land Contribution of labour or public participation

He faced many hurdles to gain confidence of the people, to raise the funds, to know schemes of government, to develop awareness amongst people. He had to struggle a lot for achieving his goal of a model village. He finally achieved his goal in a long span of 30 years with public participation of local, regional NGO's and government expertise. Today the total village is self-sustainable, and a role model for Maharashtra and other states too. Anna is awarded with "Padmabhushan" by the president of India and the village has received more than Rupees 18 lakhs as cash award.

HIS APPROACH

Babu Rao Hazare gained confidence of people by arranging frequent Gram Sabhas and donating his pension and provident fund for restoration of Yadav Baba Mandir . He used human resources at its maximum for public works, such as for construction activity, strengthening infrastructure, implementing various water shed development programmes, increasing environmental awareness and inculcating a rightful attitude. He brought the strength of people together by forming volunteer groups. He introduced project transparency, information to all, positive long-term approach and global thinking. He utilized local materials and technology and involved government into public works.

CULTURAL DEVELOPMENT

The villagers have adopted principles such as anti-dowry and anticaste. They conduct charity activities such as common marriages, free distribution of sweets, crackers, clothing and stationary to needy students. There is no liquor or tobacco shop in village. They collectively celebrate birth anniversaries of Mahatma Gandhi, Vivekananda and also Gramparivartan Divas, when needy families, family planned couples, old citizens and scholars are awarded. They celebrate Padmavati Utsav in the month of Chaitya. Old ritual of killing of the animals for offering to the goddess has completely stopped. Loans of poor people from backward cast are paid by contribution from all the villagers. Backward class people are giving first priority in festive celebrations setting a good example of communal harmony.

DEVELOPMENTAL PROGRAMMES

Anna started water-shed programme by taking help of villagers, government expertise and technical assistance. Work began by removing debris from old wells, making drinking water available and constructing water storage tanks. Later on, he created a bund for the running water from top to bottom of natural hills and across nalah allowing its percolation. He instigated construction of various types of dams such as Gabian Bandhare, Nala Bandhre, Gully plugs, Nala bunding, Underground Bandhare across hill slopes and nalah. He started plantations, changed cropping pattern for minimum use of water, drip irrigation, percolation tube wells etc. and made attempts for microlevel water percolation, rain water harvesting, domestic drain water disposal by seepage tanks thus increasing usage of water resources for cultivation. New techniques such as hydrofracture, blasting and well jackets were attempted. This was done with the help of villagers and Forest and Irrigation Department. Activities of plantations on the roadside and social forestry also stopped soil erosion.

Nal Yojana was done without any government aid with only with villagers' *Shramdana*. Villagers adopted their own rules and regulations under Nal Yojana such as proper disposal of domestic drain water into soak pits, payment of Rupees. 100/- per head per day from those who do not participate in Nal Yojana Shramadana. This resulted in its successful implementation. Rain water harvesting, solar panels, solar cookers, solar chulhas, gobar gas plants, wind mills were

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introduced to conserve non-convertible, non pollutant energies from natural resources. Camps for Yoga, cleanliness, family planning, immunization and blood donation are regularly held in the village. Earlier, villagers suffered from diseases such as jaundice, naru, scabies etc. due to water scarcity and poor hygiene. They had to go for health facilities to nearby talukas. Now the village has one primary health care centre, one veterinary hospital and five doctors.

A MODEL VILLAGE

Ralegansiddhi, after becoming an ideal village started giving consultancy to nearby villages and started a village training centre for watershed development. Various workshops and exhibitions are held, on site practical knowledge is disseminated with the help of experts. At present, they have adopted 75 towns from 10 districts of Maharashtra, which are under DPAP. Unemployed graduates from these towns are taken as volunteers and trained after selection. This has led to an environmental awakening and rewards like Vrikshamitra, Krishimitra etc. further promote such causes.

CONCLUSION

There should be transparent government policies and fast access to information. Strict law enforcement for penalizing corrupt people is essential. Decentralization of power to rural areas is the only solution for all round development of rural areas and to stop migration towards urban areas. Villages should be considered as potential islands for development rather than political territories. In preparation, implementation, evaluation or monitoring of any government policy/ programme/plans, maximum priority should be given to public or *gramsabha*. Maximum environmental programmes by government should be implemented in rural areas to increase awareness. In an agro-based country like India, watershed development projects in rural areas are the key for achieving sustainable development. There should be government involvement in public works planned by people of *gramsabha* not vice versa. Adequate proper infrastructure

services and community facilities are subsidiary necessities for proper physical growth of rural areas. Different NGOs should be encouraged for implementation, evaluation and monitoring projects involving public participation at every stage. Persons like Anna Hazare should be identified and fully supported by the society and government for speeding up the process of social transformation.¶

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community health,FRCH Pune. Avasthi, Ramesh. Ralegan Sidhi Hazare,Anna. Majhe Gaon Majhe Tirth (Hindi) Varghade, Sureshchandra, Ralegan Sidhi – Gram Vikasachi Paoolavat (Hindi)

Heritage Album - 1

Group of Monuments at Hampi – Phase -I

World Heritage Sites of India



The incredibly wonderful site of Hampi the capital of the great Hindu kingdom of Vijayanagar, having its own story of glory between the 14th and 16th Century AD today lies in ruins, whispering a thousand words through its silence, to be heard only by those sensitive souls who care to listen. Hampi has long been recognized as a **World Heritage Site** by UNESCO in 1986 under the criteria of 'Cultural Site' – one of the 24 natural and cultural World Heritage Sites of India.

Text and photograph: Ms. Suchandra Bardhan

An architect-landscape architect by profession, Suchandra Bardhan has cultivated a deep interest in still photography over the years and loves to tour historical sites of architectural importance with her lens. She is presently serving Dept. of Architecture, Jadavpur University as a lecturer.



Interestingly, it is close to the '*Kishkindhya*' and '*Hrishyamukha Parbat*' (mountains), which find mention in the great Hindu Epic Ramayana and considered sacred – the former as the holy birth place of *Sri Hanuman* (with a temple on its top) and the latter as the meeting ground of *Sri Rama* and *Sri Lakshmana* with *Sugriba*, the monkey king, whose help eventually resulted in freeing *Mata Sita* from the evil clutches of demon *Ravana*.

Unfortunately, however, Hampi has also been included in the list of **'World Heritage in Danger'** in 1999; the cause for concern being the construction of two suspension bridges close to the site, considered to be posing serious threat to its identity and integrity.

Location: State Karnataka, District: Bellary, Taluk:HospetArea: 26 Sq. km.Established: 1336 AD (by another opinion 1346 AD)

Important Monuments displaying splendid craftsmanship and building skill, comprising various temples and royal palaces amongst many others are:

- Virupaksha Temple (still in worship)
- Vitthala Temple Complex
- Krishna Temple
- Hazara Rama Temple (Hazara Ramaswami Temple)
- Pattabhirama Temple

Contd. on page 93

1. Courtyard of Vitthala Temple Complex housing the Stone Chariot, the stone wheels of which actually revolves.

2. The destroyed ceiling of the chamber in front of the Garbha-grha. The Gopurama over the Garbhagrha, however, exists. The 'Vitthala vigraha' was shifted to Maharashtra (by the then priest 'Purandara', where it is still worshipped) before the Muslim invasion and subsequent destruction.



- 3. View of the Vitthala Temple Complex courtyard with the Musical Pillars in the foreground.
- 4. A mridanga player as a Musical Pillar on the left-hand side foreground while tourists try to catch the notes emitting from another.



- Chandrasekhara Temple
- Ganagitti Jain Temple
- Mahanabami Dibba
- King's Balance
- Queens Bath
- Lotus Mahal
- Elephant Stables
- Dhananayaka,s Enclosure

Besides the above, magnificent monolithic giant statues of Sri Ganesha, Narasimha and Shivalinga deserve mention for their massiveness and detailing.

Continuous excavation at Hampi is in the process of unearthing yet unknown archaeological / architectural remains from the ravages of time. And no matter how well one tries, Hampi would continue to remain well beyond description.



- 5. Interior of the Vitthala Temple shrine showing the series of Musical pillars.
- 6. Beautifully sculpted forms subtle and intricate detailing, rich and ornate carvings: surely a feast to both eyes and ears must have been at those times!





7 & 8 Corner detail: soffit of eaves and ceiling at inward and outward corners respectively.

Heritage Album - 2

Monuments of Gurgaon District

INTACH Gurgaon Chapter



Few realize that beyond the modern facade of the millennium city of Gurgaon, are significant heritage monuments that are the only remnants of its historical past. The built heritage of Gurgaon exists more as individual structures as opposed to the clusters found in the walled city areas of medieval settlements. Hence it becomes all the more important to conserve and restore these scattered monuments, as they are the only existing symbols of Gurgaon's heritage. The region has a number of monuments, which are of significant heritage value and INTACH Gurgaon Chapter has completed a

comprehensive listing of these monuments.

The Tomb complex at Taoru, a small town in the Gurgaon district has a cluster of seven tombs of varying size and style.





- 1. A tomb of post Lodhi period based on an octagonal plan, Taoru
- 2. A Tomb showing resemblance to the Lodhi tombs with a square plan, Taoru
- 3. A smaller tomb with small octagonal turrets at the corners on the roof, Taoru



These tombs belong to the Tughlaq (1320-1412 A.D.) and Lodhi (1451-1526 A.D.) period. Two of the tombs seem to belong to an even later period showing post Lodhi and early Mughal influences. These tombs are possibly of the earlier Balluch chieftains who had a hold over Taoru. At present, they are in a state of neglect as there is a lack of awareness about their historical importance amongst the locals.

4. Largest tomb in the complex with elaborate patterns and *chatri* like structures showing a late Lodhi influence.(1525-1545 A.D.)

5. Another Tomb with Lodhi influence(1450-1526 A.D.). The walls of this tomb remained unplastered.

The primary building materials of these structures are stone and lime. The walls are lime plastered with *jali* openings and recessed surface articulations. In some parts the stone *chajjas* are missing or broken. There are also references of colored finishes on the external surfaces of the tombs.



6. Tomb showing Lodhi influence. The ceiling of this tomb is badly affected by inhabitation of bats.



Named after the Mughal ruler Farrukh Siyar, the octagonal town of Farrukh Nagar was founded by a Baluch chief Faujdar Khan appointed by the Mughal Emperor. Faujdar Khan assumed the title of became Nawab in 1738 A.D.

The estate was confiscated in 1858 because the Nawabs had participated in the 1857 uprising. The town's turbulent history wreaked havoc upon most of its historic buildings including the Sheesh Mahal, Delhi Gate and the Jama Masjid. Jami Masjid and a large octagonal Baoli .



- Sheesh Mahal built in 1733 A.D. in the post Mughal style typifies the monuments and many buildings that align the main bazaar of the town.
 The Ali Gosh Khan ki Baoli was used as a water tank catering to the Sheesh Mahal and was connected to it through underground passages. The octagonal shaped well has features typically associated with *baolis* with stone staircases that lead down to the central pit.
- 10. One feature of the chattri that makes it of historical importance is the colourful chitrakala depicting the life of Lord Krishna on the ceiling.



Unparalleled Architecture Beauty of Havelis

Of Nobles and Courtiers

Beyond the forts and palaces, innumerable havelis weave the urban fabric of the medieval towns in Rajasthan. These havelis of the nobles and courtiers are unparalleled in architectural beauty and provide an interesting insight into the domestic architecture of Rajasthan.

The book draws on information collected from regional texts, fictions and folklore depicting social life, extensive fieldwork including a survey of more than 150 havelis in different towns of Rajasthan and interviews with several haveli residents. It covers major cities of Rajasthan such as Jaipur, Jodhpur, Jaisalmer and Udahipur as well as a number of smaller towns and thikanas of earlier times.

This book presents a first hand, detailed and documented version of the traditional 'Haveli form' of Rajasthan for the exploring tourist who wants to look beyond the obvious destinations and for the architects, art historians and conservationists looking at vernacular architecture in search for regional roots.

The book is authored by Shikha Jain who is involved in architectural research and teaching. The book is based on her PhD work at De Montfort University, Leicester, UK. The research work was also awarded by the Indian Institute of Architects in 2003.

For details please contact Shubhi Publications Office Shop no.15, AKD Tower, Opp. UTI Bank, Sector - 14, Gurgaon - 122 001 (Hr.) Phone - (0124) 6223529 Mobile - 9811065451

Book Review



Human Well-being and the Natural Environment Author: Partha Dasgupta, New Delhi, Oxford University Press, 2001, 305p., Rs. 595, ISBN – 019 566 059-5

> he natural environment does not find sufficient representation in discussions on economic development in less developed countries. We do not know the extent of damage caused to the environment resources by us because we can not quantify it. Is it possible to know the amount of money the society or the country loses if a group of poachers cut down a substantial number of trees in the forest? The need therefore is to establish proper linkages amongst indices like biodiversity, resource scarcity, environment-related services and their economic implications in a quantitative and tangible sense.

> The author, Partha Dasgupta is a Professor of Economics at the University of Cambridge. He has been the President of the Royal Economic Society and the European Economic Association, and member of Royal Swedish Academy of Sciences and the US National Academy of Sciences. The book under review is a collection of essays taken from his doctoral dissertation (1968), and the latest one being only an year before the publication of this book. The whole

exercise boils down to valuing objects and evaluating policies — incorporating the natural environment into economic reasoning in developing quality of life measures.

In author's own words: "I found it puzzling too that, in turn, official environmental and resource economics have made no contact with poverty in poor countries". The gross national product (GNP) index is not an adequate representation of social well-being. One ought not be content to study measures of current well-being, i.e. life expectancy, literacy, infant survival or public expenditure, as given in the Human Development Report of UNDP. Ecologists are trained to study slow and incremental processes like global warming, sea level rise, melting of glaciers, population explosion, etc., as "present is the past's future...and the future has an unnerving habit of becoming the present". So, an effective response, according to the author, would be to work within a framework of valuing and evaluating that combines present and future concerns.

In the first chapter, discussing the notion of wellbeing, Prof. Dasgupta includes human rights in describing quality of life indices. Part II offers quantitative estimates in poor countries, including not only health, education and material well-being, but also indices of political and civil liberties — he refutes the notion that there is a trade-off between civil liberties and economic performance in developing countries.

While introducing the concept of time and generation in Part III, the another brings in the issues of natural environment and *sustainable development*. The biodiversity has an important role in creating and preserving substitutional possibilities in economic activities. This is achieved by measuring the social worth of goods and services that are provided by the nature, and almost taken for granted by us. The author provides practical methods for estimating accounting prices which are dependent on the structure of property rights and institutional rules governing the allocation of resources. There may be a number of property rights co-existing in developing countries.

The productive base of a nation includes not only the economy's stocks of manufactured or human capital (or natural capital), but also institutional/cultural arrangements. There are social discount rates, exemplified in positive recorded investments but negative genuine investment, because environmental resources are typically underpriced, or even regarded as free. As a result, investment projects judged to be productive can in fact be unproductive, owing to rapacious use of natural resources. Part IV highlights limitations in evaluating investment projects. The correct method would be reduce the consumption arising from investments from the increase in wealth they help to create. These are the rules of social cost-benefit analysis. The last section offers a theory to value state of affairs and evaluate policies.

The subject covered in this work is a complex one, going beyond classical economics. It pervades a number of disciplines — economics, sociology, ecology, policy research and so on — extending beyond the academic realm. The effort of Prof. Dasgupta is highly commendable in the context of formulating policies in countries like India, where environment awareness is gaining ground.

Society for Indian Ocean Studies (**Dr. Kishore Kumar**) 1 Aruna Asaf Ali Marg Joint Secretary & Joint Editor New Delhi – 110 067

Events & Conferences

National Workshop on Architecture for the Challenged

Date: September 22-23, 2004 Approaching towards Normalization, Integration and Barrier-free Environment. Organised by Department of Architecture, Birla Institute of Technology, Mesra, Ranchi, Jharkahnd in collaboration with NIOH, Kolkata www.bitmesra.ac.in. For Details & queries, Please contact:: Prof. Rachna Khare, rch_khare@sancharnet.in, Coordinator, Tel: 0651-2275093(R)

International Festival and Forum

Date: August 27 - September 03, 2004 Public Service Broadcasting" New Delhi, INDIA Organized by Public Service Broadcasting Trust (PSBT) of India & UNESCO

International Agro Environ 2004 Symposium

Date: October 20-24, 2004 "Role of Multipurpose Agriculture in Sustainable Global Environment" Udine University, ITALY For details email international coordinator: ssmahmoodpk@yahoo.com

Caricostas 2005 - 2nd International Conference on Integrated Coastal Zone Management

Date: May 11-13, 2005 20 March 2005 is the deadline for submitting abstracts to Caricostas 2005, the 2nd International Conference on Integrated Coastal Zone Management, to be held at Santiago de Cuba city, Cuba. Topics include: Community work; Environmental health; Integrated Coastal Zone Management; Coastal zone vulnerability; Biodiversity and ecological processes; Impact of technology in coastal zones; Sustainable development of the coastal zones; Environmental education; Interdisciplinary teaching and research; and Gender issues related to ICZM. For information, email Dr. Pedro Beaton Soler or Dr. Liliana Gomez Luna

5th International Conference on Ecosystems and Sustainable Development

Date: May 3-5, 2005 The 5th International Conference on Ecosystems and Sustainable Development is to be held at the Parador Hotel Atlantico in Cadiz, Spain. The meetings provide a forum for the presentation and discussion of recent work on aspects of ecosystems and sustainable development, including physical aspects and modelling. The aim of the Conference is to encourage and facilitate the interdisciplinary communication between scientists, engineers, economists and professionals working in ecological systems and sustainable development. Emphasis will be given to those areas that will most benefit from the application of scientific methods for sustainable development, including the conservation of natural systems around the world.

Big & Green: Toward Sustainable Architecture in the 21st Century

Date: September 12, 2004 Sustainable Architecture in the 21st Century builds on growing recognition of the relationship between architecture and the environment. Forty recent, cuttingedge projects from around the world illustrate ways in which environmentally responsible design techniques and technologies can yield a more vibrant architecture, while decreasing our reliance on fossil fuels, improving air quality indoors and out, conserving water, and reducing global warming. Big & Green features work by such internationally known architects as Shigeru Ban and Norman Foster. For more details Chicago Architecture Foundation, 224 South Michigan Ave., Chicago, IL, USA

Five week workshops at Arcosanti

Date: November 07, 2004 5 week workshops at Arcosanti it self starting march 7th, providing hands on experience in construction, planning, graphic design, agriculture, ceramics, bronze casting, landscaping etc. For more details contact Arcosanti, HC 74, Mayer, AZ, USA

Sixth International Congress on Bengal Art

Date: February 8–11, 2005 The International Centre for Study of Bengal Art (ICSBA) is organising the Sixth International Congress on Bengal Art to be held at Ranchi, Jharkhand, India. The Congress is being jointly organised by the Birla Institute of Technology (Deemed University), Ranchi, and the ICSBA. If you are interested to participate in the Congress you are requested to communicate your acceptance and the title FOR SENSITIVE, CONCERNED, AND THINKING PEOPLE

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