Challenges And Responses In Conservation Of Forest And Wildlife: A Case Of Aravalli Ranges, Delhi NCR, India

Abstract

Modern world of unmindful consumerism has resulted in over exploitation of our planet’s scarce natural resources threatening biological diversity. The responsible major causes responsible behind this threatening biological diversity are deforested, pollution and cataclysmic phenomena like a cyclone, tectonic upheavals, excessive rain and climate change. This, therefore, call for maintaining the intrinsic relationship between forest and wildlife in the overall framework of natural conservation with human beings remaining at the centre. This has amply been demonstrated through one of the important studies appeared in the Science Advance Journal 2015, authored by scientists at Stanford, Princeton, Berkeley and Duke University. To demonstrate this, hilly areas with forests of Aravalli Ranges --the oldest mountain ranges of Asia—has been taken up as a case study to analyze the existing scenario, cause- effect relationships, human activities and their impact on the environment and finally strategizing their sustainable co-existence. Aravalis, the oldest fold mountain ranges of India display extreme range of climatic conditions, dry deciduous forest water scarcity with mixed ownerships. But the fact remains that the urbanization and industrialization have posed a serious threat to the environment of this area. Aravalli ranges in and around Delhi, Mewat and Faridabad in Haryana and District Alwar in Rajasthan have seen many such changes.
in the last few decades which has resulted in a negative impact on the natural habitat. Most of the areas lying between the hills and flat plains have been acquired and developed by the State and Central Governments, Corporate Sector, private Builders and Colonizers especially in the state of Haryana who have scant regards to conservation of the natural environment. In the overall ecosystem of Aravalis the role of community participation in the management, thus, becomes an obvious strategy to be adopted not only for the conservation and protection of forest but also for the economic wellbeing of the local people.

1. INTRODUCTION

Inadequate distribution and their indiscriminate exploitation have resulted into greater stress on natural resources. This phenomenon has constantly persisted since 1990s with the advent of economic reforms and has resulted into a new pattern of development. Consequently, the desire to attain more and more economic progress in the country on the basis of availability of resources coupled with excessive consumption led exploitation of scarce natural resources. However, natural resource management has always been in the limelight and became a matter of concern for the ecologist, environmentalist and planners due to excessive use of natural resources. Although, consideration of environment has been important aspect before initiating a development project or planning of an area, the fact that the lack of awareness among masses, their participation with delayed and non-implementation always marked the development scenario. As a result, environment remains a matter of low priority in the country over the past few decades.

Although, in India nature has gifted several precious natural resources like lakes, seas, rivers, sunshine and wind, forests, biodiversity, hills etc. but due to continuous exploitative irrational use of these resources made the situation worse. Therefore, this paper will focus on the conservation of forest area and wildlife near Gurgaon in order to seek appropriate solutions through ecotourism that can create equilibrium between the development and conservation of natural resources with the involvement of local communities.

Aravali ranges spread primarily in three districts of Haryana namely Gurgaon, Faridabad and Mewat along with the features like thick vegetal cover, undulating foothills, rich in biodiversity, etc. These ranges support and determine the living pattern of the local communities by providing them fuel wood, fodder for their cattle’s; medicinal plants etc. that reflects the strong interaction between the local populace and hills.

But the fact remains that Aravalli ranges near Gurgaon are facing an experience of environment degradation due to indiscriminate urbanization and industrialization and posing a serious threat for the environment of this area. Even a huge portion of land on the hills has been acquired for development purpose by the Government, Corporations or Private Builders and other Businessmen having negligible regard for conservation of
the natural environment. Consequently these types of activities have destroyed the relationship existing through centuries between the residents of the settlements in and around the Aravalli Ranges. Deforestation and unregulated mining and quarrying activities are creating deserted climatic conditions very fast in this area.

The paper will establish interconnection between the natural resources and rural community and identify the potentials of ecotourism through community participation approach at the site in order to maintain the sustainability of the entire hilly ecosystem.

2. CASE STUDY

The Aravalli ranges from National Capital Territory (NCT) Delhi to Ferojpur Zhirka in Haryana and further extending to Alwar and other parts of Rajasthan & Gujarat states are the oldest mountain system of the country. These ranges have been supporting and impacting the living pattern of the local populace in their respective areas. Aravalli Ranges falling in the south of NCT Delhi, district of Gurgaon, Faridabad, Mewat (all in Haryana and Alwar of Rajasthan fall in the NCR Delhi) present an enormous rich bio-diversity in the region. The Aravalli ranges, with thick, dry deciduous tropical woods, present not only an enchanting picture, but support the economic base for the local communities-settled along these ranges. Drought resistant species such as Kikar, Kher, Jungli Ber, Tar Falsa, Janti, Guggal, Eucalyptus, Sirish, Babul, Jhar, Imli, Mulberry among other species find their place in the Aravallis. The economy of numerous big and tiny villages in the foothills depends on these mountain ranges for cattle fodder, dry fuel – wood, woods for wooden and thatched huts, medicinal plants, gum, water and fresh air - the basic necessities in their day-today life - all come from these Aravalli ranges.

Long rocky outcrops, rising abruptly from the flat topography with small natural depressions on the top, containing water, along with grooves of thick vegetal cover are general features of the flat hilltops of Aravalli ranges in the south west of Delhi, Gurgaon, Faridabad and Mewat districts of Haryana and Alwar district of Rajasthan. Marked by gully formations, undulating foothills is found in various forms, lying between hills and plains with alluvial and Aeolian deposits. Part of areas lying between the hills and flat plains, to some extent, have been acquired and developed by the Government, Corporations or Private Builders and other Businessmen having scant regard for conservation of the natural environment.

From time immemorial, the local communities have been living in a symbiotic relationship with these hills and they cannot think of life being lived without interacting with such environs. The thick forests in these mountains are good habitat for vertebrates and invertebrates and home to a large number of wild animals such as leopard, fox, hyena, porcupine, jackal, rabbits and a variety of birds like peacock, parrot and other species. But Haryana and Rajasthan are predominantly an agricultural state which covers 3.81% and 9.5% respectively of the total area under forest area respectively, though the National Policy 1988 envisages an area of 33%.

3. CHALLENGES

Some of the projects and developmental activities taken up especially near Manesar and Sohna by Governments, Corporations and unscrupulous Builders and Colonizers which are detrimental to the environment and have negatively impacted the socio-economic and traditional culture in the area:-

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i.) **Land Acquisition for Development**

Development of a large industrial estate by Haryana State Industrial and Infrastructure Development Corporation (HSIIDC) in the name of the Industrial Model Township (IMT) Manesar acquiring more than 4000 acres in the foothills of Aravalli ranges at Manesar. This development has negatively impacted the environment and living patterns of villages namely, Manesar, Khoh, Kasan, Bas, Nakhraula, Kankraula, Bhangrola, Nainwal, Sehrawan, Kukraula, Naharpur, Gawalier and Naurangpur etc. by acquiring their ancestral land disturbing the social fabric they were enjoying through centuries. The acquisition of land has impacted their social, cultural and physical spheres negatively.

ii.) **Loss of Forest Cover**

About 48 acres of land belonging to the Panchayat of Manesar were transferred to the Department of Technical Education to construct Polytechnic College and later on Community College at the top of the hills. Further more than 60 acres of Panchayat land of village Manesar were transferred to the Police Department in the year 2010 to construct its police line. Astonishingly, this chunk of natural undulating land with thick forest having 1373 trees and innumerable shrubs and bushes was cleared to pave way to create concrete jungle. Indian Vaccine Corporation Limited (IVCOL) acquired more than 115 acres of land in the year 1988 in the Aravalli ranges falling in the revenue estate of village Manesar. Out of this land, the IVCOL has leased out its 38 acres of land to the National Brain Research Centre (NBRC) in the year 1999. NBRC has established a campus with its administration, residences, hostels and teaching blocks. This campus has been built right on the hills and its foot-hills disturbing the pristine ecological balance in the area.

iii.) **Damage of Natural Drainage Pattern**

Private builders and businessmen (DLF, ABW, Anant Raj, Amity University, Tarudhan Valley, Hotels, Roadside Dhabas and Crushers, etc.) have come up which have impacted the area and the environment negatively with damage of irreparable loss. Their development has completely damaged the natural drainage system of the area - existing through centuries and the result is that all the nearby villages get inundated during rainy season. Village Manesar, Bass, Kasan, Sikohpur and Khoh are especially the victims of drainage problem as the natural drainage system besides others have been destroyed and developed suiting to their commercial mind-set.

iv.) **Loss of Biodiversity**

Raj Rifles are occupying a large chunk of land of village Manesar, Nainwal and Gwalior right at the top of the hills which was full of rich bio-diversity, once. Now, the forest and wildlife of the area has drastically changed its character due to the construction activities and presence of Raj Rifles.
v.) The National Highway Authority of India (NHAI), while widening NH-8 recently acquired forest areas on both sides of the NH-8. Besides, free and safe movement of wildlife in the area, has been obstructed because the National Highway bifurcate the contiguous forest area, which otherwise should have been made easy and free movement of wildlife in the form of a contiguous corridor. Furthermore, the drainage system has been so faulty designed by the NHAI that the whole rainwater run-off enters the village and inundate during rainy season.

4. DISCUSSION

This hilly ecosystem rich in thick forests has various watershed subsystems. Watersheds being Geo-hydrological units drain the area at their respective common points. Vegetative bonding in these watershed units’ arrests runoff and control soil erosion through moisture conservation and helps in water balancing and nurturing the vegetative cover. This has encouraged diversified economic activities including crops, horticulture, agro-forestry, livestock management along with fuel wood timber availability. The Aravallis in this part of the region, therefore do not only demonstrate the ecological balance with a mixed vegetative cover of grasses, shrubs and trees, encouraging rich wildlife habitat but also provide opportunities of livelihood for the local communities. The historic 73rd constitutional amendment act in the year 1992 in the Panchayati Raj Institutions (PRIs) has empowered the Gram Panchayats by mandating the right of ownership and management of forest and its produce along with others in a sustainable and judicious manner. Quite important is the fact that the Panchayats of the villages namely Manesar, Nainwal, Gwalior and Kukrola, in one of the attempts by the Government of India to acquire the land for defense purposes, have refused to part with their land and passes resolutions to save the forest land. The symbiotic relationship existing through centuries between the residents of the settlements in and around the Aravalli Ranges, is degrading at an alarming rate by acquiring its land and putting it to non-forest uses. Wild animals are on the verge of extinction because of indiscriminate urbanization and industrialization, encroachment and other activities of human intervention in the area. Such developmental activities have also, in a drastic manner, adversely affected all aspects of the life of local communities - the social, economic cultural and physical.

Further, acquisition of land in the area will not only leave these villages without even a single patch of area for the villagers and their domestic animals to breathe, but will result in depletion of green lungs, reducing the carbon sink, and create adverse conditions in recharging underground water and wildlife habitat, leading finally to global warming. The symbiotic relationship these villagers enjoying with the forest and the hilly-ecosystem through centuries together will come to an end and spell a disaster for all these settlements. The hills and forest ecosystem in the Faridabad district to a larger extent, has been saved by the historic decision of the Hon’ble Supreme Court of India.
5. Responses

The main features of Haryana Forest Policy-2006 and a few responses from the public sector, environmentalists, NGOs and civil society are elaborated below clearly support the above contention:

- Though scattered, a few pockets of thick forests such as Asola (NCT Delhi)-Faridabad, Manesar-Sohna, Firozpur-Zhirka (all in Haryana) and Siriska (Rajasthan) have developed in the sub-regions of Haryana and Rajasthan of National Capital Region of Delhi, there is a strong reason to interlink these scattered pockets in a contiguous corridor for wildlife habitat. Asola-Faridabad be linked to Manesar-Sohna pocket with a newly created green belt of about 500 meters in width between them. Similarly, Manesar-Sohna pocket be interlinked with Firozpur-Zhirka pocket with afforestation on the hills and its foothills. The Firozpur-Zhirka should also be linked with Siriska wildlife sanctuary, which falls in Rajasthan by afforestation on the hills and foothills between them. Along with this, other requirements such as provision of water bodies, adequate and safe availability of food and hideouts for the wild animals are provided throughout the corridor. Other development either by public or private sector in and around Asola-Faridabad and Manesar-Sohna pockets- presently under severe pressure- should be banned.

- Natural forests in Haryana, though limited in pockets of Shivalik and Aravalli Ranges, have a high potential in the improvement and conservation of the natural environment. Emphasizing this fact, the Forest Policy of the State of Haryana clearly mentions that natural forests in Shivaliks and Aravallis should be surveyed and demarcated by fixing permanent boundary pillars for their protection. The policy further states that wildlife habitat in these forests is developed and protected and to this end water body/points should be created. The principle of ‘location specific’ emphasized in the preamble of Haryana Forest Policy–2006 is an important step towards conservation of multi-dimensional natural environment. It does not open-up smaller areas at grass-root level only but also addresses the concerns of varied attributes of environmental conservation in the right perspective, such as water, air, soil and fauna and flora.

- Recognizing the fact that state forest covers only 3.52% of the area with 0.007 hectares per capita and some of the flora and fauna are on the verge of extinction, the state forest policy document aims to bring environmental stability and restoration of ecological balance and conserving bio-diversity in natural forests of the state. While elaborating the essentials of forest management, the State Forest Policy clearly states that, “Existing forests and forest lands should be fully protected. Forest and vegetal cover should be rapidly increased on hill slope of Shivaliks and Aravallis;” (para 3.1). If taken care of properly, the Aravallis may prove to be breathing lungs in this area of massive and distorted development. Every community operates within the stronghold of the physical landscape of that particular area which has control of their consciousness, hugely influencing their day-to-day living pattern. Manifest in local culture and tradition, the Aravalli forest and hilly eco – system plays an immediate
and considerable role in social and cultural life of the communities living here. The immediate physical and natural environment, in its entirety, has always played positive roles; but it is the consumerist attitude of unscrupulous persons only tends to destroy its congeniality.

Recent research bears ample testimony to the fact that local communities continued to have interacted with the hilly and forest eco-system in a balanced and sustainable manner. Not going far, for example, the local communities in the village of Manesar can be seen playing a great role by forming different societies for the improvement of its immediate environment. Presently, three societies are working to afforest different areas and rejuvenating the old johads (ponds) and small streams and rivulets.

The hilly and thick forest area in the region forms part of the Haryana Sub-Region of National Capital Region (NCR). Realising the need to control and regulate the development in the region surrounding the National Capital of Delhi, the Parliament enacted the National Capital Region Planning Board act in 1985 with the concurrence of the constituent States “to provide for the constitution of a Planning Board for the preparation of a plan for the development of the National Capital Region….”. As per its para 13.1.3 of the Regional Plan thus prepared, has specifically mentioned the Hilly areas of NCT- Delhi and Aravallis at Gurgaon, Faridabad and Alwar for conserving their bio-diversity. Further in para 14.2 (viii) reserved/forests, forests other than reserved and protected forests, areas with endangered species- flora and fauna, water bodies, springs/ water recharge areas and other environmental resources areas have been proposed for their protection and conservation and in para 14.2 (iX) cutting of trees and construction of any clusters of dwelling units, farm houses, sheds, community centres, information centres and any other activity connected with such construction (including roads and part of any infrastructure relating thereto) among others have been proposed and listed to be prohibited.

National Capital Regional Plan stipulates that in the Natural Conservation Zone only following activities are permitted:

i) Agriculture and horticulture
ii) Pisciculture
iii) Social forestry/plantations including afforestation’s
iv) Regional recreational activities with no construction exceeding 0.5% of the area with the permission of the competent authority

A recent study undertaken by National Remote Sensing Centre (NRSC) commissioned by National Capital Region Planning Board (NCRPB) for review of Regional Plan-2021 has clearly indicated that the built up area in the whole NCR increased 34.6% at the cost of green areas and water bodies. Planners and environmentalists feel that the Aravalli Ranges, Yamuna and other river and water-bodies have suffered the most in this regard. The most surprising and disturbing fact that emerged from the above analysis is that in most of the cases it is the Government and its institutions behind the neglect and desecration of natural environment. These
mal-functioning on the part of Government of Haryana and Union of India are inviting serious implications not for the survival of local communities only but the overall conservation of our biodiversity—the life-supporting system. Therefore, whatever ‘spatial order’ is left at the local and sub-regional level at present should not at all be allowed by any stakeholder to turn into ‘spatial conflict’, as any acquisition proposal in future will be irrational and against any objective thinking. Consequently, the environmental costs, social costs, adverse social impacts of the proposal will certainly outweigh the potential benefits.

6. A Way Forward
The existing custodians/under occupation of the area, whether public or private already acquired or proposed to be acquired in very rare cases in the hills, foothills and within a distance of two kilometers from the foothills should obtain Environment Impact Assessment (EIA) clearance and prepare an Environment Management Plan (EMP) for approval from the Union Ministry of Environment and Forest (MOEF) on a regular interval of three years. A detailed survey of the forest in and one km. on both sides along the Aravalli ranges falling in the state of Haryana and Rajasthan may be got conducted by an independent reputed expert agency which can identify “forest irrespective of whether they are so notified, recognized or classified under any law including Bani and irrespective of the ownership of the land of such forests”. The agency should also identify areas which were earlier classified as forests, but now stands degraded, denuded or cleared. The Ministry of Environment and Forest, Government of India should make out a case to the United Nations (UN) for declaring some parts of Aravalli mountain system as the Heritage Mountain for these are the oldest mountains of India and have been supporting the economic, social, cultural and physical aspects of a large population living in and around these hills through centuries. No further approval is accorded to the expansion of existing and modernization of any projects or other activities except in rare cases such as rainwater harvesting structures, construction of check dams and rejuvenation of ponds, lakes/water bodies and any facility to be created for wildlife for their free movement, hide-outs and drinking water. Those who have already been permitted as stated above, may kindly be directed to contribute to the ‘Environment Fund’ - which should exclusively be created for the use and benefits of settlements whose land already stands acquired -- proportional to the area they are occupying-- and should exclusively be utilized for the welfare activities. These activities may include solid waste and sewerage systems with sewerage treatment plant (STP), a drainage system, water supply, roads and streets, community centres/chaupals, old-age homes, hospitals, schools and colleges etc. This fund as a part of corporate social responsibility (CSR) should be made compulsory to all the builders, colonizers and corporate sector.
An integrated corridor for the free movement of wild animals is required to be developed from Manesar-Sohna, Asola-Faridabad-Sohna up to Ferozpur -Zhirka (in Haryana) and further be extended to Siriska in Rajasthan. The corridor between Asola-Faridabad to Sohna is not existing at present with the effort of government a corridor of 500 metres can be established.

7. CONCLUSION

A Coordination and Monitoring Committee is required to be formed which should be headed by an independent, non-official expert with a background of multi-disciplinary approach, such as, Regional Planning/Environmental planning, ensuring desired environmental quality through stock- taking on half- yearly basis and this committee shall be empowered to submit its recommendations to the Union Ministry of Environment and Forest. This mechanism will not only encourage sustainable improvement in the environment, but will also leave no scope to alter its environmental status adversely as envisaged and approved in the initial stage. The common land entered in the name of Panchayats of the villages as stated above was transferred from the individual’s ownership in forties and fifties in the last century for the use of common purposes and in no way should be transferred or acquired for any other purposes.

8. REFERENCES:

[5] Haryana Forest Policy, 2006, Department of Forest and Environment, Haryana, India.
AUTHOR’S BIOGRAPHIES

K.K. Yadav is technically qualified Town Planner and have retired as Chief Town Planner from the service of Government of Haryana. After retirement I am associated with Amity University, Haryana, India as Guest Faculty. After completing my bachelors (Hons) degree I completed my Post Graduation (PG) from Jawahar Lal Nehru University (JNU), New Delhi and a professional PG degree in Town & Country Planning from School of Planning and Architecture (SPA), New Delhi. After joining as Assistant Town Planner in the Department of Town & Country Planning, Government of Haryana, in the year 1976, I went to Poland on a Fellowship Programme to study an ‘Advanced Course in Town and Country Planning’ and completed it with high praise from the faculty there. The study work undertaken there stands published in the Journal of ‘Urban India’ of the National Institute of Urban Affairs, New Delhi. Except Graduation (Hons), I completed all my studies through Merit Scholarships. While working hard for more than 34 years in the Government Department I followed the policies and programmes in various capacities such as Assistant Town Planner, District Town Planner, Senior Town Planner and Chief Town Planner in the department of Town & country Planning, Urban Local Bodies and Haryana Urban Development Authority with dedication and helped the State in preparing Development Plans/Master Plans of various town and cities along with formulation of various policies and programs. While studying in JNU and SPA, New Delhi being inter-disciplinary, I developed a taste for research during service and wrote a number of Articles on various aspects of development such as Migration And Development, Development And Environment, Urban Planning, Land as a Resource for Development, Eco-Tourism, Population and Development and Governance etc. These articles have been published in the National Journals and News Papers such as ITP Journal, Urban India, The Environment, The Deccan Geographer, Regional Science and The Tribune. Besides, I am also involved in the awareness of issues of environment and development in Aravalli Ranges near Delhi with the result that I compelled the Department of Forest and Environment, Haryana to construct two earthen check dams after a lapse of 70 years in the Manesar area of Aravalli ranges which will stop depletion of underground water tables and enhance and nurture greenery in the area. Further, I have attended a number of National and International conferences.

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