Kathmandu Valley Urban Capital Region and Historical Urbanism
Historical Environment Management : Lessons from History[1]

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[Outline: Introduction - Historic Kathmandu – Urban Culture – Lessons in Ecology and Social Agreements - Festivals and Ritual Mediation - Valley Towns Today - Trends towards Megalopolis – Environmental envelope and Segmented Administration - Two capsules of environmental concerns – air, water and land pollution - open space and culture – Historic environment and lessons from history - Exploring new avenues of Historic Urban Landscape Management – cultural transformation – need of innovation and process development – Is regeneration a viable approach? – Working towards developing new vistas of knowledge – Some points of departure – Conclusion]

City and sustainability: transcending boundaries:

As compared to Nature and natural changes, which took millions of years to come to the present 'stable' state, man made systems are new and the build culture has been around for only ten thousand years. Urban ecology is so much divorced from natural ecology that to expect a similar balancing act within a short time would be unreasonable. On top of that it is not just imbalances within the urban system, but also imbalances in the overall global ecology, precipitated not just by the city system but by the nature of larger human acts, that the quests of sustainable development of cities has to address. Sustainable development perspective rolls up ethics of man and ecology of nature together. 'Sustainable development' and its objectives can only be addressed through deep changes in concepts of ethics of present day man's action vis a vis nature and time. Distancing from nature is sort of contained within the definition of urban areas. How can the city handle something that takes the city out to nature, as it were? How much of urban ecology and man-nature linkage functions of social relationships? Can the current society characterized by loss of a feeling of community come together to act concertedly in a global scale? Can we expect urban culture amenable to sustainable development to form within a short span of time? These questions have no ready answers. But quests have to be furthered and answers sought at least in the areas of our concern and expertise, may I add, with due apologies to Doxiades, if we are to save 'Megalopolises' from turning into 'Necropolises' in future. This paper contains itself to comparatively small urban areas and their immediate regional ecology and not the large Mega cities as such in the belief that experience and approaches of parallel situations in smaller communities would help in developing approaches to larger communities.

The unsustainability of current urban development primarily has been seen as a result of excessive economic exploitation of natural resources for 'development'. In recent city

building cultures, the undesirable impacts of industrial development and its immediate follower, the commercial economy, on the physical environment of the city, had been realized for more than a century, ecological concerns on building and operating cities have only been highlighted in the years following WCED, 1987; UNCED, 1992 and its Agenda 21 and got focussed in the Istanbul Habitat Conference. Sustainable development objectives for contemporary cities is aimed at avoiding two negative situations characterizing our age: unsustainable pace of economic exploitation of natural resources, mainly fueled by urbanized consumer societies and deteriorating physical environment, mainly precipitated within the large city environment. Primary resources are generally located outside the administrative boundaries of the city. The city has always been a concentrative system that draws inputs from a wide hinterland, the extent of which is a function of technology of preservation, transport and communication, and concentrates outputs within. A portion of this output is waste and creates, through its diffusion and disposal, problems in the physical environment. Environmental fallouts, as exemplified by those related to air, water and disposal of waste, also transcend the traditional boundaries of authority and responsibility of a city. Thus, application of sustainability issues in managing cities demand, in great part, ability to reach and enable actions outside of 'official administrative boundaries' by the city. In modern times, with great advances in transportation and communication technology, the outside has assumed a global extent. Sustainable development for cities thus has to aim for several levels of safety and equity such as across time (or present and future generations), across space (or city, hinterland and globe) and across citizen groups (or social strata).

For the last few centuries, both man and city systems have taken nature for granted and developed out of it but remained aloof in caring for it, but it has not been always so. Man has been exploiting natural resources in comparative excess in the hinterland since as long as settlement conglomeration started developing. A close look at historical urbanization will show that 'ecological imbalances' resulted even then and a few societies were able to evolve a system to deal with it. One such society is that which led to the urban development in Kathmandu valley, which was able to sustain itself over a period lasting for more than a millenium. Analytical review of urban development in the valley does show that 'small scale' parallel problems were faced here in the past and successful approaches developed to deal with them. It would seem that the major reason of its sustained urbanism was development and application of socio-cultural practices that were based on a perception that a delicate continuum existed between nature and town and that this needed to be continuously nurtured across time for common good.

Culture: Sustaining Nature, Economic Pursuits and Social Relationships Together

Culture of the traditional urban society of Kathmandu valley is a summary applied knowledge that reflects its composite response to nature, economy and social relationships. Recent urban societies, possibly because of over concentration on economic pursuits, have reduced positive nurturing of nature and social relationships bringing about sustainability issues in focus. While we can also see that balanced cultural processes and practices were designed, practiced and developed in the past to support sustainability, a culture able to put the three together in present day context is only just

being sought through international ethical norms and standards (UN). City managers have been working to provide for 'human needs' of the *city dwellers* and application of sustainability perspective requires the city management to extend out to people in the hinterland, as well as to delimit exploitation of resources, so as not to compromise ecological balance and the needs of the future generation both within and outside the city. Today, human needs are generally defined through social, economic and environmental objectives. Of these needs, environmental concerns are often limited to aspects of physical environment such as those related to quality of air, water, land and sound. While providing for a good physical environment is important, it should be equally, if not more, meaningful and worthwhile to work towards providing a good emotional environment to live in a city. While objectives of social neighborhood and social peace are found addressed in literature pertaining to sustainable cities, objectives on culture of people is not clearly spelled. Culture forms an important constituent of the emotional environment of a city and demands activities that go beyond applying the concepts of social neighborhoods. This is particularly important in managing cities housing societies of long urban standing and strong urban culture. Such a case prevails in Kathmandu valley towns and thus the importance of working ways of properly managing to sustain cultural environment assumes a two-fold significance: it can be a tool towards sustainable development and also provide an emotionally satisfactory environment.

Kathmandu Urban Culture – Lessons in Ecology and Social Agreements:

Dispersed urban settlements of small sizes, rather than large towns characterized the ancient urbanization in Kathmandu Valley and it was only following the Malla rule, which started from about twelfth century that larger towns were developed. What we see in Kathmandu today, the marvelous temples, chaityas, palace squares, monasteries and the towns they perfected into art forms for living, are mostly handed down from this period of history, which politically came to an end by middle of the eighteenth century. However the urban culture continued on its own strengths. The cultural degeneration process, which started rolling about middle of the nineteenth century, gained such speed in the last fifty years that these traditions have earned the dubious distinction of being called cultural heritage as different from a living culture. Some of us prefer to call it a living heritage.

Written historical evidence of urban settlements start appearing from the middle of fifth century AD, about four hundred years after its takeover by the Lichchhavi ruling house. The town forms of the Lichchhavis, as they migrated to the valley from the southern plains, subscribed to town development and planning prescriptions as outlined in Hindu/Buddhist doctrines and preferred riverside locations. One of the first towns of their making, Deupatan, was located as may be expected on the basis of planning doctrines, on the banks of river Bagmati, one of the rivers in the valley and followed the doctrinal *Karmuka* layout. However most other ancient towns of Kathmandu valley, including those developed during the Malla period, were not located on banks of rivers. The Lichchhavi inscriptions themselves mention many existing settlements, called *pringga*, which were located on ridges and hill tops. This different tradition belonged to the aboriginal settlers and rulers of the valley called the Kirats, who reigned for thirty-two

generations as told in chronicles. Their conceptual objective of siting a *pringga* on fallow and unirrigated higher lands, called *tar*, was apparently to maximize land suited for agricultural purposes. This very conscious ecology sensitive tradition emphasized the preservation and use of *dole* or irrigable slopes and *tala,* the fertile plain lands along the river banks, for agricultural purposes. Indeed the linkage of the resource base, the surrounding agricultural land, to the town was stated explicitly by the structure of the settlement and perpetuated through religo-cultural behavioral pattern popularized by rituals and festivals, that enabled the regulatory controls to be administered through several generations in future. The Lichchhavis, with their large number of anthropomorphic gods, developed temple centric towns patterned after Hindu doctrines and were bounded by several other temples. During this time, more festivals based on Hindu/Buddhist faiths were added with similar objectives. Both of the Kirata and Lichchhavi concepts and the strictures were elaborated and extended by the Malla society leading to the medieval town core structure that survives to this day in Kathmandu valley. Unfortunately today, festivals are seen more as archaic socio-religious drama of feasting and entertainment and neither the professionals nor the managers have given thought to their larger ecological objectives and strength in conditioning appropriate social behavior across time and space.

Kirat Towns : Matters beyond Location

The small Kirata settlement was centered around a built space protector god, which came to be known as *Dyochhen* in Malla period terminology. The *Dyochhen,* literally the house of god, had a counterpart natural spot outside the town called *Pith*, literally the natural abode of the godly spirit. The out of town symbol was of a nature protector. Several religo-cultural (rituals) and socio-cultural (festivals) practices were developed to constantly and continuously remind the city dwellers of the limits of the protection of town was dependant on the protection of Nature and its place specific micro-ecology. The *pith* was always located in a ecologically important site, such a clump of trees, rock spur, spring source of water, hillock and the like found within the agricultural hinterland of individual settlements. A dispersal of such a group of similarly conceived settlements in the valley region, each with their rituals and festivals aimed at sustaining local micro-ecology, ensured that urban expansion did not tamper with nature.

With the Lichchhavi development, settlements started growing with rising commerce and *pringgas* may have expanded out to the farms[2], a problem that seems to have taken several centuries for a solution under a wider religo-cultural framework for assuring adherence to town boundaries were developed. Another problems they faced was that the simple spring sources, ponds and the likes protected as *pith* outside the settlement, were not able to meet water supply needs of expanding towns. Water was brought through canals that stretched from the foothills of the valley to towns to feed ponds, which in turn recharged supply to recessed pit conduits, a technology that is working to this day in Kathmandu. The town had already entered the phase when its activities sphere extended

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[2] A case in point is that of Andipringga (Hadigaon) which apparently extended down to the river as the Vrijjis settled. As the Lichchhavis made it into their capital and named it Maneswora, the boundaries appear to have been reestablished to original limits.

beyond local micro-ecology to reach spots that were of macro-ecological significance to the valley and other settlements. Festivals[3] and rituals were framed to guide public behavior for protection of far away sources and water sheds from as early as the written history starts showing. These were in addition to legal strictures[4], a management tool we tend to rely solely on these days. To ensure ecological behavior, instead of legal mediation relying on the power of the state, managers in ancient times seem to used ritual mediation, which was framed on prevailing religious faiths and thus relied on ethics, individual faithfulness and emotionally guided *inner discipline*.

Larger Town and Wider Ritual Mediation: Malla towns

Although the basic structure of a *pringga* and the ecological behavioral pattern it conditioned in the then and future societies encapsulated into rituals and festivals were inherited by the Mallas, the capital towns became much larger and even the dispersed out laying towns were growing also. The effectiveness of a single *dyochhen* or in-town protector in commanding faithful behavior got challenged with increasing mix and complexity of religious faiths among the people reduced efficacy of ritual mediation through a single religious faith. In the same way, with increasing population living in one built up area, the influence area and the agricultural hinterland expanded beyond the ability of one nature protector or *pith*. Increasing densities and large conglomerate demanded fresher ways of retaining social relationships and feeling of community. Larger water supply and irrigation systems were put in place that relied on more than one source and had to be shared with other settlements. At the same time, 'micro-heat and waste sub-structure' seem to have assumed problematic levels and natural sub-surface water systems around towns got affected.

The tendency of towns to expand outward damaging immediate economic and ecological resources had to be decidedly curbed. This was tackled through use of a revised and reinforced version of the old Kirata system. A major social reclassification of population on the basis of professions, called *jaat*[5], was done and the city was zoned by *jaat*, which created pockets of harmony linked to family clan and profession at the same time. Each of the pockets centered around a tutelary image such as Ganesha, who was common to all major religions. The central *pith* of the *pringga* was replaced by the palace and the royal tutelary. This was possibly a response to the fact that the central areas of the town were occupied by the nobles subscribing to the *jaat* of worship and rituals, administration and political leadership, who would be better guided by ruling power. To deal with the large extent of the town, several *dyochhens*, typically eight, now occupied spaces in-between the town center and the boundary. The corresponding *piths* moved a little inwards from

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[3] The festival of Satyanarayana of Hadigaon coming down from Lichchhavi times is one such ritual/festival that links the town to spaces in the valley important for supply of water and ensures through participatory strictures proper social behavior to protect and to keep clean the sources, reservoirs and recharging ponds.

[4] Royal orders restricting felling and burning of trees, carrying charcoal as well as cutting of branches for animal fodder in watershed areas are seen in inscriptions from seventh century Kathmandu.

[5] Jaat literally means born into it as professions tended to be hereditary at that time. Jaat was a concept totally delinked from religion. The Kirat society was divided into eighteen professions only and the Mallas extended it to eighty four specializations.

the surrounding fields to define the boundary of the town itself[6]. Religious rituals, festivals and taboos were charted and popularized to ensure that the *piths* remained the perimeter of the town. Subsidiary temples and potent sites were dispersed in its hinterland at places of micro-ecological importance. Festivities were extended and annual socio-cultural events were put in the calendar to link these spatially and emotionally to the town and its specific zones. From the days denser settlements developed in the valley, this process of formation of 'micro-heat & waste sub-structure' natural to the process of dense urban areas must have been apparent to Kathmandu valley planners and dwellers. More mundane systems to collect and age night soil from the city and dispose to surrounding farms as manure were developed[7]. Interior courtyards formed by groups of houses were used as *Sagah* or a composting place for vegetable waste matter. Periodic cleaning of *Sagahs* and other city elements that tended to become polluted were also given religious imagery[8] that demanded unfailing cleaning cycles. By locating festivities in agriculturally lean seasons, the society mobilized and capitalized voluntary labor in the guise of performing rituals for better life in next birth, probably an allusion to future generations. Through sensible design and local material usage, ensured through infusion of 'religious and physical threats' incorporated in the working documents of the design and construction professionals, they actually took advantage of the warmer micro-climate of the town. The location of dense town on fallow ridges reduced the town to a no-greenery-inside situation. Apparently this was not acceptable once the town grew in size and later towns consciously provided for lung space through several *khyo*, large chunks of open green space located inside the perimeter of the town. Town level festivities congregated here in annual cycles, again ensuring that town expansion do not eat up those.

All these go to show that socio-cultural codes and ethics of behavior favorable to the health of the urban community and the ecological character of its supporting hinterland, were consciously charted and scrupulously followed. The medium of implementation were socio-cultural practices able to bring the town or its sectors to act together ethically. Often one wrongly believes that traditional societies were guided by universally agreed and unwritten moral codes – these cases certainly do not suggest so. The knowledge and codes were quite consciously built in cultural practices, which did not develop naturally over long period of experimental phase but were developed, timed and implemented by those who were responsible for properly directing development. Such cultural practices, ensconced in indigenous knowledge transmission mode, were able to forestall negative individual action likely to damage the community life, the city or its ecological dependencies. In large part it is these practices that led to sustainable cities in the micro-ecological setting of Kathmandu valley.

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[6] The first capital of the Mallas, Bhaktapur, combined three pringgas into one city and expanded its ritual structure by using the dyochhens and piths for eight mother goddesses. Here piths were used for perimeter definition. In the case of Patan, however, the piths are used more as nature protectors and remained out in the field.

[7] Some such practice is still successfully followed in Milwakee. In 1991 Shanghai's Bureau of Environmental Sanitation collected as much as ninety percent of human waste and converted to manure. For further current relevance see *Jac Smit's Urban Agriculture: Food, Jobs and Sustainable Cities (UNDP)*

[8] The religo-cultural imagery of *lukumahadyo* can be taken as a neat example as this form of Siva was comfortable under garbage but required light air and sun on ritual occasions.

Valley Towns Today:

The breakdown of the above discussed culturally mediated mode of sustainable development pattern started about middle of nineteenth century as alien cultural practices pervaded the ruling class and got overwhelmed by further cultural inroads and speedy urbanization following the 'opening of the country' in 1951. At that time, about 200,000, (2.9 percent of the total population of the country) people lived in five urban centers and 83 percent of those were living in three municipalities within Kathmandu valley. Today about 15 percent population is urban and is shared by the valley and some towns of the Tarai, the southern food belt of Nepal. The 'primate' nature of Kathmandu and the political, administrative and economic importance of the valley continues to attract more migrants into it and today houses about one million people in its five municipalities. The pace of expansion has far overrun the pace of infrastructure provision precipitating environmental problems of unprecedented proportion within the valley bowl. The bowl shape and air pollution have raised serious possibility of inversion effect. The rapid expansion of towns outwards has also already fused Kathmandu and Lalitpur together physically and economically, only the municipal boundaries, division of authority and separate traditional cores remaining to remind one of their past distancing. This autonomous urbanization and the conglomeration process can be expected to fuse all the five municipalities into one long stretch of urban mass within the next ten years. While the population expansion has stretched the valley resources and ecology to the brink and breakdowns are already reached visible proportions, management of both the ecological concerns and the urban fusion are constrained by boundaries of political and administrative authority and responsibility.

Trends towards Megalopolis: Eco-concerns

Between 1846 and 1951, migration into Kathmandu valley was tightly controlled by the rulers and population growth was more or less limited to natural population growth. As the Rana oligarchy also took over available large chunks of land around the traditional cores of the towns of Kathmandu and Lalitpur for their huge palaces, the town's physical expansion was also decidedly curbed. Even without such 'physical barriers', the third town of the valley, Bhaktapur, said to have been reorganized with 12000 households in the twelfth century, had been contained within its traditional perimeter defined by the *piths* of the Eight Mother Goddesses and its population remained at its original design size of about 60000 to 1970. However, following the sixties, as the new political, administrative and economic structure of *Panchayat* gained ground, the urban expansion of Kathmandu and Lalitpur towns gained such speed that it has literally broken all boundaries including the ecologically established social principle of building just in the fallow *tar* land.

Limited and insufficient development of urban infrastructure, particularly roads, led to an octopus growth pattern that followed roads linking one town to another or the towns to the villages in the hinterland. Today all the *dola* and the *tala*, agriculturally productive slopes and river plains between Kathmandu and Lalitpur are virtually buildup and the two town make one physical mass. The process is now directing itself towards the third largest town of the valley, Bhaktapur, engulfing the mid-way town of Madhyapur

municipality in the process. This process is so emphatic and clear that the planners have proposed town extension program[9] which will reinforce the trend rather than fight it. Current trends and plans will make all the five municipalities of Kathmandu and several other nearby 'urban villages' into one large mass of a megalopolis within ten years or even faster.

It may be out of place to discuss here whether or not urban planning should aim to preserve fertile agricultural hinterland of the valley or not[10], or whether agricultural economy should form a part of the immediate urban support system even today. Still it needs to be noted that the megalopolis type conglomeration overwhelms the millenium old balance of nature, economy and social relationships. The current trends and plans are based so much on economic value of land as decided by proximity to core and availability of transport and other modern services that the complete loss of the eco-sensitive cultural knowledge has only been a matter of time.

It is sometimes argued that the traditional community is so decidedly reduced to a minority by large growth through in-migration that older cultural values are irrelevant. This argument is based on the general misunderstanding that cultures are only people specific. Culture should be seen summary result of interaction of nature, local economy and social relationship and their place specificity and place relevance should be seen as more important even as the knowledge is carried by the people. The motto should have been people should adapt to the place and not the other way. Saving cultures helps save place.

Environmental Situation[11]:

The fast urban expansion has not been matched by a commensurate expansion of urban services and infrastructure. Water supply is severely below requirement. Deficiencies in other service sectors such as roads, sanitation, solid waste, and drainage are equally glaring. About two third of the already less than required urban roads are in poor condition and the situation is worsened by the excessive growth of vehicles plying on these streets. The inability of the roads network to sustain such a rise in the number of vehicles is exemplified by the result that peak hour average traffic speed in Kathmandu valley is reached a recent low of 8 Km/hr. The growing urban population and the relatively dwindling service and infrastructure level is at the crux of the environmental problems evident in Kathmandu valley towns. The major environmental problems evident in the urban areas are physical congestion, water and air pollution, lack of cleanliness, loss of public open spaces and loss of cultural property. Whereas the level of water pollution can be linked with domestic waste, solid waste and industrial waste and

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[9] The latest plan document, Kathmandu Valley Urban Development Plans and Programs, has been worked on the premise that agricultural land cannot be saved and autonomous trends should be capitalized as a strategy to success!

[10] Until KVUDPP came, planners were arguing and proposing this option in the plans of the seventies and the eighties but failed to implement it.

[11] The section is based on "Urban Environment Management Program", a document prepared for the Government by a team lead by me in 1995. Other members of the team were Prakash A. Raj and Ashok Tuladhar.

their collection, treatment and discharge management and practices, air pollution can be seen as a fall-out of industrial emissions, household energy usage pattern and vehicular emissions and micro-climate.

Physical Congestion: The municipal areas are characterized by a dense core and a 'sprawling semi-rural' periphery. Without plans, land use guidance and weak building regulations that apply within municipal areas[12], areas outside of the traditional core of towns and the strips linking them are undergoing a process of "autonomous development" leading to unpredictable re-densification of towns and bringing marginal lands into building. Density statistics show that the towns in Kathmandu valley are most congested with over with about ten percent living in areas with densities higher than 500 Ppha. With low rise buildings of four floors, densities in some central areas go as high as 1450 Ppha. Evidently, open spaces in these parts of the towns have more or less gone. In addition to light and ventilation problems created, such a density spells disastrous prospects for a earthquake prone area.

Water pollution: Of all towns in Nepal, Kathmandu valley towns are the most affected by water pollution. As many sectors of towns depend on wells and stone water conduits for water supply and given the poor domestic sanitation facilities and low level of septic disposal, the drinking water pollution is likely to be more common than is made out by the available statistics. Likewise pollution of water bodies is also quite extensive due to deposition of solid waste in river banks, lakes and ponds, emptying of untreated sewerage onto the river and dumping of water carried industrial effluents directly into the river etc. Even the pollution of piped supply in terms of bacterial parameters is higher than WHO recommended standards during the rainy season. The pollution of surface water is marked both chemically and biologically and studies available for Kathmandu valley rivers. The cities have of late seen some success in solid waste management alone.

Air pollution: The pollution of air in Kathmandu valley has been a subject of major concern for inversion effect and the contributing agencies are vehicular emission, industrial emission and domestic sources including indoor and outdoor biomass combustion. The lead concentration level is significantly high and given the micro-climatic situation of Kathmandu valley, it is a cause for alarm. Particulate in air is contributed by diesel vehicles, brick factories, cement factory and the dirty streets. Moves

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[12] Bhaktapur, which went through a large physical conservation input and the managers singularly conscious of traditional urban pattern, is doing better and differently in its traditional core.

to lessen vehicular pollution have started for a few years now with minor success. Twenty percent of respiratory infections (hospital cases) have been attributed to air pollution.

Land pollution: The land pollution contributors are urban solid waste and soil pollutants like pesticides and fertilizers. With improved management of solid waste, cities are concentrating on proper disposal of non-biodegradable and hospital wastes. Recycling of plastics gained significant success.

Loss of Open space and greenery: With recent mismanagement of urbanization most of the *khyos* and forested clumps are engulfed by the town as space for building. Also the open spaces in town like courtyards and *lachhi* are slowly vanishing due to failing social control and lack of legal backing. The crumbling of traditional culture has led to filling of ponds and stone water conduits for building. The super densification combined with such a situation has lead to an immense need for open spaces and greenery. Several open space associated cultural expressions have also ceased in the process.

Loss of cultural heritage: The valley towns are characterized by a sizable and unique collection of built cultural heritage and the associated intangibles like festivals, rituals and associated functions and institutions. These towns have become great tourist attractions. In the valley there are seven World Heritage Sites designated by UNESCO. The role of preservation of intangible expressions in conserving and perpetuating the built and the open spaces, maintaining the ecology and assuring social behavior complimentary to them is hardly understood and cared for. The pace of loss of these caused by crumbling cultural practices, alien pressure and speedy expansion has reached such proportions that cultural loss is commonly seen as a natural result of economic changes. Physical edifices are fast on the way out. Although some form of monument conservation is practiced through international assistance, in the WHS monument zones, there is a general amnesia towards cultural conservation. The impact of the loss is feared much only in the context of tourism revenues these help accrue or as matters of national identity. 'Conservation for whom, tourists, indigenous population or for all who have chosen to make Kathmandu their home?' continues to bring debated responses.

Environment, Ecology and Segmented Administration

Condition of segmented local administration within the valley is not a new phenomenon and similar divisions existed in several historical periods. But growing autonomy in local administrative practices, in recent decades, have precipitated debilitating difficulties in planning for and implementing urban planning and environmental management, all of which involve valley wide ecological and resource considerations. The five municipalities and several Village Development Committees have management authority in different areas of Kathmandu valley and development authority of three District Development Committees overlap therein. The expanding towns and their conglomeration, environmental and ecological issues demand joint or single actions. The difficulties in such a mode of action instead have precipitated umbrella institutions that are limited to policy debates. Municipal Act makes environmental management a local administrative responsibility. The municipalities not only lack managerial and technical capacity and administrative authority to respond satisfactorily to demands of environment that extend out of its boundaries, but are also handicapped by lack of resources. Environment Protection Council has been formed as an apex body under the chairmanship of Prime Minister. Urban Environment action is sought to be coordinated through Urban Environment Management committee organized under the chairmanship of the Minister of Housing and Physical Planning where as Ministry of Local Development coordinates municipalities. Ministry of Environment and Population has also been set up. All these have furthered institutional overlaps and actions have not been as effective and sharp as the array of authorities would tend to suggest.

Approach to environment management have been through a mix of corrective (mitigational), preventive (legal), developmental (urban infrastructure augmentation) policies and activities. Whereas with sufficient resource backing and program linkages, it seems theoretically possible to manage facets of environment precipitating air, water and land pollution through this approach, the same could not be said when it comes to historic cultural environment, which has both tangible and intangible components e.g. built heritage and open spaces; festivals and rituals with their spatial, social and community relationship; *Guthi* (or trusts) and its social organization and economic base, etc. Conventional tools, based on approaches of conservation, also have not been able to bring about anything more than conservation of a few monuments in the arena of physically built heritage. These are not able either to prevent or to mitigate loss of culture. Development and conservation of culture are seen as contradictory to each other.

Historic environment and the gray area of management

Perception of historic environment as a simple legacy/heritage of the past is based on the presumption that there is a break between the past and the present. Its relevance to present times is then given a status of the proverbial 'grand father's clock' and tangible elements become historical monuments to be conserved for memory and tourism, the latter giving it a resource role. The presumed break in 'continuity of time' presupposes spatial, psychological and cultural distance of present man with those of the past man. Whereas this would be true about Cambodians and Kambujas (Ankor Wat) or Chinese and the Chi'ns (Great Wall), it certainly is not so for many eastern civilizations. As a result one has started talking about living heritage and Kathmandu valley towns are one such set. Idea and works of conservation of historic monuments or zones or even cities are guided by this concept of break and do not see historic environments as important constituent of the present life of a town and its inhabitants. As a consequence, the software of culture, the intangibles like rituals, festivals and social relationship, which link man to the artifacts, are left to languish. Indirectly thus the current mode of historic environment management has encouraged adverse community and individual behavior towards the ecological environment. Conservation as practiced today neither mitigates cultural degeneration nor help develop (taking it further) cultural processes. Providing for the needs of man in town may be a matter of economic investment but its sustenance needs to be approached through culture building processes and should continue it over the past cultural mechanisms. Internally guided regeneration and not externally supported revival should be the basis for management of historic environments.

As the common good is a major objective any civic administration, whether that of a metropolis or a megalopolis, with regard to objectives related to social equity, environment or sustainability, its activities should be sought to be implemented through mediums that are agreeable to majority or all of the society to ensure success. Such mediums must be able to cut across sectors and direct individual actions towards desired directions. For such reasons legal mechanisms are commonly used by administration to achieve ends of common good as the current western society has developed on legal mediation. In countries where such law-abiding culture is not yet strong, planning and other forms of actions mediated through legal arrangements alone would naturally fail. In the traditional society of Kathmandu valley, the managers used ritual mediation simply because such umbrella was least likely to be transgressed by a society seeped in religious beliefs. Precisely for that reason they succeeded for generations to sustain development.

The historical town management also tells us that social relationship breaks down when the neighborhood exceeds a certain size or when a high level of heterogeneity is reached. For this reason, the optimum size was maintained by breaking up towns into appropriate neighborhoods. For societies like those of Kathmandu, where traditional culture still persists and commands higher propensity to conformity as compared to legal provisions, it could be the best medium for successful implementation of city action. Essentially, the proposal here is that historical culture and cultural practices could be developed and used as mediums for managing changes more successfully than through more legal provisions.

Ideas for holistic conservation of cultures are being explored and developed in academic institutions. The works on 'urban territorial conservation'[13] and historical-cultural 'knowledge systems'[14] have sought to take conservation from monument and monuments zone into wider landscapes and closer to the people and their cultural needs. Call for innovation in dealing with cultural practices persists. For the past few years, we, (Institute of Engineering, Department of Architecture, Urban Planning program) have been exploring ways of urban regeneration through the medium of cultural processes such as festivals or other surviving indigenous knowledge systems (such as related to water supply systems, local domestic industries, drainage and irrigation etc.) of potential relevance to physical planning. Guided by analysis of cultural practices and their visible strong respect for and ties with the valley ecology, we believe that conscious efforts at taking such cultural practices further will also help in restoring a sustaining interactive relationship between the people, their town and their environment. Starting with one or more of such processes and their spatial linkages as points of departure, efforts are made in these regeneration exercises to incorporate into them modern day needs and positive social practices (e.g. festival routes and their activation > school and children's play parade, open spaces > modern community sports and entertainment, etc.). The community response to these planning exercises have been very encouraging.

The learning process continues and we have yet to see practical applications of these. However, one thing is certain, for towns with dominant 'historic environment' use of cultural practices and processes can be a strong tool to tie up the current social disintegration. In the context of conglomeration of towns and their segmented administration too, cultural processes and practices, which are common to all of them, is a medium that transcends administrative boundaries and draw cooperative response from

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[13] Herb Stobel, ICCROM, Rome.
[14] Prof. Nalini Thakur, Department of Conservation, SPA, New Delhi.

the people. This could be made a ready and existing 'umbrella structure' to carry developmental and other environmental actions towards wished for directions. History shows that such a tool for policy implementation has been successful in Kathmandu to a great deal in assuring safety and equity across time (or present and future generations), across space (or city, hinterland and globe) and across citizen groups (or social strata).