

ACKNOWLEDGEMENTS

The Ladakh 2025 Vision Document wouldn't have materialised had it not been for the able coordination efforts of Mr. Jigmet Takpa, IFS Conservator Forests, officially appointed as the Convenor of the Vision Document Committee that was instituted in July 2004. Gratitude is therefore due to him, first and foremost, for the sterling job that he did with respect to the formulation of the Vision Document.

This vision Document is result of many discussion and debate that were held under the aegis of Committee for formulation of Vision Document. For almost a year, this committee held painfully long meetings with every section of the society, to come up with the thought and ideas that are contained in this Document. I would like to make a special thank to the following members of the committee.

Sh. Chemet Namgyal Councillor LAHDC	Dr. Tsering Ladol Gynecologist
Sh. Sonam Murup SE (PWD), Leh	Dr. Tsering Norboo Physcian Specialist
Sh.. Lobzang Tsultim Asstt. Comm. Dev.	Ven. Geylong Paldan, Scholar
Dr. Sonam Dawa CMO Leh	Dr. Aziz Mir Ex. Asso. Dir. SKAUST
Sh. Sonam Gyalsen CPO DDA,Leh	Sh. Sonam Wangchuk Sec. SECMOL
Sh. Luthar Dejour FM DIC,Leh	Sh. Tsering Norphel LNP Leh
Dr. T. Phuntsog Sheep Husbandry Deptt.	Sh. Sh G. M. Sheikh Dir. LDO, Leh
Sh. Jamyang Namgial Technical Director NIC	Sh. Tashi Rabgais, Scholar
Smt. Tashi Yanskit , Dy CEO Edu. Deptt.	Sh. Sonam Dorjey Ex. Supt. Handloom

People from all walks of life participated in the meetings and discussions for almost a year, which included the students, Panchyat, councilors, leaders, Heads of departments, NGOs, Social, Cultural and Business Association of Ladakh, the Ministers and the seniors bureaucrats from the state and center government. The feedback and valuable suggestion received from them and many other who though did not attend the meetings but their reviews, suggestion and inputs have highly enriched the Document.

The committee for formulation of Vision Document received the guidance, help by reputed institutions and organization. The Tata Institute of Social Sciences (TISS), Sir Dharobji TATA Trust, FRL, ICIMOD, Save The Children (UK) helped the committee to formulate this document. Dr. S. Parasuraman and Dr. Chandersengupta from TISS made several visits to Leh to guide the committee.

At the onset of the formulation of vision Document, the members of the committee were motivated and encouraged by the guidance of Ms. Daman Singh and Sh. Sudhir Rao, (Consultant engaged by SDTT for preparing the Developmental initiative for Ladakh). We are highly grateful to them.

We are highly indebted to the Hon'ble Chief Minister of J & K State, Jenab Mufti Mohd Sayeed, and his cabinet colleague for extending the kind invitation, the necessary support for organizing the consultative workshop in the state capital and Inaugurating the Workshop at Srinagar.

Special mention must be made to Pandit Mangat Ram Sharma Ji, Hon'ble Deputy Chief Minister of J & K State, for all his support and encouragement to the people of Ladakh

Dr. S.S. Baloria was the chief guest for the Valedictory session of Workshop at Srinagar. His invaluable comments and the suggestion has been incorporated in the Vision Document.

I must make a special mention here of Sh. Nawang Rigzin Johra, Hon'ble Minister for Science and Technology for all his guidance, support and encouragement. His enthusiasm can be gauge by the fact that on his personal effort almost the entire Cabinet Ministers and state senior bureaucrat attended the workshop at Srinagar and reviewed the Draft vision Document.

The Hon'ble Chief Executive Councillor, Sh. Rigzin Spalbar, as well as the Hon'ble Executive Councillor have been actively involved in the preparation of the vision document. Without their encouragement and support, it would have been difficult for this document to see the light of the day.

Shri Pintoo Nurboo MLA has been very actively involved in the workshops and his suggestions and comments has been incorporated in the vision Document.

Special mention also be made of Sh. Satish Nehru Deputy Commissioner Leh for all the support he rendered in smooth working of the committee.

We are also grateful to Sh. C Phunsog, Ms. Janet Rizvi, Philips Cornwell for critically reviewing the document and suggesting valuable feed back to make this vision more pragmatic.

This note would be incomplete without thanking Mr. Anant Nautiyal for Drafting and structuring the final Vision Document.

Finally, I wish to thank the Ladakh Autonomous Hill Dev. Council, Leh for appointing me the Chairman of the Committee for the Formulation of the Vision Document.

Sonam Dawa,
Chairman,
Committee for formulation of Vision Document

June 9, 2005

TABLE OF CONTENTS

Message From Shri Manmohan Singh, Hon'ble Prime Minister of India.	I
Message From Jenab Mufti Mohd Sayeed, Hon'ble Chief Minister Of J&K State.	II
Message From Shri Nawang Rigzin Jora Honble Minister Science & Technology.	III
Message From Dr. S.S. Boloria IAS Hon'ble Chief Secretary J&K State.	IV
Foreword Shri Rigzin Spalbar Hon'ble Chairman/CEC LAHDC. Leh.	V
Acknowledgements.....	VI
Executive Summary.....	1
Introduction.....	8
Land Based Economy.....	9
Information Technology.....	16
Tourism.....	20
Small Scale & Cottage Industries.....	25
Urban Infrastructure.....	29
Rural Infrastructure.....	33
Water Resources.....	37
Power & Energy.....	41
Health & Environment.....	45
Education.....	49
Conservation of Natural Resources.....	54
Social & Cultural Values.....	59
Micro Level Planning & Governance.....	63
Conclusion.....	67
Annexure I- List of Members of the Committee For Formulation of Vision Document.	
Annexure II- List of Sub- Committee For Various Sectors.	



सत्यमेव जयते

प्रधान मंत्री

Prime Minister

MESSAGE

I am happy to know that the Ladakh Autonomous Hill Development Council has prepared a vision document titled '**Ladakh 2025 - A Road Map for progress and prosperity**'. The logic of regional councils is to creatively deliberate on the development potential of the region and ensure that plans are prepared to translate aspirations of the local people into reality. This region has specific requirements and specific endowments which are reflected in this document. The Central, State and local Governments must come together to collaborate on achieving speedier development of the region. I commend the efforts that have gone into the preparation of this document and hope that this serves as a benchmark for mapping current status and measuring milestones of growth the region is expected to witness.

Manmohan Singh
[Manmohan Singh]

New Delhi
June 9, 2005



Mufti Mohammad Sayeed



CHIEF MINISTER
JAMMU AND KASHMIR

MESSAGE

I am glad to know that the Ladakh Autonomous Hill Development Council, Leh has prepared a 'Vision Document' which contains a road map for future development of Leh. The Vision Document has been formulated considering the ecology, topography, culture and heritage of Leh.

I do hope that this Document would prove to be a very valuable input for plan formulation.

I extend my felicitations to all those associated with the conceptualization of the Document.


(Mufti Mohammad Sayeed)

Srinagar,
June 8, 2005



NAWANG RIGZIN



Minister for Science & Technology,
Information Technology and Labour & Empl.
Government of Jammu & Kashmir

No.

Dated:

MESSAGE

Ladakh today has emerged as a developmental model not only for other Himalayan regions but also for the State of Jammu and Kashmir and indeed, for the country as a whole. This has been possible due to the establishment of the Ladakh Autonomous Hill Development Council (LAHDC) in 1995. More importantly, this has been possible due to the collective efforts of the political leadership and the public of the region who ensured probity, transparency and accountability in running the affairs of the LAHDC.

Due to its location in the trans-Himalaya Ladakh has altogether a different eco-system with extreme climatic conditions. As such any developmental model that is suited to the rest of the country can not be replicated for Ladakh region. It was, therefore, strongly felt that Ladakh should have a Vision Document which is Ladakh-specific with strong emphasis on sustainability of resources – natural, social, cultural and economic. Ladakh 2025 Vision Document just about does that. It provides a framework for the development of the region in a manner that allows the people of Ladakh to integrate with the modern world while being firmly rooted in its unique cultural heritage and traditional wisdom. Ladakh 2025 Vision Document has done a fine balancing act of synthesizing traditional practices with modern scientific techniques. For any ideal society it is important that it has a vision and that it has the conviction and the political will to see that the vision is translated into actions in a planned manner to ensure a better quality of life for its people. The emphasis has to be on sustainability with equity and social justice; at the same time care has to be taken to ensure conservation of cultural resources and protection of the eco-system. Ladakh 2025 Vision Document takes into account all these critical factors. I congratulate the Chairman, LAHDC and his colleagues for their wonderful efforts and their wisdom in coming up with this document. I assure my full support and cooperation in achieving these objectives.

It is indeed a matter of great pride and honour for all of us that the Hon'ble Prime Minister of India, Dr. Manmohan Singh is releasing the Ladakh 2025 Vision Document.


(NAWANG RIGZIN)



Dr. Sudhir S. Bloeria



**CHIEF SECRETARY
JAMMU AND KASHMIR**

MESSAGE

It is a matter of pride that Dr. Manmohan Singh, Hon'ble Prime Minister is releasing "The Vision Document — Ladakh 2025".

It is a road map for making this region as a model of Hill Area Development. A holistic view has been taken for blending traditional practices with modern scientific techniques. Already this document has set in motion wide ranging debates and discussions on further concretizing details for socio economic development of this region with due regard to environmental issues and cultural heritage.

The Ladakh Autonomous Hill Development Council, Leh deserve praise and credit for preparing this comprehensive document representing urges and aspirations of the people. I am optimist that with sincerity of efforts and purpose, which has been so amply displayed by LAHDC, this vision will become a reality in the proposed time frame.

Srinagar, the
7th June, 2005.

(Dr. Sudhir S. Bloeria)



རིག་འཛིན་དབལ་འབར།
RIGZIN SPALBAR



ལྷོ་དཔོན་པོ།
ལ་དུགས་རང་སྐྱོང་གི་ལྷོ་དཔོན་པོ་ལྷན་ཁྲིམས་ལྷན་ཚོགས་ལྷོ།

Chairman/Chief Executive Councillor

LADAKH AUTONOMOUS HILL DEVELOPMENT COUNCIL, LEH

LEH, LADAKH - 194101 (INDIA)

TEL. : (O) 01982-252212 (R) 250299, FAX : 01982-253298

E-mail : cec_lahdc@yahoo.co.in rigzins@yahoo.co.in

FOREWORD

Every great and successful nation has behind it a story of years of cooperation and hard work of its people. In order to do that work however, a vision is essential. The Ladakh 2025 Vision Document expresses the aspirations of the people of Ladakh towards such a direction. It aims to attain a state of wellbeing for this region that is as close to the ideal as possible.

Of course, what constitutes an ideal society is a matter of conjecture, and a topic to which there can be many viewpoints. To accommodate all such views into a coherent whole in the Vision for Ladakh, a Committee was formed for the formulation of the Vision Document in July 2004. It included various representatives from a wide cross-section of Ladakhi society, including bureaucrats, public representatives, technical experts, external consultants, and even common people from villages. The aim of the Committee was to generate a healthy discussion on the theme of what Ladakh should be in years to come, and then extract the essence of all that emerged as a result of the discussion to be enshrined in the Vision for Ladakh. The exercise was not an easy one, but over several months it was carried out to great satisfaction. As a result, the Vision Document that we see before us today is highly representative of the needs and aspirations of the people of this region.

In the not-so-distant future, India is set to become a global player of eminent standing. Ladakh should be an important contributor to the prosperity that the nation is speeding towards. Neglected for many years before finally given the support that was due to it, there is a great need to make up for lost time in Ladakh today. Yet we will have to take great care that we learn from other parts of the world and make sure that progress in Ladakh means overall wellbeing of man and nature and not just a blind rush for material development. The future of Ladakh is in our hands, and it is our responsibility to make our homeland the jewel in India's crown. Towards such an objective, the formulation of the Vision Document is an important first step. Now, all that is required is the dedication and commitment to make the Vision a reality.

Rigzin Spalbar,
Chief Executive Councillor,
Ladakh Autonomous Hill Development Council.

June 9th, 2005, Leh

EXECUTIVE SUMMARY

Need for Ladakh 2025 Vision Document

Ladakh is a society in transition. Isolated from the rest of the world for much of its existence before it was thrown open to mass tourism in the mid-1970s, the region is caught in a whirlwind of change today. As new lifestyles, practices and social mores enter the Ladakhi community against a backdrop of centuries' old indigenous traditions and culture, uncertainty and confusion reign supreme in the minds of the region's local populace. To remedy this situation, there is a need to evolve a framework that allows Ladakhi people to seamlessly integrate the old with the new. That constitutes the first reason why the formulation of the Ladakh 2025 Vision Document was felt necessary.

The second reason for developing a Vision for Ladakh is based in the rapid decline that this region's resources – natural, and also social & cultural – have witnessed in the recent past. While a more detailed set of strategies to help Ladakh find its place in the modern world can be worked out at length, the need of the hour is to bring an immediate stop to the shocking deterioration of our rich heritage by developing an appropriate set of preventive measures. The Ladakh 2025 Vision Document will be, it is hoped, the repository of all such measures.

Structure of the Document

There are four broad sections being covered in the Ladakh 2025 Vision Document: the Traditional Economy, the New Economy, Physical Infrastructure, and Social Infrastructure. A diagrammatic representation of this classification is available on the page following this summary. The individual sectors that fall under each category are:

1) Traditional Economy

- Agriculture
- Livestock Husbandry

2) New Economy

- Information Technology
- Tourism
- Small Scale & Cottage Industries

3) Physical Infrastructure

- Urban Infrastructure
- Rural Infrastructure
- Water Resources
- Power & Energy

4) Social Infrastructure

- Health & Environment
- Education
- Conservation of Natural Resources
- Social & Cultural Values
- Micro Planning & Governance

It must be pointed out here that this classification is neither watertight nor official. It is aimed simply at facilitating better understanding of the Vision Document. Nevertheless, it does seem that there is some alignment between the concerns of the various sectors that have been clubbed together in separate groups. The latter point is expanded upon a little later in this summary.

Chapter-wise Content

Land Based Economy

Comprised of the agriculture and livestock husbandry sectors, the land-based economy of Ladakh was the bedrock upon which its traditional society was built. In recent years, the significance of the land-based economy has reduced greatly in Ladakh. The main reason for this is the abundance of employment avenues other than land-based occupations that are currently available to Ladakhi people. While this may not pose a serious problem for us in the present scenario, excessive dependence on the outside world for such critical requirements as food could cost Ladakh dear in a crisis situation. There is therefore a need to sustain the land-based economy in Ladakh. Towards this goal, making land-based occupations more remunerative is one of the key strategies, though there are others too.

Information Technology

Being the only industry that doesn't depend on natural resources, the IT sector presents Ladakh with a unique opportunity for growth and global excellence. In addition to its ability to generate plentiful employment opportunities for educated Ladakhi youth in years to come, the IT sector has also emerged as a strong enabler of critical development activities that are required in Ladakh today such as e-governance, connectivity, distance education, disaster preparedness and telemedicine. In order to realise the full potential of the IT sector in Ladakh, appropriate infrastructure needs to be set up and the local population needs to be educated in the use of computers.

Tourism

The sector that everyone likes to talk about, tourism has emerged as one of the dominant components of the current Ladakhi economy. It provides jobs to people in the thousands today, and is easily the biggest source of money for the locals after the government sector. This is despite the fact that Ladakh's tourism industry has barely been tapped. One of the main reasons why the sector is performing below par is that the infrastructure for tourism in Ladakh is not very good. In this regard, it is required for new roads to be constructed in Ladakh, appropriate facilities to be provided for tourists, and a special institute to be set up for training local people in professional hospitality management.

Small Scale & Cottage Industries

This sector includes the manufacturing industries in Ladakh as well as the handloom and handicrafts activities carried out in the region. Bursting with potential, it provides Ladakh with an unprecedented opportunity for employment generation as well as great commercial exploitation. The availability of certain resources such as apricots, pashmina wool and highly skilled craftsmen puts Ladakh in an enviable position wherein it can reap an economic windfall. What is required is for the dormant entrepreneurial spirit to be awakened amongst Ladakhis, so that they can grasp the significance of this sector.

Urban Infrastructure

Being the capital of the district, the infrastructure facilities available in Leh are critically important. In recent years however, Leh's infrastructural set-up has been under tremendous pressure owing to the increased numbers of people that now depend on it for their sustenance. This in turn is largely the result of the rural-urban migration pattern that Ladakh has been witness to these past few years. In order to remedy this situation, the traffic and transport situation in Leh needs to be improved drastically, as does the scenario with respect to the availability of recreation and other facilities for its residents. A zonal town-planning model should be adopted to bring about these changes. Also, the traditional character of Leh town should be preserved and due importance should be given to the conservation of the town's ecological resources.

Rural Infrastructure

The criticality of rural infrastructure facilities in Ladakh resides primarily in the fact that they help to sustain the traditional, village-based lifestyle of this region. The main challenge for the sector today is to provide rural Ladakh with sufficient amenities so as to discourage (and perhaps arrest) the rural-urban migration pattern of recent times. In order to do so, maintaining already existing infrastructure is a significant challenge before the sector authorities. Also, new facilities need to be provided wherever required and basic services like water, power and telecommunications especially need to be upgraded in most Ladakh's villages.

Water Resources

Being a cross cutting sector that affects many different aspects of life in Ladakh, water resources have a crucial role to play in the region. This is particularly so because Ladakh is a semi-arid desert, making water an incredibly precious resource, secondary perhaps only to air. Both drinking and irrigation water facilities need to be improved significantly in Ladakh, given the fact that the demand for water in the region is set to increase many times over in the next twenty years. Simultaneously, flood control works also need to be carried out wherever required in the district. Perhaps most importantly, water resources need to be conserved and protected from pollution in Ladakh.

Power & Energy

Another cross cutting sector, power and energy represents perhaps the most urgently required resource in Ladakh today. The scarcity for it in the region makes itself evident by putting a constraint on the development of literally every other sector. Ladakh's main problems in this field are that it has no resources of fossil fuels, and that distribution of power to Ladakh's remote areas is a great challenge. To overcome these obstacles, Ladakh should increasingly emphasise the use of renewable energy in the region, and develop decentralised power generation and distribution systems. A culture of energy conservation must also be fostered among the local population. Administrative glitches must be removed from the system.

Health & Environment

Apart from its general importance for the development of any society, the health sector has an extremely important role to play in Ladakh. Being a high altitude region, Ladakh is home to a host of peculiar diseases that need to be studied especially in order to better understand them. Also, Ladakh's locational disadvantage makes it imperative that all medical facilities be available within the region. Among the many suggestions put forth in this document to improve the health set-up in Ladakh, the more prominent ones include a general overhauling of the entire medical set-up, and the establishment of a special institution dedicated to studying high altitude ailments in the region.

Education

For many years, education was a neglected sector in Ladakh. Today, the situation has improved considerably due to the active intervention of the community. However, there are still many problems that remain. One of these is that the education system in Ladakh is not economically sustainable. Another is that education in Ladakhi schools is still not locally relevant or connected to children's occupational future. There is a need to give Ladakhi children a strong foundation in such subjects as Maths, Science and Computers. Also, there should be a move towards making education in Ladakh more economically sustainable, through such measures as multi-grade teaching and centralised schools.

Conservation of Natural Resources

Despite being a resource challenged region, Ladakh is home to a rich and diverse ecology. Unfortunately, Ladakh's precious natural heritage has been facing severe pressures in recent times, mostly at the hands of unaware individuals or, worse still, people that knowingly harm the environment for shortsighted monetary gains. The need of the hour is to educate people, introduce appropriate legislation, and lay due emphasis on the use of renewable energy in the region.

Social & Cultural Values

Ladakh's traditional society, known far and wide for its emphasis on sustainability, contentment, and community based cooperation, is on the decline today. The same could be said for its rich cultural practices. Ladakh's ability to preserve its humane values in its traditional practices provides it immense potential for emerging as an example amongst societies pursuing progress with social justice.

Micro Level Planning & Governance

Ladakh 2025 envisions a 'people-centered' approach to development. This would require people's institutions at various levels of decision-making and a participatory approach to the planning process. Whereas the LAHDC and Halqa Panchayats should be empowered, Block Development Councils and elected Municipality (for Leh Town) need to be constituted as early as possible. MLP should be adopted as the basis for planning, piloted in 2005-'06 and implemented in 2006-'07, so that plans based on people's perspectives get implemented from 2007-'08 – the first year of the 11th Five Year Plan.

Principal Themes Emerging in Vision Document

As mentioned earlier, this document can be considered to be loosely comprised of four sections – the Traditional Economy, the New Economy, Physical Infrastructure, and Social Infrastructure. The first thing that strikes us about this classification is that the lower sections seem to be broader than and more supportive of the sections on top. Thus social infrastructure can be thought of as a base upon which all other activity in Ladakh must be built (refer to diagram), followed by physical infrastructure and the land-based economy. Within the new economy, industry (being a more basic sector) is at the bottom of the pile, while IT being at the bleeding edge of development occupies the highest place in the sectoral pyramid of Ladakh. Clearly, the theme that emerges from such a representation of the Vision Document is that economic prosperity cannot be pursued to the exclusion of all other developmental concerns in Ladakh. Social networks and support systems must be given equal (if not greater) importance as well.

At this point, it is necessary to clarify that while the order of Ladakh's sectoral pyramid (from top to down) has been strictly followed when expanding upon individual sectors in the Vision Document, the flow has been violated in one instance: The land-based economy has been dealt with before the new economy. The reason for this is simple. The land-based economy of Ladakh is in a fragile and endangered state today, and we wanted to draw attention to that fact by discussing it in the document, first.

Moving on to a related point, the main concern amongst Ladakhi people with respect to the new economy sectors is that they need to be embraced with open arms. In other words, industries, tourism and IT should be utilised to the maximum possible extent for Ladakh's development. On the other hand, the principal issue in need of being addressed with respect to the traditional or land-based economy of Ladakh is that it should be preserved and encouraged, and not allowed to be completely forgotten instead as is happening today. Thirdly, the main concerns with respect to physical and social infrastructure in Ladakh are that we should be adequately prepared in every respect for the coming future. Not only must we have the roads and bridges to meet the demand of increased commerce in years to come, but we should also have the moral fortitude to withstand the vicissitudes of an uncertain age.

Dwelling on the thrust areas that have been outlined above – of embracing the new economy, preserving the old economy, and preparing for the future – it seems that these represent the three main lobbies that exist in Ladakh's development circles today. In other words, almost everyone concerned about the development of Ladakh is likely to find place for his/her views on the matter in one or more of these categories. This observation constitutes the second theme that emerges from this Vision Document.

Finally, Ladakh appears to be reaching out to the best and most progressive in everything it is doing today. That is the third theme that comes forth from this Vision Document, and is testified by the fact that Ladakh's new economy is spearheaded by IT while its social infrastructure is based upon participatory governance – sectors that command widespread acceptance and respect at the highest policy-making levels in the world today.

Implementing the Vision Document

Four points need to be kept in mind when actually rolling out the Vision for Ladakh that is proposed in this document.

Firstly, a vision is only as useful as the action that backs it up, otherwise it simply remains a statement of intent. It is therefore of the utmost importance that the Ladakh 2025 Vision Document is supported on the ground with concrete, firm and purposeful efforts, so that it can be realised to the greatest extent possible.

Secondly, it is imperative that all work with respect to the implementation of Ladakh's Vision be carried out in an overall environment of coordination and convergence. There should therefore be no unnecessary duplication of work between different departments, and inter-departmental contradictions must not be allowed to occur.

Thirdly, a monitoring and review mechanism should be put in place with the provision of periodically assessing the progress made on the implementation of the Vision. An external consulting agency would be ideal for carrying out this appraisal from time to time.

Finally, implementing the Ladakh 2025 Vision Document will require money. It is difficult to quantify this figure just yet, but rest assured it will work out to significant amount. The authorities should be prepared to spend this sum, for the long-run betterment of Ladakh.

Reading Guidelines

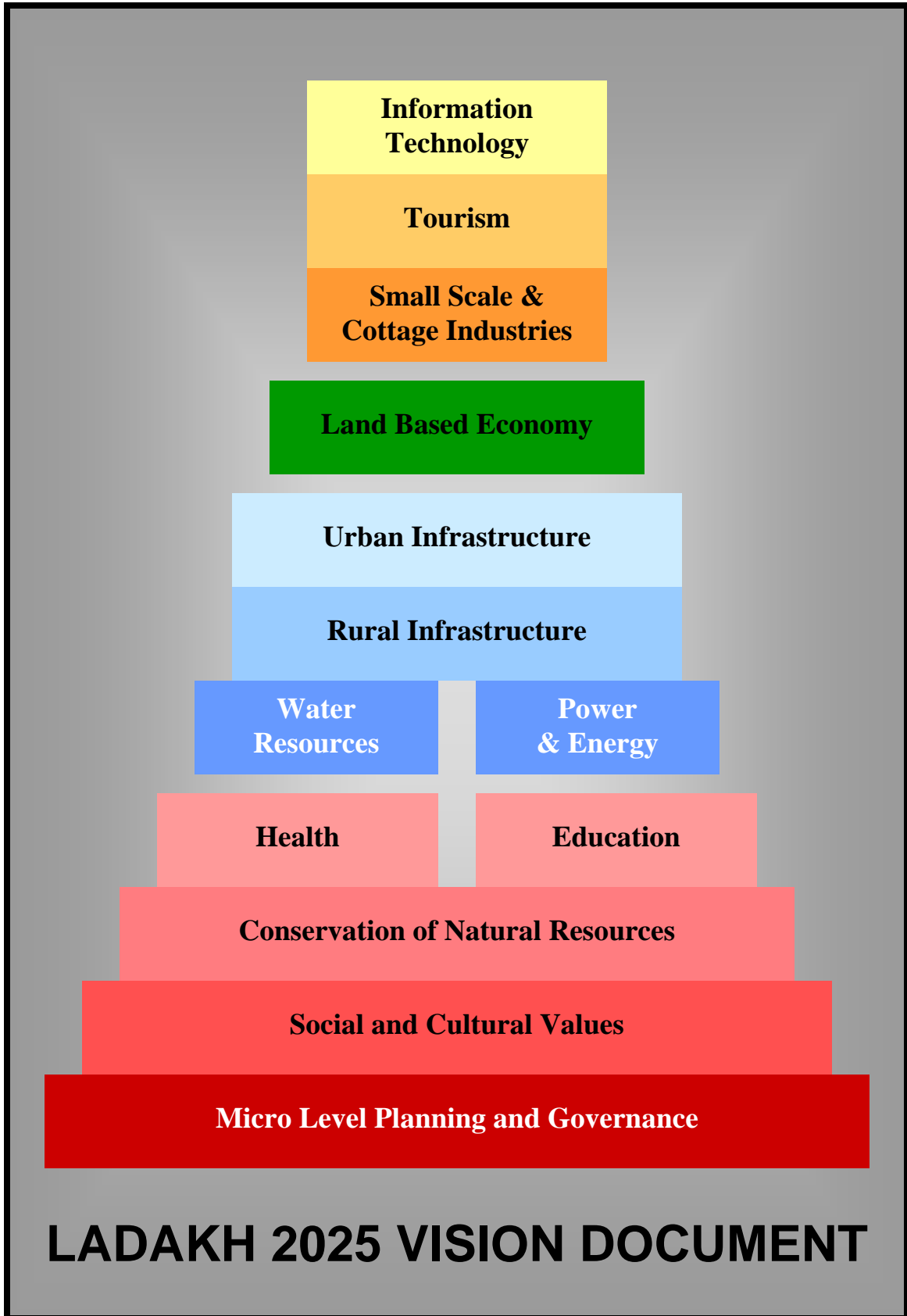
This document contains thirteen chapters, each of which covers a specific sector or theme in Ladakh. The chapters are written in a uniform format such that most of them are four pages in length, and have the following five sections:

- i) Chapter summary
- ii) Importance of the sector for Ladakh
- iii) Current status & problems of the sector
- iv) Vision statement
- v) Strategies

For those that wish to glance quickly through the document, several options could be tried depending on the time available to the reader:

- Option 1 - Reading the Executive Summary
- Option 2 - Reading the chapter summary at the beginning of each chapter
- Option 3 - Reading the bullet points mentioned under every strategy heading

Of course, the best method to get familiar with the document is to read it completely from cover to cover – an exercise that will not take very long.



INTRODUCTION

Ladakh has always been called the crossroads of High Asia – a place where East meets West, and where weary travellers on the Silk Route paused for a brief respite from their perilous journey in days gone by. Today however, Ladakh itself stands poised at a metaphorical crossroad in its own history, and it must forge a new direction for its future generations. This Vision Document is a road map for doing precisely that.

‘Why does Ladakh need a Vision at all, and why does it need it now?’ is a question that many may ask. The answer to that question is simple. Cut away from the rest of the world for most of the year till as little as forty years ago, Ladakh today faces unprecedented challenges to reinvent itself and its traditional society so as to better fit into the mosaic of the modern world. At the same time, it has a need to retain its unique identity by keeping alive the essence of the traditions and culture that were passed down to it by the earliest generations of Ladakhis. A fine balancing act is therefore required, and a Vision is thus imperative.

Not only that, Ladakh’s fragile ecology has also been under tremendous strain in recent years, largely due the pressures of mass tourism that this region has been subjected to since the 1970s. As a result, pollution and scarcity of natural resources are becoming increasingly common in present day Ladakh, with certain indigenous species of plants and animals even becoming endangered. The Ladakhi eco-system is a fragile one, and has been in balance for the past hundreds of years only because the original inhabitants of this region lived in perfect harmony with their surroundings and espoused a lifestyle based on contentment and sustainability. If we do not take urgent steps to remedy the situation then it may soon be too late. For this reason too, a Vision becomes essential for Ladakh today.

The overall Vision and Value Statements that we have adopted for Ladakh are as follows:

Vision Statement

By 2025, Ladakh will emerge as the country’s best model of hill area development in a challenging environment, with its sustainability embedded in ecological protection, cultural heritage and human development.

Value Statement

Ladakh will be seen as an ideal society geared towards economic self-reliance, full employment and enhanced quality of life for its people, with equity, social justice, rights, peace and freedom, and focus on vulnerable and marginalised sections.

It is our earnest endeavour to transform Ladakh into the ideal society that has been reflected in the above statements. In order to do so, the formulation of this Vision Document is the first step.

CHAPTER I

LAND BASED ECONOMY

Chapter Summary

The land-based economy of Ladakh – essentially comprised by its agriculture and livestock husbandry sectors – is under siege today. With more and more employment avenues open to the local people today in the form of the army, tourism and government jobs, their need to depend on the land-based economy is decreasing with every passing day. However, this euphoria could prove to be extremely short lived. Due to a variety of reasons, the current boom that Ladakh is experiencing cannot be considered sustainable, and as a result the attitude of nonchalance towards the land-based economy that most Ladakhis now-a-days sport could cost them dearly.

There is an urgent need to lift the land-based economy out of the morass in which it finds itself today in Ladakh, and make the region more self reliant like it used to be. In order to do this, a key requirement is to make land-based occupations more remunerative and economically rewarding. At the same time, local capacity must be built (particularly in the sphere of entrepreneurship) to help locals tap the commercial possibilities of this sector. The conservation of natural resources supporting the land based economy and a move towards increased cooperation between the various stakeholders that are a part of it could be adopted as additional measures. Most importantly however, Ladakh must take remedial steps to reduce its dependence on the outside world for critical requirements such as food – a phenomenon that has reached alarming levels today.

The Basis of Ladakh's Traditional Life

For hundreds of years, Ladakh was a remote kingdom that remained cut off from the rest of the world for most of the year. Its climate was harsh and resources scarce, making even basic existence in the region a challenge. Yet, Ladakh is home to a unique lifestyle and culture that has not only survived this hard land but come to thrive in it. How did the earlier generations of Ladakhis manage to bloom and prosper in an environment considered to be hostile and barren by most people...? Quite simply, by learning to make the best possible use of their natural resources in a sustainable manner. To be more specific, it was on the rock-like foundation of their land-based economy that the earliest Ladakhis built the edifice of their rich traditional heritage.

Broadly, there are two main sectors that constitute Ladakh's land-based economy: Agriculture, and Livestock Husbandry. Though Ladakh has now been integrated with the outside world for almost four decades, the importance of the land-based economy has not diminished for its people. The main reasons for this are centered round concerns of food and nutritional security, sustainable employment and the preservation of Ladakh's traditional identity. In addition, the great commercial potential of this sector that is currently lying untapped is also a major cause for its continuing relevance in this region.

Current Status & Problems

The land-based economy is in a general state of decline in the entire Ladakh region today. People are leaving the sector in droves, and things have come to such a pass that there is now a shortage of local workers in the villages during the agricultural season. Even the residents of Changthang – traditionally nomads and therefore heavily dependent on livestock rearing for their livelihood – have started washing their hands off this sector.

The main problems associated with the land-based economy in Ladakh today are:

Excessive Dependence on Others

Ladakh is getting excessively reliant on the outside world for critical needs such as food. In the case of clothing and horticultural products also, the situation is pathetic. Currently, more than 60% of the region's food requirement is met by means of the government sponsored public distribution system (PDS), cooperatives and commercial traders. Moreover, in the next 25 years, Ladakh's food requirement (currently at 2,33,160 quintals) is set to rise by more than 70% (estimated requirement in 2025 will be 3,96,412 quintals). If things are not remedied soon, Ladakh may find itself in dire straits.

People's Lack of Interest

Most Ladakhis today are disinclined towards working in the land-based economy. Even the authorities have not given this sector the attention due to it in the past, in terms of fund allocation. The many new avenues of employment that have become available to Ladakhis in recent years (army, government, tourism etc) have made the prospect of working in the land-based economy less inviting. The main drawbacks that are perceived by the people with respect to the land-based economy are that a) it requires hard physical work which is often not compensated by adequate returns, and b) it is not remunerative in its current state and barely takes care of subsistence level needs. However, what most people fail to see is that the profusion of options available to them today (buoyed by which they look upon the land-based occupations with disdain) may not always remain. Jobs in the army may, for instance, reduce drastically if relations between India and its neighbours improve.

Depleting Natural Resources

The natural resources that support the land-based economy are themselves deteriorating rapidly in Ladakh. Soil is getting eroded due to the incessant mining of this precious resource, most often to meet the demand for bricks in Ladakh's booming construction industry. Similarly, water resources too (especially glaciers) have been receding for the past many years, purportedly due to the effect of global warming. Perhaps most importantly, pastures have been severely neglected in Ladakh (especially in the Changthang region and certain villages where they have been encroached upon) resulting in poor forage availability for livestock. This in turn is largely because of the lack of proper irrigation facilities, and has put a severe constraint on the development of the livestock industry in the region.

Co-management Issues

There is a lack of co-management between the various stakeholders connected with the land-based economy in Ladakh. This often results in unnecessary clashes between departments that should ideally be working in tandem (such as livestock husbandry and wildlife preservation). There is also a need to involve the common people of Ladakh in co-management exercises, since it is they that are the real stakeholders on the ground.

Vision Statement

A self reliant Ladakhi community that meets its most critical requirements from its own land-based resources, by tapping them in a sustainable manner that blends traditional practices with modern scientific techniques, and gives due respect to the conservation of the environment.

Strategies

The land based economy sector has so far not received the importance it deserves. If the goals of sustainable and equitable development of Ladakh, envisioned in this Document, are to be realized, this sector must be given top priority.

The Vision document is envisaged with the concept of Self-Reliance rather than Self-Sufficiency. Ladakh has many land based commodities that are more advantageous and provide sufficient scope for value addition and commercialization. This will improve our people's financial capacities and in turn can manage deficit quantities of other essential commodities. Such a system has been an integral part of Ladakh's ethos and historical excellence.

Strategy I - Make Ladakh Less Dependent on Outside World

- Strengthen Ladakh's traditional system of agriculture and livestock production
- Incorporate appropriate scientific technology for increased productivity

To realise the first objective, we must maintain our social, ethnic and cultural values while at the same time adopt appropriate modern technologies (such as small efficient machines). Livestock husbandry must be made an essential component of agriculture as it used to be in days gone by. Diversified farming (incorporating different kinds of plantations and animals) and organic methods such as compost making must be encouraged so that farmers' risks are spread out and the fertility of land is also nourished. The service exchange systems (such as *Lhangde*, *Bess*, *Bonglud*, *Raress* and *Baress* etc) that were such an integral part of our traditional life must be revived to their earlier levels. In future, perhaps we could make an inventory of all our indigenous production systems and knowledge, and set up a gene bank for plants and livestock unique to this region.

The second objective could be achieved by bringing more land under cultivation in Ladakh, by taking such measures as commissioning new irrigation projects, making all completed irrigation projects fully functional, distributing land among people on the condition that it will be developed within a given time frame, and extending financial and other assistance for the development of land. However, it may be mentioned here that fresh irrigation projects should only be undertaken after a proper study has been conducted on their feasibility, including a strong participatory component involving the common people as part of the appraisal.

Intensive cultivation techniques must be embraced (such as the use of high yielding variety HYV seeds and double cropping) and practices such as crop rotation, crop selection, integrated pest management (IPM) and vermiculture must also be integrated into traditional Ladakhi agriculture. The use of greenhouses should be encouraged (especially as demonstration projects to establish their commercial and scale-up possibilities) to grow vegetables in the winter months and thereby prolong the agricultural season. Also, biomass production should be increased through pasture improvement and forage development. Adoption / identification of area-specific plant and animal potential resources for commercialisation, adopting new technologies for value addition, and human resource development with a strong marketing set-up can lead the district towards self reliance.

To raise productivity in the specific sphere of livestock management, zoonotic diseases must be guarded against and the sizes of herds should be optimized in order to make livestock rearing more economical. Herd insurance would be an added measure to safeguard the interests of the animal husbandry community. Ideally, pashmina production in Changthang should be raised to 65000 kg and in the rest of Ladakh to 6000 kg by the year 2025. Successful technologies from other cold arid regions should also be studied and replicated in Ladakh to achieve all the goals mentioned.

Strategy II - Revive People's Interest in Land Based Economy

- Build human resource among the local population
- Promote land based entrepreneurs

Human resource can be built among the local population with respect to the land-based economy first and foremost by organising an awareness campaign about the importance of agriculture and livestock husbandry, especially for the benefit of the farming community in Ladakh. Further, training programmes for skill improvement and capacity building and community organisation exercises should also be organised. Schools should include projects based on agriculture, horticulture and livestock husbandry in their curriculum, so as to foster an interest among local children in the land-based economy from an early age.

The promotion of land-based entrepreneurs can be taken up by encouraging community organisations (such as producers' groups and self help groups etc) as well as individuals to undertake value addition activities (such as processing, packaging etc.) that fetch a

premium in the market. Special trainings for entrepreneurs, assistance in the form of credit, marketing and support prices, and support to NGOs to supplement government efforts in this regard on the ground – these could be looked upon as additional measures to rejuvenate the people’s participation in the land based economy. All such programmes will create employment avenues of sustainable nature.

Strategy III - Make Land Based Livelihoods More Remunerative

- Enter untapped land-based sectors, and improve quality in existing fields
- Organise a sustained marketing initiative
- Encourage the use of modern scientific methods in the land based economy

Unexplored avenues in the land-based economy such as seed production, floriculture (off season cut flowers, bulbs) and herbal, medicinal, aromatic and wild edible plants should be explored. The market for fruits and vegetables in Ladakh’s remote areas (such as Changthang) should also be tapped. Not only will this get additional revenue, but will also lead to a reduction in nutritional deficiencies that cause serious diseases those areas such as scurvy and eye problems. Product quality should be improved to further enhance the commercial potential of area-specific land-based sectors. This is particularly so in the case of livestock management, where quality can be improved through such procedures as selective breeding, germ-plasm exchange, selective mating and provision of good quality jersey bulls. Popularisation of cottage and small-scale industries particularly based on livestock products should be one of the policies.

There is also a need for a ‘Ladakh Agriculture / Horticulture / Livestock Husbandry Perspective Plan’ to be developed, aimed at harnessing niche opportunities and promoting high value land-based products. Horticultural crops yielding more competitive advantaged commodities should be taken up on commercial scale with concentrated efforts and a gradual shift brought about from agriculture to horticulture in the future land use pattern.

To build a strong marketing initiative in support of the land-based economy, block level and district level ‘mandis’ should be created for land-based products. Cooperatives with strong networks within and outside the district should be promoted. Grading and packaging activities should be undertaken at the block level, and both the training as well as the materials for such activities should be taken care of. Markets in large metros like Delhi, Chandigarh and Srinagar should be tapped, through such agencies as the HPMC (Horticulture Produce Marketing Corporation), cooperatives and mandi dealers. Transport facilities should be organised, firstly to get products from far-flung areas in Ladakh to marketing centers, and then to send these products outside the district (using refrigerated vans and air freight if required). The introduction of national and international companies into the region to buy our local land- based products (such as seeds for instance) could also be explored. Finally, a special drive exclusively for the promotion of horticultural products (such as apricots and seabuckthorn) would also be appropriate.

Coming to the incorporation of modern scientific methods into the traditional land based economy of Ladakh, this should be achieved firstly by encouraging the use of small efficient machines such as reapers and mini-threshers into indigenous Ladakhi agricultural practices. Plant and soil-testing facilities and seed multiplication farms should be established, and the use of information technology and extension education should be explored fully for the development of the land-based economy. The availability of cold storage facilities in each block and at the district head quarter level will be an additional step in the right direction. Since Ladakh covers 87.4% of the cold arid region of the country with 12.4% in Himachal Pradesh and approximately 0.2% in Uttranchal, a Central Institute for Research in Cold Arid Eco-Systems also needs to be established in Ladakh to provide research support, which could lead to the establishment a deemed university in years to come.

Strategy IV - Conserve the Environment

- Preserve pastures
- Protect water, trees and soil

Under this head, the preservation and improvement of pastures is an issue of the utmost importance in Ladakh today. Consequently, the tapping of hydel, solar and thermal power for irrigating pastures needs to be looked into immediately. Sprinklers should also be tried as an irrigation option for pastures, at least on a pilot basis. Other ways of increasing moisture content in pastures would include diverting the normal flow of streams and rivers, drawing out diversion canals from rivulets and lift irrigation schemes.

Pastures could also be rejuvenated through seed collection, re-seeding of selected native species, and by planting drought tolerant species of grasses and trees. The promotion of riparian vegetation would be a connected strategy. Fodder production at the family and community level could be another way to protect livestock during emergencies (such as natural calamities). The establishment of seed dispersal enclosures could also be tried, and the production of malilotus and alfalfa (particularly in command areas) will also be helpful in improving soil fertility and forage production. Irresponsible actions such as driving vehicles through pastures will have to be strongly checked. Perhaps even a redistribution of land holdings could be envisaged in order to make irrigation projects useful on the ground.

To reduce undue pressure on winter pastures, traditional migration patterns should be revived and conditions should be created for extended stays at summer pastures, both for herders and livestock. Competitive grazing should be discouraged in the larger interest of pasture preservation. Traditional arrangements such as the 'tsabkak' system should be revived to protect pastures

With respect to the conservation of water resources, protecting available sources such as snow and natural glaciers must be taken up on priority. The creation and maintenance of new artificial water bodies (such as artificial glaciers, reservoirs fed by water harvested from seasonal nallahs etc.) should also be encouraged. The economic reorganisation of a few existing departments is an additional option, and the creation of a full-fledged

department for the purpose will not be inappropriate. Research inputs on prime issues like water and snow conservation from a reputed institute could be a further important step towards conserving water in Ladakh.

The conservation of trees also needs to be paid attention to in Ladakh. As part of this endeavour, community woodlots should be raised, and individuals too should be encouraged to plant trees. There should be selective and priority driven plantation of timber. Establishing juniper nurseries and checking the harvesting of juniper for ritualistic purposes are other measures that should be adopted. Encouragement of public and private sectors for establishment of nurseries of medicinal and aromatic plants and commercial cultivation will help in conserving the endangered and threatened plant resources.

As part of a drive to conserve soil in the region, operation oriented soil conservation initiatives, an integrated watershed development programme for soil conservation, and pilot projects on soil conservation should be taken up. . Some form of legislation should also be introduced to discourage or completely ban construction on agricultural land beyond a point, in all of Ladakh. In this connection, a Floor Area Ratio (FAR) will have to be worked out in Ladakh, which will not only reduce the unchecked expansion of construction but will also discourage vertical additions to buildings beyond a point. In addition, desertification should be restricted by stabilising sand dunes. Also, shelter belts / windbreaks should be encouraged in a participatory manner.

Strategy V - Encourage Co-management

In order to bring about a more cooperative environment in which to develop Ladakh's land-based economy, the establishment of co-management principles between the various stakeholders in this sector is a critical requirement so that there are no contradictions.

In this regard, all stakeholders should sit across the table and discuss their differences openly so that a common programme may be arrived at that addresses all involved parties' concerns. As an example, if there are any disagreements between two departments with respect to their duties, they should discuss their grievances with each other so that clashes in the field may be avoided and they do not undo each-others' work.

Co-management is an idea that has gained increasing popularity in recent years. Not only is it being practiced in other hill areas of the world, but there has been a sustained initiative to introduce it in Ladakh as well. It will not be surprising at all if this idea gains even greater currency in time to come.

CHAPTER II

INFORMATION TECHNOLOGY

Chapter Summary

Information Technology (IT) is one of the most promising sectors in Ladakh today, with potential to grow exponentially in years to come and generate quantum dividends for the region if tapped in the right manner. Since the sector is a relatively new one in the area, there aren't many problems associated with it, yet. At most, one could say that infrastructure facilities are not adequately available for its development and that there isn't sufficient focus on it at the time of allocation of funds in the local government's budget. However, the need of the hour is not to ponder on the problems of the IT sector in Ladakh. Instead, it is to realise the potential role that the sector can play in the development of Ladakh, and then start working towards realising it with the greatest possible urgency.

Using IT to enhance connectivity in Ladakh, generating jobs through the IT sector, utilising IT as a tool to better the lot of the common man through such measures as e-governance, establishing useful IT enabled services like telemedicine, distance education and information portals, and developing state-of-the-art institutions dedicated to the cause of IT in Leh – these are some of the key thrust areas that need to be concentrated upon. Clearly, in the process of Ladakh's development, Information Technology is a sector whose time has come.

The Flagship of the New Ladakhi Economy

The IT sector enjoys a place unlike any other in the modern world. It has been the biggest change agent of the past century and is considered the chief determinant of the progress of nations today. In India, it covers every aspect of modern life and has been encouraged by the government through its recent IT-friendly policy.

Given these developments, Ladakh would do well to stay in step with developments in the IT sector. Being the one industry that is not based on natural resources, IT presents Ladakh with the ideal opportunity for its development. Also, the prospect of generating additional employment opportunities from the IT sector (in the face of reducing opportunities from sectors such as the army and government) is an extremely realistic one that could be realised without much trouble.

IT can also be used effectively in Ladakh in several fields that are important for this region's development, such as e-governance, connectivity with the rest of the world, computerisation of all records and data, micro-level planning using Global Information Systems (GIS) and District Planning Software (DPS) facilities, and education. Due to all of these reasons, the IT sector assumes great importance for Ladakh.

Current Status & Problems

The NIC (National Informatics Centre of the Communication and IT Ministry, Government of India) is the nodal agency for IT in Ladakh. At the block headquarter level, Community Information Centres (CIC) of the NIC are the main institutions.

Being a new sector, IT hasn't really developed to a stage in Ladakh where one could produce an exhaustive list of problems that it is beset by. Indeed, the sector is just in its infancy, and hence it is a little premature to talk about the obstacles in its way at this moment. A more appropriate theme would be to ponder on the untapped potential of the IT sector in Ladakh. Still, if one were to get down to it, the following could be considered the main 'problems' before IT in Ladakh today:

Unavailability of Trained Manpower

The IT industry in Ladakh today is terribly strained for trained professionals. This is especially true in the case of lower management positions, both within the department itself as well as outside it.

Lack of Awareness

The local population in Ladakh is still largely ignorant about the importance of IT and the role it can play in the development process. This is not restricted to just illiterate people living in villages. Even reasonably educated individuals and those in positions of eminence are yet to grasp the significance that the IT sector holds for Ladakh.

Inadequate infrastructure facilities

The scarcity of power is perhaps the most serious obstacle in the way of using IT facilities effectively in Ladakh today. However, there are smaller problems that are significant too. One of these is the lack of buildings to house IT facilities in. Even the NIC doesn't have a proper place from where it can discharge its duties.

Absence of Focus

Perhaps most importantly, there is an almost complete absence of focus on the IT sector in policy circles in Ladakh today. As a consequence, less than 1% (0.7% to be precise) of the Hill Council's annual budget outlay is given to the IT sector.

Vision Statement

To enable Ladakh to fully tap the potential of the Information Technology sector, by especially emphasising the use of IT in such key sectors as employment generation, economic growth, planning, connectivity and entrepreneurship.

Strategies

Strategy I – Bolster IT Infrastructure

- Establish an IT Promotion Centre, an STPI unit, an IT Convention Centre
- Set up WAN facilities, improve bandwidth
- Rejuvenate the IT task force committee
- Develop Leh as a cyber town

There is a great need to set up several institutions in Ladakh dedicated to spreading awareness about and usage of IT in this region. The first in this series would be an IT Promotion Centre / IT Park, the focus of which would be on disseminating IT related education, providing IT solutions (both in software and hardware), and giving a good work environment to IT professionals on a commercial basis. There would be residential and recreational facilities available in the IT Park as well. A Software Technology Park of India (STPI) should also be set up in Leh. With its good connectivity, an STPI will boost e-commerce activities, especially related to the tourism industry (cyber cafes, advance online bookings etc). In future, it could also serve as a hub for more serious IT activities in the region such as software exports and business process outsourcing (BPO).

Another component of essential IT infrastructure that should be set up in Leh would be an International IT Convention Centre, with facilities to host IT exhibitions, seminars and conferences.

Coming to more basic requirements, Wide Area Network (WAN) connectivity should be established to ensure connectedness between the government and the common people up to the block level. Also, the current status of bandwidth in Ladakh should be improved, since it is the basis on which all IT activity can progress in the region.

Ladakh should also develop its own IT policy – a goal that can only be fulfilled if it is backed by a high-powered policy-making body that can take quick decisions. In this regard, an IT task force committee was in fact constituted some time ago by the Hill Council, but it is in serious need of being rejuvenated and revived today.

In addition, Leh should be developed as futuristic cyber town, so as to give a free hand to the development of the IT sector in it. Consequently, it should be equipped with energy conserving and environmentally friendly architecture, inbuilt connectivity and bandwidth, excellent transportation facilities and logistics, a strong focus on IT education, and an ideal networking environment for investors, entrepreneurs and academics.

Strategy II – Use IT for Common People's Benefit

- Set up Community Information Centres (CIC)
- Establish village infotainment facilities (Internet Kiosks)
- Construct a Ladakh relevant website and online central information database

Community Information Centres (CICs) should be set up in all the block headquarters of Leh district. Currently, three block headquarters (out of a total of six) have already been covered under this initiative. The centres should provide local people with internet access, market and e-commerce related information, access to socio-economic databases, information about the weather, e-governance and e-education facilities, tender and employment notifications etc. To ensure that locals make full use of this facility, training them in the fundamentals of using computers at the village level is the need of the hour.

To make matters more convenient for farmers and citizens in general, it is imperative to create an intelligent interface between the people and the government at the community level in the shape of Internet Kiosks. This facility will serve to provide a wide spectrum of citizen-friendly services at a single place and save people the trouble of running around various departments at the block, tehsil, sub-divisional and district level.

A web-based central information system should be created that contains locally relevant data about Ladakh (history, geography, culture, natural resources), agriculture and related sectors. Such an integrated system of information will go a long way in promoting tourism, agriculture, education and research activities in Ladakh.

Strategy III – IT Enabled Services: Spread the Potential of IT to Other Sectors

- Use IT for micro-level planning and e-governance
- Integrate IT with work in disaster management, health, education
- Take IT into the remotest corners of Ladakh with a Mobile IT Van

IT is one of the most efficient and effective tools for planning and decision making in a decentralised atmosphere. With the formation of the Ladakh Autonomous Hill Development Council and the emergence of Panchayati Raj institutions in Ladakh, the process of decentralised and participatory planning is already in full swing in the region. The need of the hour is to make full use of IT to provide the statistical and planning tools that will be necessarily required for such an approach.

In the same vein, IT has become an integral part of governance today and should be viewed as a tool that helps to deliver services to the common man at his doorstep, both in the public and private sector. Ladakh should stay in step with this revolution and take all necessary measures to encourage e-governance norms in the region. This would include computerisation of all office records, efficient transaction between various government departments, using websites and portals to bring the administration closer to the people, and making e-file processing a possibility.

Emphasis must also be given to IT enabled services that can be used in such fields as disaster management (data collection, forecasting, post-disaster management), health (telemedicine facilities) and education (distance learning). A mobile van fitted with the VSAT auto tracing satellite facility should be procured by the IT department, which will help establish internet / voice / video conferencing connectivity with the remotest corners of Ladakh.

CHAPTER III

TOURISM

Chapter Summary

In the new monetary economy that Ladakh has been thrust into ever since it was opened up to the outside world in the mid 1970s, no sector is more prominent than tourism in the current scenario. Even today, when barely the surface of the sector has been scratched, thousands of people in the region earn their livelihood from tourism related activities. The unique geo-climatic and topographical conditions of Ladakh serve to make it a destination unlike any other in the world, thereby attracting tens of thousands of tourists to it every year.

If tapped in a sustainable manner and with a proper marketing initiative to support it, the tourism industry could serve to transform Ladakh's fortunes with unprecedented economic prosperity. The challenge is to enhance the infrastructure facilities that support tourism in this region, so that the full potential of the sector can be harnessed. In this regard, the provision of roads is an especially urgent concern, as is the setting up of facilities in such fields as telecommunications, medical help and emergency evacuation services. There is also a great requirement to set up an institute for professionally training locals in hospitality management. However, one must not forget the need to preserve the environment and Ladakh's traditional values and culture as well, in this entire milieu.

New Opportunities for an Ancient People

The most significant advantage of the tourism sector in Ladakh is that it helps to provide the people of this region with greater economic opportunities. With every passing year, more and more tourists come to Ladakh (close to 25000 in the year 2005) bringing with them a supplementary source of income and livelihood for thousands among the local population. Tourism has therefore come to assume an exceedingly important role in sustaining the Ladakhi economy, especially over the past ten years.

Besides, Ladakh being a resource-poor area generally presents itself as a disadvantage for Ladakh in most fields, but in the case of tourism it proves to be a beneficial factor. Our unique barren landscape makes Ladakh a much-sought-after tourist destination, and helps us utilise the deprivation of resources that this region faces to our advantage. Tourism can hence be seen as an opportunity to make the best possible use of the available resources in this region.

In addition, the people of Ladakh are not trained to enter most professional fields as yet. Given this scenario, the existence of a sector like tourism (which provides them with an easy opportunity that they can tap with their current skill and tradition of hospitality) can only be considered a boon for the region. For these reasons, the importance of tourism in Ladakh is immense.

Current Status & Problems

Tourism today generates jobs for Ladakhi people in the thousands. There are 79 hotels and 257 guesthouses registered with the Department of Tourism in Leh, with a double bed capacity of 5407. This is a 260% rise in bed capacity over the past thirty years. On an average, a hotel earns Rs.8.8 lacs per season, while a guesthouse earns Rs.43000 during the same period. It is also said that a Hotel room generates three direct jobs and six indirect jobs. At present roughly 25% of Leh district's population is said to be involved in this sector directly or indirectly. Generally, the tourist season extends from mid-May to mid-September for roughly four months in a year.

The main problems that the tourism industry in Ladakh is currently faced with may be broadly classified as follows:

Inadequate Infrastructure

To begin with, accessibility to Ladakh itself is difficult due to its landlocked and almost year-round snowbound status. The only way to get here is by air, and not all tourists can afford that. Accessibility to certain places of tourist interest within Ladakh also (like the Tso-moriri lake, for instance) is poor, making it difficult for visitors to travel to them. Better roads are therefore the first infrastructural need in Ladakh with respect to tourism, both to get to this region as well as to travel within it.

Accommodation problems are the second most bothersome aspect of their stay in Ladakh for many tourists. This is especially true in remote areas where even basic lodging facilities are not available.

A host of other facilities such as petrol pumps, telephones, email connectivity and medical help are also conspicuously inadequate in Ladakh. The lack of proper telecommunication facilities is an especially glaring gap in the system since many tourists that come to Ladakh go for treks to remote areas, and there are hardly any facilities for quick transfer of information and evacuation in the unfortunate event of a mishap.

A key drawback in the current tourism set-up in Ladakh is that it is restricted only to the summer season, and even then the bed occupancy rate is a mere 30%. The fact is that we are not tapping our tourism industry to its fullest potential, and this too is due to a lack of adequate infrastructure facilities.

However more might not necessarily be better. There needs to be a scientific assessment of how many tourists Ladakh can handle without getting into other social and environmental problems that many other tourist destinations in India have gone through.

Lack of Professionalism

Ladakh's tourism industry started in rather an ad hoc manner, when the region was opened up to the outside world in the mid-1970s. Though there has been significant progress made since then in the field, not much organised planning has gone into the initiative. Even today, things have changed little in this regard, and the industry continues to be run from the gut. The consequence is that except for a few gifted individuals, the hospitality industry in Ladakh is generally being operated by untrained people. What is especially worrisome is

that despite the state of affairs just described, there is still no institute in Ladakh where the local people can be trained in professional hospitality management.

Limited Community Based Tourism

Though community-based tourism is being practiced in certain pockets in Ladakh, the concept hasn't come up as widely as it was expected to. The benefits of the tourism industry are still concentrated mostly in and around Leh.

Negative Influences

Finally, many of the tourists that come to Ladakh do not act responsibly towards the fragile environment of this region. They directly or indirectly cause littering of the streets, valleys and mountains, and often bring other bad habits with them to the region too such as the use of drugs, alcohol, and intoxicants. This poses a great threat to the people of this region (and especially Ladakhi youngsters) who may get carried away by what they see and prove to be easy victims for such influences.

Vision Statement

To connect tourism to the unique topographical advantage and cultural heritage of Ladakh without endangering its fragile eco-system, while at the same time cautiously scaling up tourism to contribute to the economic and social well being of the people of this region.

Strategies

Strategy I – Improve Infrastructure

- Conduct an assessment of the carrying capacity of Ladakh
- Discover new treks, construct new roads
- Improve garbage disposal and sanitation facilities
- Ensure quick evacuation services in case of emergencies
- Provide facilities for tourists to stay in winter season

First of all there should be a thorough assessment of carrying capacity of the land and the people. Then as part of a drive to improve the infrastructure facilities in Ladakh with respect to tourism, the first area that needs to be tackled is obviously new roads and new treks. In certain areas where the construction of a road may lead to reduction in economic activity (such as trekking routes), the decision for constructing a road in the area (or not) must be given to the people living there.

Garbage disposal and sanitation facilities should also be improved substantially in all of Ladakh and especially in Leh. Quick evacuation services (including helicopters) would be a welcome addition to the existing infrastructure for tourism in Ladakh.

There should be provisions for tourists to stay in Ladakh throughout the winter season if they so desire. In this regard, solar heated hotels and guesthouses should be encouraged, and even be supported by the government to some degree. Apart from attracting tourists because of their comfortable and warm living conditions, such establishments would also

serve to set an example in the use of renewable energy in Ladakh – an idea that needs to be greatly encouraged in this region.

Strategy II – Build Local Capacity

- Set up a specialised institute for professional training in hospitality management
- Encourage local arts and crafts especially through the market for souvenirs

As mentioned earlier, there is an urgent need to impart professional training in the hospitality industry to the local people of Ladakh. In this connection, it is proposed that an institute be established for Tourism Management, which should be integrated with the J&K state tourism set-up.

Additionally, local arts and crafts should be encouraged especially through the souvenir market. Currently, hardly any Ladakhi artifacts are available in Leh’s own market or in the J&K emporiums located across the country.

Strategy III – Encourage Community Based Tourism

- Decentralise tourism infrastructure to villages
- Avoid large 5 star chains in Ladakh
- Remove all except the most necessary permits

The tourism industry needs to be decentralised from Leh to the villages of Ladakh. In this regard, appropriate infrastructure (such as home stays, roads, and well-stocked shops) needs to be made available in Ladakh’s rural areas.

Further, 5 star chains (unless owned by Ladakhis themselves) should be generally avoided in Ladakh. Not only do such set-ups concentrate the benefits of tourism in a few hands, but they also provide their guests with very luxurious living conditions that might impose a severe strain on the fragile eco-system of this region.

All except those permits *necessarily* required owing to security concerns should remain in the system. Areas should not be declared restricted without sufficient reason.

Strategy IV – Expand the Tourism Package

- Market Ladakh as a tourist destination separate from J&K
- Tap the market for winter tourism
- Explore new packages; ancient trade routes, pilgrimage tourism, eco-tourism

It is clear that the tourism potential of Ladakh hasn’t been fully tapped so far. In order to remedy this situation and use tourism to the greater advantage of the region, it is required – first and foremost – to market Ladakh separately from J&K at international trade fairs. Similarly, embassies too should be told about Ladakh as an entity from J&K with respect to tourism.

The potential of winter tourism in Ladakh must also be unlocked. As mentioned earlier, solar heated guesthouses and hotels would be the first step in this direction. In addition,

monastic festivals should be restored to their original dates in the winters so that they draw more tourists during that time of the year. The Chadar trek should be encouraged. Adventure sports such as rafting and mountaineering should also be given greater support. There should be ice and snow games, ice and snow hotels, and ice and snow theme parks, perhaps one could be at Khardungla that lasts through the summer).

New options that could be explored to expand the tourism package currently on offer in Ladakh is that of reviving ancient trade routes, explore possibilities of tourism based on Nomadic lifestyle in Changthang, or medicinal plants in the mountains winter tourism, conference tourism or even pilgrimage tours such as the one to Kailash Mansarovar in China and. New trekking routes should be developed every year (at the rough rate of one per year), by employing professionals to survey the land and suggest sites for them. We could also look at marketing eco-tourism (including wildlife, plants, snow leopard sighting etc.) and conference tourism in Ladakh.

Strategy IV – Preserve Ladakh’s Pristine Beauty

- Promote Ladakh as an eco-destination
- Observe aesthetic values when undertaking new constructions
- Discourage display of religious and cultural rituals for monetary gain

To guard Ladakh against the depredations caused to its pristine landscape Ladakh should be promoted as an eco-destination. In this regard, vehicles should be converted slowly from diesel to petrol, and ultimately to CNG in the future. Taxi owners in particular should be encouraged to embrace this change.

In the same vein, organic food (both the production and consumption of it) should be greatly encouraged in Ladakh. Ladakhi Hotels could all go organic in the next 20 years. The preservation of agricultural land and use of modern compost toilets should also be greatly emphasized. These unique initiative might themselves make Ladakh a most desirable destination for discerning tourists. A green tax levied on all visitors to Ladakh and its efficient management in order to reduce the environmental impact of tourism could be a most progressive measure.

Secondly, we should ensure that no industrial landmarks are built around tourist attractions in Ladakh. Telephone and electricity wiring should be made underground. All new construction should be undertaken only after a ‘no objection certificate’ is obtained from the tourism lobby. Signboards should be such that they fit into the cultural backdrop of Ladakh. A human and natural history museum should also be set up at some point of time.

Lastly, the negative influences that are brought to Ladakh in the wake of tourism should be discouraged. In this regard, the display of traditional customs for commercial gains should be discontinued. Holding monastic festivals out of time simply to accommodate the convenience of tourists should be avoided. Young people should be taught to respect their cultural heritage, so that they do not get swayed by the “more attractive” lifestyle of the outside world.

CHAPTER IV

SMALL SCALE & COTTAGE INDUSTRIES

Chapter Summary

The small scale and cottage industries sector in Ladakh is a mine of untapped potential. Not only does it have within it the promise to generate all the jobs that Ladakh's unemployed youth will need in the coming years, it also has the capacity to produce significant monetary gains for those intrepid enough to enter this new sector. Blessed with a variety of resources such as apricots, pashmina wool, and exceedingly skilled craftsmen, Ladakh today stands poised at the threshold of generating a wave of economic prosperity for its people, unprecedented in history.

There are however several obstacles that stand between Ladakh and the rich bounty that its people can harvest by way of industrial development. Not least among these is the lack of entrepreneurship amongst the local population, which severely hampers their ability to dabble in this field. Other serious problems include infrastructure and technology issues, and Ladakh's harsh physical conditions themselves. The need of the hour is to overcome these difficulties and grasp the potential of the industries sector in Ladakh with both hands – a development that could prove to be of monumental significance for this region in years to come.

A Potential Engine for Ladakh's Economic Growth

With more and more Ladakhi youth getting educated outside the region today, unemployment is set to become the most imposing problem before Ladakh in the years to come. The greatest advantage of the industries sector is that it provides a way out of this impasse. If tapped in the right manner, it could generate all the jobs that Ladakh will need in the next twenty years, and beyond. That, in a nutshell, is why the industries sector holds such vital importance for the future of Ladakh.

Besides, the education of young Ladakhis often leads them to have higher aspirations from their jobs. Not only are government jobs not adequate to satisfy all the future employment requirements of Ladakh, but they also do not offer the kinds of salaries and perks that young people these days expect to get from their employers. Such aspirations can only be satisfied by private sector jobs of the kind that the industries sector can provide, once again making it crucial to the future well being of Ladakh.

Apart from the above, the potential for growing the industries sector in Ladakh is immense. Nature has provided this region with certain resources that can yield great commercial dividends e.g. apricots, pashmina wool and traditional handicrafts. The commercial promise that these products hold within themselves is perhaps the greatest reason why the development of the industries sector in Ladakh needs to be addressed on priority and treated as a major thrust area.

Current Status & Problems

The District Industries Centre (DIC) is currently the nodal agency for all industries related activities in the Leh district. Though it does much to try and promote the cause of industries in Ladakh (there are currently 900 registered industrial units in Ladakh and an industrial estate spread over 11.85 hectares), the sector is still a long way from capturing the imagination of the local population. This is because of a host of problems that the sector faces today, which may be summarised under the following four heads:

Physical Problems

Ladakh's remoteness and challenging climatic conditions pose significant difficulties in setting up industrial ventures here. The long and hard winter in particular acts as a deterrent against most prospective entrants into the industries field.

Socio-economic Problems

Under this heading, the first problem encountered in Ladakh is the lack of awareness among the local people about the importance of the industries sector. An attitudinal change is strongly required in the people of Ladakh, whereby they begin to look upon industry as a potential provider of employment opportunities and not an alien concept that doesn't belong in Ladakh.

The second and perhaps most important problem under this head is the almost complete lack of entrepreneurship and market orientation among the people of Ladakh, thus rendering them insufficiently equipped to survive the competitive environment that is a natural feature of the industrial sector. The scarcity of trained manpower and consequently high labour rates prevalent in Ladakh are also significant obstacles falling under the ambit of socio-economic drawbacks.

Technological Problems

Obtaining appropriate technology for an industrial unit in Ladakh is not an easy task. More often than not, machines that work well in other parts of the country and the world fail to function optimally (if at all) upon reaching Ladakh. The transfer of technology to the grass root level is another problem. Finally, there is no locally based research and development facility in Ladakh to systematically study the resources available in the region.

Infrastructure Problems

The infrastructural set-up in Leh can hardly be called good. Power shortage is a major problem here. So is the lack of proper communication and transport facilities in the region. At times of heavy snowfall, traffic comes to a complete standstill in Ladakh, and things can remain in this state of limbo for months on end – hardly an alluring feature for a potential investor in the region.

Vision Statement

To put Ladakh on the industrial map of the nation, and generate employment opportunities in the region by encouraging industries related initiatives that seek to tap locally available natural resources to the maximum, promote local arts and crafts, and produce world-class quality, while working within the overall framework of eco-friendliness, social equity, sustainability and balanced development.

Strategies

Strategy I – Build Local Capacity

- Foster entrepreneurship among locals
- Organise skill building initiatives

In order to foster a spirit of entrepreneurship among the local population of Ladakh, an intensive motivation campaign aimed at bringing about an attitudinal change in the people towards industries in general would be fitting. Programmes aimed at building the managerial capacity of local entrepreneurs and urging them to make full use of the natural resources of Ladakh (albeit in a sustainable way) would also be appropriate. Budding local entrepreneurs must be made to realise the importance of quality and competitiveness in the industrial sector. At the same time, the cooperative movement in Ladakh should be encouraged.

Skill Building is another area that needs to be taken up urgently in Ladakh. Traditional master craftsmen (in such fields as thangkas, frescoes, clay moulding, wood carving and copper works) should be encouraged to practice their skill, especially through the organisation of apprenticeship programmes under them. Alongside, modern skills that are required in present-day Ladakh also need to be encouraged, such as plumbing, welding and turning. The latter could be taught in vocational institutes.

Strategy II – Intensify Marketing Drive

- Evolve a market information gathering system
- Increase efforts to tap local and international markets

A market price/demand related information-gathering mechanism should be evolved, so that market friendly designs can be made and sold at the right price points. An emporium at Leh would do much to boost sales of traditional handicrafts items.

Once the local and domestic market is captured, Ladakh could also look at international markets and even form its own Export Promotion Council, should the need for such a body be felt. Trade fairs should be organised specifically to display Ladakhi products, and artisans should be given the necessary allowance for travelling to and from such venues. On no account must quality Ladakhi products have to suffer poor sales and prices owing to a lack of marketing efforts.

Strategy III – Improve Technology and Infrastructure Scenario

- Obtain the latest technologies for developing industry in Ladakh
- Conduct regular R & D exercises for product improvement
- Provide better infrastructure facilities, especially in rural areas

The latest industrial technologies should be obtained for Ladakh and then adapted to the unique conditions of this region. In addition, they should be integrated with traditional practices (such as vegetable and stone dyeing) in the region. Research and development activities must be regularly carried out for improving products. Also, provisions must be made for improved infrastructure both in urban and rural areas, such as solar community halls for winter handicrafts that can enable villagers to work throughout the cold season.

Strategy IV – Improve Institutional Support

- Hire trained managers for supplementing DIC's work
- Invite professionals for developing new product designs
- Improve the credit facilities currently available to entrepreneurs

Though not a problem area, the institutional support extended by DIC to industries in Ladakh could certainly be improved. In this connection, trained professionals (such as managers) should to be hired by DIC for supplementing their work. There should be frequent collaborations and interaction between DIC and professionals from places like the National Institute of Fashion Technology (NIFT) for designing and developing improved products. This would especially apply in the case of skill intensive products that fetch a premium in the market.

Better collaboration between DIC and financial institutions would also be a welcome development. Credit should be made available to budding entrepreneurs at lower rates of interest than it is now, with provisions for longer moratoriums if possible. Perhaps at some time in the future, a local Ladakhi bank (along the lines of a Citizen's Cooperative Bank) may also be established.

Strategy V – Environmental Conservation and Social Equity

- Emphasise use of renewable energy for industrial purposes
- Ensure natural resources are not harmed by industry
- Encourage geographically equitable development

Finally, social equity and respect for natural resources must be observed in Ladakh while pursuing industrial opportunities. In this regard, there should be increased emphasis on using renewable energy for all industrial purposes. Industrial regulations pertaining to environmental preservation must be followed strictly in Ladakh. Land and water must be protected from the harmful effluents of factories. Air, noise and other forms of pollution must be checked. There should be due attention given to geographically equitable development to arrest the rural-urban migration pattern lately witnessed in Ladakh.

CHAPTER V

URBAN INFRASTRUCTURE

Chapter Summary

Infrastructure, by its very definition, is a sector of critical importance for the development of any region. It provides the bedrock upon which all other activities can be carried out in a community. Given this fact, it is unfortunate that the infrastructure facilities currently available in Leh town – the capital of our district - are far from being ideal. While this sorry state of affairs can be attributed to a range of causes, perhaps the single, most important reason for the dilapidated condition of Leh’s infrastructure make-up is the increased population pressure that it has been subjected to in recent years.

Some of the specific fields in infrastructure that are in urgent need of upgradation / repair in Leh today are traffic and transport, housing, water supply, sanitation and waste management, and the provision of recreation facilities. Other problem areas include a general decline in the traditional character of Leh town in the face of relentless haphazard development, and gross negligence of the environment.

Perhaps the most important measure that is being proposed to take care of the abovementioned problems is to develop Leh along the lines of a zonal town-planning model. Alongside, the construction of new roads, a move to restrict unplanned development in Leh, and legislation to control construction on agricultural land beyond a point are some additional suggestions that being out forth in this document.

Enhancing the Quality of Life in Leh Town

That infrastructure is an important sector for the development of any area cannot be overemphasised. It is difficult to imagine an existence without the roads, sanitation works, public buildings, housing facilities, water supply mechanisms – the list is an endless one – which we see around us everyday. Indeed, it would not be incorrect to state that infrastructure provides the base on which all other sectors can then build their plans. As such, in any listing of critical departments, infrastructure will probably be among the first to be mentioned.

By ‘urban infrastructure’, one essentially means to refer to the infrastructure facilities of Leh town and its surrounding areas. Since Leh is the capital of the district and a nodal point for all developmental activities in the region, ensuring adequate infrastructure facilities for it is a matter of the greatest priority.

Also, tourism has now emerged as one of the sunrise sectors of the new Ladakhi economy. The development of tourism as a sector is critically dependent on the infrastructure facilities available in Leh town, thereby underlining the criticality of enhancing urban infrastructure in Ladakh once again.

Current Status & Problems

In a nutshell, current infrastructure facilities in Leh are woefully inadequate to meet the town's expected requirements over the next twenty years. In fact, they are not even adequate to meet its present requirements, and Leh seems to be bursting at the seams under the pressure. The main reason for this state of affairs is the far greater number of people that now depend on Leh town than it is designed to support. Some of the principal problems with respect to urban infrastructure in Ladakh are outlined below.

Inadequate Facilities for Growing Population

Owing to the sudden increase in the numbers of people dependent on Leh town over the past few years (caused by incessant rural-urban migration and an unchecked growth of population in the region), the infrastructure facilities in the town are crumbling under the pressure. This sorry state of affairs particularly includes the traffic and transport facilities in Leh, which are currently hardly able to meet the town's requirements. The lack of housing facilities is another big gap in the infrastructural make-up of Leh and many residents have to live in shanty-like slums for want of better options. New buildings required for setting up educational institutes are also conspicuously absent from Leh. Even basic recreation facilities and civic amenities (such as shopping complexes, clubs, parks and open spaces) are lacking for Leh's residents.

Apart from the above, the availability of water (both for drinking as well as agricultural purposes) is one of the most serious challenges before Leh today. What makes this problem especially pressing is that while even the current needs of Leh for water are not being fully met, the requirement for water in Leh is set to grow tremendously over the next twenty years. Drainage, sewerage and sanitation facilities are also inadequate in Leh, and a proper solid waste management system is missing too. Public conveniences (local or flush) are not available either.

Decline in Traditional Character

Recent development in Leh town has mostly been haphazard and unplanned. This has caused a host of problems to crop up, but perhaps the most serious among them is a steep decline in the traditional character of Leh. Groaning under the burgeoning pressure of illegal encroachments and general neglect, the famed Heritage Zone of Leh is falling apart. New buildings coming up in town do not follow an architectural code that is in line with traditional Ladakhi motifs, nor are they built with any thermal retentive capacity. Sites such as the cluster of automobile workshops in town are an eyesore, and blot out the traditional beauty of Leh.

Negligence of Ecology and Environment

Finally, somewhere along the path of developing Leh as an urban setting, we have forgotten to take sufficient care to preserve its environment. As a result, polluted air, dirty streams and open garbage dumps have almost become accepted features in Leh today.

Vision Statement

To provide the growing population of Leh town with modern civic amenities, while focussing on restricting the ever-increasing numbers dependent on it (especially by discouraging the rural-urban migration pattern), and also addressing its ecological and environment related concerns.

Strategies

Strategy I - Improve Current Infrastructure Facilities

- Better traffic and transport facilities
 - Adopt nodal town planning model
 - Construct new roads
 - Build new parking spaces
- Increase housing options
- Improve water supply
- Enhance sanitation and waste management systems
- Introduce recreation facilities

To improve the traffic and transport facilities currently available in Leh town, the first step that needs to be taken is to divide Leh into zones. Each zone so formed will have a node at its center, which will be self sufficient in most respects. In particular, each zone will have its own market so that the main market in Leh is decongested.

As part of the new roads initiative, several by-pass roads need to be created to restrict heavy traffic from entering Leh. The construction of internal roads for lateral connectivity between main roads (including a circular road in Leh) also needs to be taken up as per the town master plan. Specific road widening drives will also have to be looked at in certain cases. To further decongest the main street in town, it is proposed that an entry fee be charged from vehicles coming into Leh from outside areas, to discourage unnecessary traffic.

Coming to the improvement of parking facilities in Leh, a new bus stand needs to be built urgently at a suitable site. Similarly, a new truck terminal also needs to be constructed. The current taxi stand in the middle of town needs to be relocated and preferably merged with the bus stands.

As regards housing facilities in Leh, there is an urgent need to end haphazard development by bringing all public (Nazool) land under the control of the LDA / municipality. Further, two-three satellite towns should be developed that would be complete in all respects, with their own educational institutes, markets and recreation facilities. New housing facilities should also be built within Leh town itself. Most importantly, all new housing construction should be such that it gains maximum energy directly from the sun. Certain architectural guidelines should be evolved to achieve this

aim. Also, as far as possible, barren land should be brought into use for construction purposes and not arable agricultural land.

The need for drinking water in Leh in 2025 is likely to be 21,00,000 gallons per day. Currently, we only manage to supply 4,21,000 gallons of water per day to its residents. Of the requirement figure that we have estimated for the future, 7,00,000 gallons can be obtained simply by improving current systems. Another 3,00,000 gallons could be got from tapping waste water. The rest (11,00,000 gallons) will have to be met by either lifting water from the Indus (using hydro or solar power with DG sets for backup) or by tapping ground water with the cooperation of the local population. The water supply may be further supplemented by glacial melt-off from the Khardungla glacier, which we may divert to Leh by means of a tunnel.

To improve sanitation and waste management facilities in town, modified local dry toilets as well as flush toilets should be provided at suitable locations. Solid waste management systems should be set up in the town, whereby solid waste should be recycled before its final disposal. The recycling treatment could be done using biological or thermal methods that would yield some useful by-products. The final disposal of the waste could be done in a landfill site.

No settlement can be considered infrastructurally complete without proper recreation facilities for its residents. Under this head, Leh should have adequate parks and open spaces, shopping complexes, cultural centres such as museums and libraries, community centres, and pedestrian paths lined with flowering plants from Ladakh. The main bazaar should be made completely pedestrian and the entry of traffic restricted in it between 6 pm to 10 pm everyday (provided an alternative two-lane road is made available to vehicles to circumvent the market). Sporting facilities such as a stadium for ice hockey, cricket, and football should also be envisaged. Gymnasiums and playgrounds would be welcome developments too. The introduction of ropeways to popular sites in Leh (such as the Shanti Stupa and Tsemo Gompa) would also be appropriate.

Strategy II - Preserve Traditional Character

In this regard, the need of the hour is to evolve some architectural guidelines for constructing new buildings in Leh town. Also, the preservation of the Heritage Zone should be taken up on a priority basis. Workshops and similar industrial sites should be located at a reasonable distance from housing areas in Leh.

Strategy III – Conserve the Environment

In the end, the ecological development of Leh needs to be concentrated upon seriously. In this regard, trees should be planted on roadsides. Green belts (such as the one next to Zorawar Fort) should be preserved. To achieve this objective, at least 50% of the current agricultural land in Leh should be protected, for which a Floor Area Ratio (FAR) needs to be evolved and enforced through appropriate legislation so as to maintain the dual rural-urban character of Leh town. Pollution (air, noise etc) should also be strongly checked.

CHAPTER VI

RURAL INFRASTRUCTURE

Chapter Summary

Rural Ladakh is the real face of Ladakh. As with the rest of India, Ladakh too lives predominantly in its villages. However, inadequate infrastructure facilities in rural areas coupled with new employment avenues available to people in urban centres such as Leh have come together to precipitate a massive rural-urban migration pattern in Ladakh in recent times. It is of the utmost importance to arrest this pattern, since the very survival of Ladakh's traditional lifestyle depends on it.

The principal concerns in Ladakh with respect to its rural infrastructure scenario are centered round a lack of basic amenities for village residents (such as power, water and telecommunication facilities), the need for new works (like roads, schools and hospitals), and the maintenance and utilisation of existing facilities (such as irrigation schemes). In addition, there is also an urgent need to keep a check on the social and ecological degradation that has been happening in rural Ladakh of late.

Ladakh has been known far and wide for its unique cultural heritage and way of life. However, it is rural Ladakh that is the true repository of these precious resources, and it must be preserved if there has to be any hope of retaining Ladakh's traditional character.

Sustaining the Real Ladakh

Today, four decades after Ladakh was opened up to mass tourism and visitors from the outside world, the region continues to be predominantly rural in character. Most of the local population stays in villages and there is still a great deal of connectivity with the land (though, as was pointed out in the earlier chapter on the land-based economy, this is fast declining). Rural infrastructure has a key role to play in maintaining Ladakh's traditional agrarian base. In a nutshell, it helps to preserve the centuries old, traditional, village based lifestyle of Ladakh.

Apart from the above, rural infrastructure is also important for Ladakh because it can boost employment in rural areas in fields other than agriculture e.g. community based tourism and cottage industries. The construction of a solar heated community hall could, for instance, greatly enhance the capability of villagers to work on a gainful enterprise right through the winter months.

In addition, the remote and geo-strategic location of Ladakh makes it vulnerable to security threats at all times. Road connectivity is therefore of the greatest importance for this region, which is an area that falls under the ambit of rural infrastructure once again. The importance of rural infrastructure facilities for Ladakh is therefore considerable.

Current Status & Problems

Though adequate to take care of current needs, the rural infrastructure of Ladakh needs to be seriously improved so as to provide for the needs of the next twenty years. The main infrastructure related problems before rural Ladakh today are as follows:

Lack of Maintenance and Utilisation of Existing Infrastructure

Trivial though this may sound, it is one of the main challenges with respect to rural infrastructure in Ladakh today. Over the past many years, numerous roads, buildings and irrigation works have been constructed in rural Ladakh. If these are not looked after well and on a regular basis, the entire investment is at risk of falling into disrepair and waste. Similarly, there are many infrastructure jobs that were executed to perfection in the past but which are not being utilised fully today.

Need for New Infrastructure

That rural Ladakh needs more infrastructure facilities is an obvious fact. The construction of new roads is particularly important, especially for connecting small hamlets that are still left outside the network of roads. New schools and hospitals are also urgently required in many Ladakhi villages. One of the biggest reasons for constructing new infrastructure works in rural areas is to arrest the disturbing trend of rural-urban migration that Ladakh has been witnessing in recent times, which is a serious problem in its own right.

Inadequate Provision of Basic Amenities

There are three areas where the infrastructure facilities in Ladakh's rural areas need to be particularly improved – energy and power, water and sanitation, and telecommunications.

The energy scenario in rural Ladakh is currently so grim that even critical facilities like hospitals don't have adequate power. We have not been able to utilise our micro hydel and solar potential to the fullest advantage. In addition, there has been no research conducted on making buildings thermal retentive in Ladakh.

Water and sanitation issues also need to be taken up on priority in Ladakh's rural areas. Receding glaciers have resulted in a less-than-adequate water supply for the people of the region. Connective water supply (through taps) is still a distant dream in Ladakhi villages. No research has been conducted on the efficient decomposition of night soil from dry Ladakhi toilets. Bathrooms are still not available to most people in rural areas, and drainage is a major problem in many villages. Having a telephone is not a luxury in Ladakh, but rather a necessity. The current scenario is such that even certain block headquarters do not have telecommunication facilities.

Deterioration of Social, Traditional and Ecological Standards

Ladakh's social structure seems to have become somewhat weakened in recent times. A manifestation of this trend is that the encroachment of public land has become a great menace in many Ladakhi villages today. Many people have illegally occupied pastures, spangs (springs) and roads, and no one seems disturbed enough to stop them.

The abovementioned decline in social norms is reflected in traditional values as well. Many new buildings that are being constructed in rural areas today by private parties do not conform to traditional Ladakhi architectural styles. This poses a threat to our cultural heritage, which may soon get wiped out if things continue in the same manner.

Finally, most villages in Ladakh today are getting polluted. This is particularly true of streams and water bodies. Green belts and traditional footpaths are getting encroached upon and slowly eliminated. The situation demands urgent action to arrest further deterioration of the environment.

Vision Statement

To develop rural Ladakh in such a manner that the disturbing rural-urban migration scenario is arrested – by strengthening block headquarters, making current public works functional, and constructing new works that are needed – while at the same time giving due emphasis to the preservation of traditional Ladakhi monuments, cultural practices and the environment.

Strategies

Strategy I – Maintain and Utilise Existing Facilities

- Carry out maintenance jobs on old roads, buildings, irrigation canals
- Ensure proper staffing of facilities such as schools and hospitals

The maintenance of existing roads, buildings, irrigation canals etc. must be taken up on priority in Ladakh's villages. Facilities like schools and hospitals that were built with valuable public money need to be respected and provided with adequate staff.

Strategy II – Develop New Infrastructure Facilities

- Aim all efforts at arresting rural-urban migration pattern
- Develop a master plan for the development of each block headquarter
- Construct new roads, schools and hospitals wherever required

The primary aim of building new infrastructure projects in rural Ladakh should be to develop facilities at the rural level so that people do not feel the need to come to Leh for every small requirement. Towards this objective, a master plan should be prepared for the development of each block headquarters. Cottage industries should also be developed in

villages so that people have sufficient economic opportunities in their own homes and do not have to come to Leh to earn their livelihoods.

The construction of new roads is perhaps the most important requirement in terms of rural infrastructure in Ladakh right now. All population centres and hamlets need to be connected by roads immediately. Two-lane roads should be constructed from the district head quarter to all block headquarters. However, Ladakh should not get transformed into a jungle of asphalt roads, and their construction should be undertaken only where they are required. Also, roads should not be built through pastures or agricultural land.

There is a great need for new buildings to be constructed in rural areas of Ladakh as well. In particular, there is a need for schools and hospitals to be built. In the case of construction of schools, care must be taken to ensure that they are equipped with the best facilities for children's education. Energy requirements of all new buildings should be satisfied using renewable sources.

Strategy III – Provide Adequate Basic Amenities

- Explore micro-hydel projects to satisfy rural Ladakh's power needs
- Ensure better availability of water to rural populace
- Improve sanitation facilities currently available in Ladakhi villages
- Better telephonic connectivity of Ladakhi villages

Rural areas in Ladakh should be given the same facilities and civic amenities that urban areas enjoy. Small micro hydel projects should be explored as a means to satisfy the energy requirements of villages. Big solar power plants should also be established at the block headquarters level. The maintenance of all such projects should be handed over to the community. The easy availability of water is another area that needs to be tackled in rural Ladakh. In this regard, data needs to be maintained about the discharge of nallahs and other water bodies. The education of locals about the importance of preserving water and is also an important step that needs to be acted upon. In the case of inter-village disputes regarding water sharing rights, the authorities must intervene but in the right spirit. Also, water going to waste especially during winter months should be tapped by constructing reservoirs, dams, and artificial glaciers. For improving the drinking water and sanitation situation in villages, every rural household should be provided with ready water through pipe connectivity. The possibilities of underground water should be explored. Research should be conducted on ways to efficiently decompose night soil from Ladakhi toilets. Drains and footpaths should be constructed where appropriate in villages. Non-local labourers should be instructed not to pollute the environment by defecating in open spaces. Solar bathrooms should be constructed. Finally, telecommunication facilities should be improved drastically in rural Ladakh.

Strategy IV – Check Social, Cultural and Ecological Decline

Problems such as the encroachment of public land and polluting of streams need to be checked with an iron hand.

CHAPTER VII

WATER RESOURCES

Chapter Summary

After air, water is probably the next most crucial resource required for sustaining Life. From humans to animals and plants as well, almost every living thing requires water for its survival. This critical status of water is further enhanced when one thinks of it within a semi-arid, desert scenario like Ladakh. Indeed, in such areas, water is perhaps the most important resource of all. Though endowed with only limited sources of water, traditional Ladakhis managed to meet most of their requirements for this scarce resource for centuries. They managed to do so by adopting a lifestyle based on sustainability and harmony with Nature. However, in recent times, Ladakh's water resources have been facing threats they have probably never been subjected to before. Chief among these are the concerns about the increasing pollution of water bodies in Ladakh, the depletion of water resources in general, and the sub-optimal utilisation of this precious resource owing to a general attitude of negligence towards conservation issues. The need of the hour is to address each of these problems in a systematic manner. One of the most effective ways to do so would be to revive the traditional village-level ties and treaties that kept the water resources of Ladakh pristine for centuries.

One of Four Basic Elements

Water is a critical resource for sustaining Life. Human beings, plants, and animals – all depend on it for their very survival. After air, water is the next most crucial requirement for existence to continue. Its importance can therefore not be underestimated.

However, if water is an important resource in general everywhere on the planet, it is an especially precious treasure in areas where there is scarcity of it. In Ladakh – a semi-arid, high-altitude desert – water is perhaps the most scarce resource of all, and consequently, perhaps the most precious too. The proximity of water bodies literally dictates the location of settlements in Ladakh, so much so that one only has to trace the main water resources in Ladakh to get a corresponding list of its main villages. Clearly, water *defines* the very direction that Life takes in Ladakh.

Since water is necessarily required for all agricultural activities in Ladakh (hardly anything grows 'naturally' in this region, everything has to be cultivated using irrigation techniques), and since the land-based economy is the very bedrock of traditional Ladakhi living, water is an exceedingly important resource in Ladakh also because without it, the age-old village-based lifestyle of Ladakh would fall apart.

Finally, perhaps the most urgent reason why water resources need to be taken up as a priority issue in Ladakh today is that they are facing an unprecedented threat from a host of sources, which could challenge their very existence even in a medium-term scenario.

Current Status and Problems

Water resources are used up in Ladakh mainly for the following five purposes:

- Drinking and domestic uses
- Sustaining livelihoods
- Sustaining environment and aquatic life
- Irrigation and generation of power
- Recreation and religious uses

The list of main public sector departments that deal with water resources in Ladakh and a brief description of the work that falls under their purview are given below:

Public Health division (PWD)	<ul style="list-style-type: none">• Potable drinking water supply
Irrigation and Flood control (PWD)	<ul style="list-style-type: none">• Major and minor irrigation works (agri)• Flood control and protection works• Maintaining traditional irrigation works
Rural Engineering Wing (Rural Dev. Dept)	<ul style="list-style-type: none">• Water harvesting• Minor irrigation works• Maintaining traditional irrigation works
Power Development Department	<ul style="list-style-type: none">• Generation of hydro-electric power• Maintenance of hydel projects

The main problems with respect to water resources in Ladakh today are as follows:

Pollution of Water Resources

Water resources are getting polluted in Ladakh today at an alarming rate. Even streams and rivulets flowing through villages (that once used to carry water clean enough to drink) have started getting dirty. Some people attribute this to the effects of mass tourism.

Depletion of Water Resources

Recent years have seen a slow but indisputable decline in the total quantum of water resources available in Ladakh. This in turn has happened due to such causes as a decrease in snow cover, glacial area and precipitation figures.

Distribution of Drinking Water

The severe climatic conditions of Ladakh (especially during the long winter months) make the distribution of water a formidable challenge here. More specifically, water-

carrying pipes burst when subjected to sub-zero temperatures. Sustainable solutions to this problem based on appropriate technology have not been found yet in Ladakh.

Sub-optimal Utilisation of Water

Water resources are often not utilised to their best advantage in Ladakh. This in turn is largely the result of the fact that traditional systems of water sharing have broken down in many Ladakhi villages to a great extent.

Lack of Adequate Conservation Efforts

Finally, the conservation of water (and especially waste water) is not being emphasised on as it should be in current policy circles.

Vision Statement

To provide an adequate and good quality supply of water to the residents of Ladakh, both for drinking as well as irrigation purposes, while working within a framework that stresses on the conservation and optimum utilisation of scarce water resources, and incorporates modern scientific methods for studying the behaviour of water bodies.

Strategies

Strategy I – Protect Water Resources from Pollution

- Stop dirty water and effluents from directly entering water resources
- Set standards and norms for the kinds of discharges allowed into water bodies
- Preserve traditional systems ensuring sanctity of water sources

Proper drainage systems should be devised to ensure that dirty water and effluents are not allowed to enter water resources, especially those used for drinking purposes. There should be a facility for treating water resources that have already been polluted. Strict standards and norms should be formulated (and enforced through proper legislation if required) with respect to the kinds of effluents that can be discharged into water bodies.

Also, the traditional norms and value systems that kept the water resources of Ladakh clean and free of pollution for hundreds of years should be preserved. It is only with the active participation of the people that we can hope to end this menace in Ladakh.

Strategy II – Arrest Depletion of water resources

- Encourage conservative use of water
- Carry out impoundment exercises at higher reaches during precipitation

Since the depletion of water resources in Ladakh is happening purportedly due to such phenomena as global warming, there isn't much that can be proposed at the level of

departments to remedy the situation. However, adopting a more conservative approach towards using water for everyday purposes may be a useful suggestion. Also, water should not be allowed to run waste. In this regard, water impounding and harvesting exercises should be carried out, especially in the higher reaches and during precipitation. Apart from saving water from going waste, it will also help to improve ground water availability by recharging it.

Strategy III – Improve Distribution Facilities of Drinking Water

- Use water distribution pipes suited to the harsh climate
- Adopt rational distribution patterns based on density of population

Water distribution should be carried out using pipes made of appropriate material / supported by technology that allows them to withstand winter temperatures as low as minus 30 ° C in Ladakh.

Additionally, the current water distribution system in Ladakh was laid down so as to cater to an equal growth of population in all areas of the district. This has not happened, thereby resulting in some areas (with low population densities) having a disproportionately high amount of water at their disposal, and others (where the density of population is high) facing an acute shortage of it. These imbalances should be removed from the system by adopting a more rational water distribution policy.

Strategy IV – Ensure Optimum Utilisation and Conservation

- Preserve traditional systems of water usage and sharing
- Plant suitable crops requiring less water
- Use water saving systems

As already mentioned, earlier generations of Ladakhis managed to keep their water resources preserved and in pristine condition for hundreds of years. The secret of their ability to do so were intricate water usage and sharing agreements that existed at the level of every village in Ladakh. These community-based systems should be revived and encouraged.

Other measures to save water would include planting crops that do not need much irrigation, and encouraging the use of water saving systems (showers, toilets etc), especially in guesthouses and hotels.

Strategy V – Make Flood Protection Works

Finally, a master plan should be developed for flood protection works along the banks of the rivers Indus (from Stakna to Phey) and Siachen (from Sasoma to the confluence point near Diskit). The plan should be based on model studies and reports. Also, model studies should be carried out on rivers and nallahs to understand their character better and thereby better protect the lives and property of the people that live on their banks.

CHAPTER VIII

POWER & ENERGY

Chapter Summary

Energy forms an integral part of Ladakh’s physical infrastructure set-up. However, the current energy scenario in Ladakh is far from good. There is a great shortage of power in the region, constraining the development of all other sectors in turn. Whatever little power is available is generated mostly from fossil fuels that are imported from outside the region since Ladakh does not have any reserves of such resources. This arrangement throws up a host of problems, including environmental degradation and economic unsustainability to name just two. Added to these are Ladakh’s other power related problems such as remote areas that cannot be supplied energy to from a central grid, and a messy administrative set-up.

The way forward for Ladakh with respect to its power and energy requirements clearly lies in the field of renewable energy sources. The potential for solar and micro-hydel generated energy exists in abundance in Ladakh, and even geothermal and wind energy possibilities are present in certain pockets. These should be tapped to the maximum possible advantage. Other measures that could be adopted alongside to improve the power situation in Ladakh include the setting up of a decentralised power generation and distribution network, fostering a culture of energy conservation in Ladakh, and streamlining the administrative machinery looking after power in the region. Ultimately, our aim should be to turn Ladakh from energy deficient to energy surplus status.

The Sector that ‘Powers’ all Others

The importance of energy and power in Ladakh, or for that matter in any other part of the world, is obvious. Though scientifically defined as the capacity to do work, ‘power’ today has become a synonym for electricity, and the ‘work’ it is used to do is mainly that of providing heating and lighting facilities in households. Though a relatively recent phenomenon, the common use of electricity in homes has changed the nature of human living forever. It is difficult to imagine how our forefathers must have lived without this indispensable resource.

That power is a critical sector for Ladakh’s development can be assessed by sparing a minute to think about what Ladakh could become if it had adequate power. In such a scenario, Ladakh’s wasteland deserts could be converted into lush green fields through irrigation. The economy of the region could be revolutionised by harnessing the potential of the Indus, Zaskar and Shayok rivers for power generation. The general living conditions of the people could be greatly improved by the providing them with adequate potable drinking water, proper medical facilities, heated homes, and across-the-board industrial, agricultural and horticultural growth. Consequently, there can be no doubt that providing Ladakh with adequate power should be accorded the highest priority by us.

Current Status & Problems

Despite the tremendous importance of power as a sector, Ladakh is an energy deficient region. This is not because it doesn't have the natural resources with which to meet its energy requirements. Rather, it is because these resources have not been tapped properly.

The present unrestricted demand for power in Ladakh is 58.53 MW (which includes 20 MW for the army). At an annual rate of increase of 7%, this requirement is set to swell to 94 MW by the year 2010, and 140.5 MW by 2025. Comparing these figures to the current installed generation capacity of 13.5 MW (8.7 diesel, 4.8 hydel) gives us an idea of how grave the power situation in Ladakh really is. Currently, power supply does not meet unrestricted demand and consequently curtailment measures need to be applied. In simpler terminology, that means that an average household in Ladakh gets only a few hours of electricity every day.

There are basically three problems that the power generation sector in Ladakh faces today.

Scarcity of Fossil Fuels

Ladakh has no resources of fossil fuels whatsoever. Energy based on such fuels is therefore not the answer to Ladakh's energy requirements. In recent times, Ladakh's needs for power have witnessed a sharp increase, as the people of the region have started adopting a lifestyle that is more and more in line with the outside world. This spurt in power requirements has mostly been met by importing fossil fuels from outside – a system that is not reliable and serves to make Ladakh too dependent on others. Currently, 8000 litres of diesel are needed to generate sufficient power for a day's consumption in Ladakh, and all of this fuel is imported from outside. Clearly, this is an unsustainable arrangement, economically as well as environmentally.

Difficulties in Supplying Power to Remote Areas

There are many regions in Ladakh that are still largely isolated from the rest of the region, especially during the winter months. Supplying power to such areas is a formidable challenge, and it is virtually impossible to do so by the use of transmission lines from a centralised grid, which is neither a technically feasible nor an economically viable option.

Confused Administrative Set-up

There are too many agencies involved in Ladakh's power generation administration – the Jammu & Kashmir Power Development Department (JKPDD), the Jammu & Kashmir Power Development Corporation (JKPDC), and the Ladakh Renewable Energy Development Agency (LREDA). Mandates have not been defined clearly, and even basic data to prepare new power projects is not readily available.

Vision Statement

To transform Ladakh from an energy deficient to an energy surplus region and supply the local population with reliable, affordable and quality power, by tapping renewable energy sources available in the region to the maximum possible advantage.

Strategies

Strategy I – Lay Emphasis on Renewable Energy

- Tap the potential of solar energy
- Use micro-hydel projects to their best advantage
- Explore geothermal and wind energy possibilities
- Obtain best machinery and expertise to develop renewable energy in Ladakh

Since Ladakh is deficient in fossil fuels, they cannot be made the basis of meeting its energy requirements. The emphasis of an energy policy for Ladakh's future must therefore necessarily rely on renewable sources.

Solar energy is obviously the most potent form of renewable energy that Ladakh can tap for its needs. As part of this endeavour, we must aim to cover all Ladakhi homes (100% coverage) with solar home lighting systems by the end of this year. Solar energy can be used for photovoltaic purposes such as lighting and pumping, as well as for taking care of thermal needs through the use of solar architecture and water heating systems. A solar building code needs to be evolved for Ladakh by an authority on solar architecture.

Micro hydel projects also hold a lot of promise for Ladakh, as has been borne out by the CEA studies. Several policy measures need to be adopted to accelerate capacity addition from hydro-electricity projects. These include collection of hydraulic data from all potential sites by the department of irrigation, forwarding all languishing power projects to the MNES for funding, installation of stand-alone micro hydel projects (with solar and wind backup) in remote areas of Ladakh, and identification of new projects for future work. In addition, all micro hydel projects should be executed along PDC lines and funded by the MNES.

Another potential source of renewable energy in Ladakh is geothermal energy. Studies need to be conducted on how this form of energy can best be tapped to satisfy Ladakh's power requirements. Similarly, wind energy too provides Ladakh with some strong renewable energy possibilities. Potential sites needs to be identified for the same, and data needs to be collected in places like Changthang and Nubra.

Finally, expense should not be a constraint in developing the potential of renewable energy in Ladakh. The best technology should be procured to give Ladakh a solid footing in this field.

Strategy II – Conserve Energy

- Use energy efficient equipment
- Bring about attitudinal change in people

Apart from relying on renewable energy for most of Ladakh's power needs, we also need to foster a culture of energy conservation in Ladakh. Under this strategy, energy efficient equipment should be used as often as possible. From incandescent lamps, we have already shifted to CFL lamps that consume just 10% of the energy required by the former. Soon, we hope to incorporate white light emitting diodes (LEDs) into Ladakh's lighting requirements, which can function of just 2% of the energy required by an incandescent lamp. Slowly, we hope to completely eliminate all incandescent lamps from Ladakh. More importantly however, an attitude of energy conservation needs to be fostered among the common people of Ladakh.

Strategy III – Generate Power for Commercial Development

- Generate adequate power to boost other sectors
- Develop power as a commercial industry in its own right

We must make power generation the backbone of industrial development in Ladakh, and use it as an engine of economic growth in the region. In this regard, we need to first generate sufficient power for other industries to grow. Later, when we are able to generate surplus power, we can sell it for commercial gain.

Strategy IV – Decentralise Power Distribution Network

- Evolve decentralised power generation and distribution systems
- Involve local community for maintenance of local power projects

We need to evolve a decentralised power generation and distribution system for Ladakh, and make each village energy-secure using the right mix of renewable energy options. The local community must be involved for the installation, commissioning and maintenance of such systems.

Strategy V – Streamline Administration

- Merge PDC and PDD into one entity
- Revive investigation wing of PDC
- Clarify LREDA's mandate

Finally, there is a great need to streamline the current administrative set-up in the power sector in Ladakh. This would include merging the PDC into the PDD and bringing both under the control of LAHDC. The investigation wing of PDC needs to be revitalised as well. Also, LREDA should be mainly involved in project formulation and fund raising activities.

CHAPTER IX

HEALTH & ENVIRONMENT

Chapter Summary

Good health is a necessary prerequisite for the development of any society. Fortunately, though many health problems do exist in Ladakh, the district health administration has done a good job of addressing them over the past many years. Today, the healthcare set-up in Ladakh is hailed as being one of the best in the country, yet certain aspects of it cry out for attention and improvement. The almost complete absence of sub-speciality investigation facilities as well as professionals who can carry them out is a glaring gap in the system. So is the absence of an institute specially dedicated to studying peculiar high altitude related illnesses. The current health administrative machinery is also in need of a significant shake-up in the district. All healthcare facilities from the district hospital level down to primary health centres should be given a comprehensive over-hauling, with possible upgradation of the district hospital to a Medical College. Traditional Amchi / Sowa Rigpa medicine should be given greater encouragement too.

Good Health – The Basis of All Else

Health is considered a vital sector everywhere in the world. A healthy population is able to develop itself better. Along with education, health forms the core of any region's social infrastructure set-up.

Apart from the general importance of health as outlined above, this sector is especially significant with respect to the development of Ladakh too. The locational disadvantage of Ladakh makes it imperative that it should be given extra emphasis in the field of health. This is because in the event of a serious mishap / ailment (like a head injury, for instance), it would be virtually impossible to get a patient to proper medical facilities in a timely manner if they were available outside Ladakh. Distance, terrain, weather conditions and financial ability – all play a role in determining whether or not a seriously ill patient can avail of treatment facilities outside the region. There is therefore a need to upgrade medical facilities within the Ladakh region to the greatest possible extent, in order to make quick intervention possible.

Moreover, there are certain diseases and infirmities that are peculiar to Ladakh (e.g. animal-borne diseases, high altitude related diseases etc) the study of which has not yet been carried out in a systematic manner. Health services are therefore especially required to be set up for this region.

Finally, this is the highest *inhabited* district in the country. Studying the health conditions of the local population can give us great insights into the field of high altitude medicine. For all these reasons, healthcare is an area of critical importance in Ladakh.

Current Status & Problems

In terms of the quality of healthcare services available to the people of this region, the district health facility has been hailed as one of the best medical set-ups run by the government in the country. However, this sense of euphoria is hiding some serious lacunae in the system, such as the absence of sub-specialty investigation facilities and clinical facilities. The two main areas where the current health facility in the district could improve are as follows:

Administration Related Issues

Ladakh's medical administration works well as a cohesive team most of the times. However, there are times when staff members do not operate in tandem. This adversely affects the quality of healthcare that is dispensed to the general masses. Another related issue is that medical personnel often shy away from serving in rural health facilities, despite such set-ups being equipped with reasonable investigative facilities. This is largely because infrastructure facilities in rural areas are often not adequate, making it difficult for incumbent rural medical staff to stay in such areas for extended periods.

Lack of Facilities

This is the more serious of the two areas where the current health facility in Ladakh lacks. There is an acute shortage of qualified pathologists, epidemiologists, dermatologists and other specialists in the region. At the same time, the machinery and equipment that is required for sub-specialty medical investigations (such as Cat Scans, MRIs etc) are also not available. The result is that patients can often not be given precise diagnoses of their ailments by medical personnel, with sometimes fatal consequences.

Vision Statement

To work towards the attainment of a holistic health scenario in Ladakh including the physical, mental, social and ecological well being of the people, while taking into account health conditions specific to high altitude people so as to establish a specialised institution dedicated to ailments and infirmities common in such areas.

Strategies

Strategy I – Improve Current Administration

- Form a Health Advisory Committee to review health services
- Institute in-service training for health professionals
- Give due importance to Amchi / Sowa Rigpa medical system
- Increase coordination between governmental and non-governmental agencies
- Remove inequities in disbursement of healthcare facilities
- Give due emphasis to children's nutritional needs

The formation of a Health Advisory Committee is suggested to completely review the administrative, academic and functional structure of the health services in Ladakh. The committee's recommendations should ensure that the health services become and

remain efficient in their use of personnel and resources, and are responsive to the challenges of the changing needs and expectations of the people.

It would also be a welcome development to institute in-service training facilities for health professionals. All health workers should be made to attain a high standard of competence and practice. District hospitals should play a big role in this endeavour. At the same time, it is required to bring about an attitudinal change in health workers towards serving in rural areas.

A further improvement in the current health set-up could be increased coordination between government services and the health-related activities of NGOs, community based organisations, Panchayats etc. Such organisations play an important role in improving health in Ladakh, and improved coordination with them would reduce duplication and lead to better quality of healthcare for all Ladakh.

Also, the traditional Amchi / Sowa Rigpa medical system of Ladakh should be encouraged by giving it the recognition that is due to it (perhaps through a form of accreditation along the lines of Ayurvedic Medicine). The stream should be extended increased budgetary support that is proportionate to its importance. An institution dedicated to Amchi medicine should also be set up by the government.

An additional measure for improving the current health administration in Ladakh would be to remove inequities in the provision of healthcare to the masses. These include urban-rural, male-female, rich-poor and able-disabled divisions. With respect to the health of children, it should be ensured that there are no cases of malnutrition, and that micronutrients are sufficiently present in their diets.

Strategy II – Enhance Current Facilities

- Improve District Hospital, sub-district hospital and primary health centres
 - Consider upgrading District Hospital to a medical college
 - Ensure better access to medicines and pathology services in PHCs
 - Provide quality antenatal care, pediatric screening, vaccination services
 - Set targets for reduction / eradication of certain ailments from Ladakh
- Lay emphasis on preventive measures
 - Minimise healthcare facility acquired infections
 - Encourage hygienic living conditions among locals
 - Establish a Ladakh Institute of Prevention (LIP)
- Incorporate other suggestions
 - Establish formal registers for recording health-related data
 - Include health services in disaster management work
 - Improve town planning of Leh for hygiene concerns

Under this head, the first step is to improve the services available in the district hospital, sub-district hospitals and primary health centres (PHC) of Ladakh. There is particularly a need to upgrade the Sonam Norboo Memorial District Hospital to a tertiary level hospital and Research Centre. Perhaps in time the hospital could be turned into a Medical College as well (with a possible affiliation to the Sher-e-Kashmir Institute of Medical Sciences in Srinagar). A well-designed library, a state-

of-the-art lecture hall, an intensive care unit and a well-equipped ambulance are some additional facilities that should be provided.

Sub-district and primary health services can also be improved by upgrading them (through the provision of consulting rooms, diagnostic facilities, theatre facilities, blood bank facilities, ambulances and increased numbers of beds), ensuring adequate accommodation for visiting specialists in them, establishing telemedicine links between them and the district hospital, and deploying resources and staff optimally to serve in them.

In addition, there must be improved access to pharmaceuticals and better availability of good pathology services in health centres. Quality antenatal care should be provided to every woman. Comprehensive pediatric screening and vaccination services should also be available.

To give all of the above measures a degree of concreteness, time frames and targets should be set for reducing or completely eradicating certain medical problems from Ladakh such as infant mortality, maternal mortality, communicable and non-communicable diseases.

A second aspect of improving the current health facilities available pertains to preventive measures. Hospital and healthcare facility acquired infections are causing increasing concern throughout the world. This risk should be minimised in Ladakh by ensuring that all health facilities have adequate provisions for hand-washing, disposal of biological waste, sterilisation of equipment etc. Quarantine facilities should also be available. In addition, curative and preventive medicine should be practiced, particularly by popularising a culture of hygiene and healthy living amongst the local population.

Perhaps *the* most important measure that needs to be taken to improve the current healthcare scenario of Ladakh is the establishment of an institute for the prevention and control of diseases peculiar to Ladakh (such as cancer of the stomach, cancer of the liver, silicosis, pulmonary TB and cancer of the lungs in non-smoking rural farming women). The Ladakh Institute of Prevention (LIP) so formed will concentrate its efforts on four broad themes:

- Environment and occupational health
- Epidemiological studies of diseases peculiar to Ladakh
- Research on high altitude medicine
- Health promotion and education

Preventable diseases make up 70% of the burden of illness & associated cost. Health promotion at work places, minimizing risky behaviors, ensuring a clean environment will improve both physical & financial health of the population.

Finally, search for a permanent solution for saving a separate resource to fund the surge in medical care cost for the retired population need be seriously considered before it is too late. The proportion of population 65 or older is likely to increase by nearly 33% by 2025. No matter how healthy elderly person are, their sheer numbers are almost certain to result in increased expenditure of health care.

CHAPTER X

EDUCATION

Chapter Summary

Education has a critical role to play in the development of any society. In Ladakh, the importance of education is even more marked because it was a neglected sector in the region for many years before the authorities finally woke up to its importance. There is therefore a need to make up for lost time.

Currently, the education system in Ladakh is funded completely by the bounty of the central and state governments. Also, much of what is taught in Ladakhi schools today is not relevant to the natural environment of this region, or the occupational future of our children. What needs to be done therefore is to make the education system in Ladakh more economically viable, which could be achieved through such methods as multi-grade teaching and centralised residential schools. A holistic approach towards education in general should also be encouraged in the region. There must be a link between what is taught in schools and what is needed in the job market. The training and motivation of teachers is also central to improving the state of education in Ladakh. Along with all this, adequate emphasis needs to be laid on creativity, art, music, sports, land-based activities like agriculture, and the moral education of children.

Working Towards a Better Tomorrow

Education is a sector that commands immense importance throughout the world today. It has now been established beyond doubt that primary education in particular has a central role to play in moulding individual personalities, and hence entire communities. In order to lay the foundation of a harmonious and peaceful society therefore, concentrating upon education is not only desirable but, in fact, necessary.

In addition to the general importance of education for humanity as a whole, Ladakh needs especially to foster this sector with increased vigour today. This is because for many years, we remained isolated from development trends in the rest of India and the world in almost every field. Education was no exception, and the memories of the years when we used to have an almost 100% rate of failure at the board exam level in schools are still fresh in our minds. Though the situation has improved considerably now as many more Ladakhi students are managing to pass their exams, there is still a tremendous amount of work that remains to be done in the field.

Perhaps the most important reason for concentrating on education in Ladakh today is that more and more young people in the region are now looking for employment opportunities. If treated in the right manner, education could help our youth find meaningful work after finishing their studies, if not it could lead our younger generation into educated unemployment, depression, alcohol, drugs, etc, as has been seen in many places like in the Northeast.

Current Status & Problems

Currently, there are 59 middle schools, 28 high schools, and 9 higher secondary schools in the Leh district. There are 1426 teachers posts to teach only 11800 students, this is an unnecessarily high ratio of teachers to students in the region (1:8). The combined budget used on education from different schemes comes to roughly Rs twenty-two crores a year which means a shockingly high expenditure of Rs 1,500 per child per month. The three basic problems before the education facility in Ladakh today are:

Economically Unsustainable System

The current Ladakhi education system depends completely on the generosity of central and state governments. Also,. Being a sensitive geo-political area and susceptible to being cut off from the rest of India at times of military crisis, Ladakh cannot afford to be so completely dependent for something as critical as education. The example of Soviet satellites and their strong school system falling apart with the collapse of the USSR should serve to remind us of the ills of over-dependency.

Lack of Holistic Approach

Currently, the education that is imparted to Ladakhi children is too far removed from their natural surroundings. Also, there is almost complete attention on academics, with ancillary subjects like art, music, sports and moral studies given little or no respect. This cannot spell anything good for the overall development of children.

No Occupational Orientation

Finally, the education imparted in Ladakhi schools doesn't serve to make children better prepared for a career later in their lives. There is no emphasis on vocational training, or on education in subjects that are in high demand in the job market like computer sciences.

Vision Statement

Building human resource in order to create a happy Ladakh, through the harmonious use of our natural resources, guided by our cultural resources.

Strategies

Strategy I – Improve Education Facilities

- Make education facilities economically sustainable in Ladakh
 - Adopt multi-grade teaching
 - Expand primary schools and centralise secondary education
- Establish uniform, high-quality government schools
- Encourage private schools to play a social role

Education facilities need to be made economically viable and sustainable in Ladakh. Across the world, 1: 20 is considered the appropriate teacher student ratio. As already mentioned, in Ladakh this ratio is unhealthily pegged at 1: 8, which puts a tremendous monetary strain on the state's coffers and is simply unsustainable in the long run. In order to attain the 1: 20 teacher-student ratio in Ladakh, we need to adopt multi-grade teaching methods in our primary schools, whereby a single teacher would be trained to supervise the progress of students across different classes and subjects. Also, the centralisation of secondary education by providing residential facilities in schools would be a step in the right direction.

Next, uniform high quality schools should be set-up (especially primary schools) even in the remotest corners of Ladakh. Government schools should be completely overhauled to restore public faith in them. The New Generation Schools should be provided with inspiring solar buildings that are warm, bright, spacious. Further the goal should be to create government schools where elected leaders, officials and teachers could also send their own children in the near future. This will further bolster public confidence and ensure true accountability in the system.

Private schools should play a social role in improving the state of education in Ladakh. Certain non-profit private schools should be encouraged to set up schools in rural areas whose salaries are supported by the government but whose boards operate independent of any government interference.

Strategy II – Make Education Holistic

- Relevant curriculum, importance to Ladakhi language in schools.
- Convergence of various schemes, especially pre-primary
- Encourage art, music, creativity, agriculture
- Moral education as part of the curriculum
- Boost development of sports in Ladakh right from school

There should be an initiative to make education more locally relevant for children. A child-friendly medium of instruction should be adopted in schools. The Ladakhi language should be used both as a medium of instruction as well as a compulsory subject up to matriculation. Creative teaching methods should be used and physical punishment should not be allowed.

There is a serious need to ensure convergence of various government and non-governmental schemes and initiatives. Schemes like ICDS should link up with the needs of pre-primary education in government schools, but without jeopardizing the other commitments of the scheme for example the welfare of mother and child. Similarly there should be convergence and synergy among schemes like Sarva Shiksha Abhiyaan from the central government and the Hill Council's own Operation New Hope.

Ancillary subjects such as music, art, dance, creativity and craft should be made part of the curriculum and thereby encouraged. Similarly, agricultural work must also be

included in the syllabus, perhaps as a practical project. Locally relevant textbooks and teaching-learning methods (TLMs) should be used, with perhaps a separate curriculum for nomadic children. In the long run Ladakh should also have its own board— Ladakh Board of School Education to frame curriculum and to conduct examinations.

Moral education is a theme that has generally been neglected in recent times. To restore the importance of this critical subject, we must ensure steady but subtle moral messages through the curriculum. At the same time, care must be taken during the teacher selection process, and teachers should be groomed to become models of high moral character.

In addition, sports should be encouraged greatly as part of the education in Ladakh. We should strive to produce national and world-class sportspersons by identifying and promoting such sports that Ladakh can have an advantage in due to its altitude and tradition (e.g. ice sports, archery, polo, athletics and mountaineering). There should be proper sporting facilities available in all schools, and one special school only for sports education. A mountaineering institute should also be set up.

Strategy III – Ensure Occupational Relevance of Education

- Base all education on occupational demand of the market
- Improve children in subjects such as English, Maths, Science, Computers
- Enhance vocational skills of students in arts, crafts, land based occupations
- Encourage higher education by establishing new institutes, career counselling

There is a great need to gear up Ladakhi students for a future with the outside world. To do this, education must be based on market demand, though ethics and values should not be overlooked in the process. Students should be made highly proficient in the use of English, and must be given an early start in computer education. They must be provided with a strong base in mathematics and science, with emphasis on subjects like IT and biotechnology that are in high demand today.

Students should also be imparted skills in the field of arts and crafts. This is because there is likely to be a growing global market for hand-made products in the coming years. Also, vocational streams should be introduced at the higher secondary level in schools, and agriculture should be included as a separate subject. In future we need less of Higher secondary schools and more of skills based institutions like ITIs and polytechnics. A polytechnic should be established in each block, specialising in trades specific to that block.

For improving the higher education facilities within Ladakh, the current degree college should be turned into a quality deemed university. Special institutes for Medicine, Engineering and Management Studies should be opened up. Career counselling services should be available to students for higher studies.

Strategy IV – Other Important Issues

- New Generation Teachers—Happy and competent
- Ensure 100% enrollment and retention of children in schools
- Encourage adult literacy, attain 100% functional literacy by 2010

Teachers must feel happy with their jobs before they can teach children well. They must therefore be paid a good salary and enjoy a high standing in society. At the same time there should be high accountability in the system. Like the Tibetan schools in Dharamsala and like other professions like medicine we might consider five yearly renewable teaching licence system. Efforts should be made to attract the best brains and infuse fresh blood in the system by making the department attractive. Further, teachers' training programmes should be regularly organised, both before and during their service and for this there should be world class institutes of teachers' training within Ladakh. There could also be incentives like golden shake-hand for the early retirement of the older generation teachers who find it hard to do justice to children in the modern system. Another area that needs to be worked upon is the 100 % enrolment and retention of Ladakh's children in schools. There should be no child servants in Ladakh, from within or outside the region. Finally, adult and continuous learning opportunities need to be created in Ladakh, to enable people to continuously build on their capacities. There should be 100% functional literacy in Ladakh by 2010, and NGOs must be assisted in this endeavour. The use of IT aided study circles and facilities in the remotest areas of Ladakh could also be explored.

CHAPTER XI

CONSERVATION OF NATURAL RESOURCES

Chapter Summary

Ladakh is home to a rich and diverse collection of physical, chemical, and biological natural resources. In recent times, this rare treasure of natural wealth has come under duress. The reasons for this range from a simple lack of awareness among the local population about the importance of preserving these resources, to an unsustainable drive for harvesting them that borders on the criminal and is driven by shortsighted commercial interests. Consequently, there is an across-the-board deterioration in all natural resources of Ladakh.

The need today is to arrest this dangerous decline. Doing so would involve a variety of measures including spreading awareness about the importance of natural resources among the local community, conducting systematic research studies on the bio-diversity of the region, and introducing appropriate legislation aimed at conservation efforts. Ways must be found for the peaceful co-existence of humans with wild animals. There should be a sustained initiative to discourage the ruthless exploitation of natural resources in an unsustainable manner by certain unscrupulous individuals. Also, the encouragement of renewable energy in Ladakh has a central role to play in preserving the natural resources of this region.

We Have But One Ladakh...

Despite its remoteness, harsh climatic conditions and aridity, Ladakh is endowed with unique resources: Boundless solar energy, clean air and water, a rich diversity of wild and domesticated plants and animals, vibrant cultures and indigenous knowledge. The wise use of these resources and the generally healthy state of the environment are the main legacy of the people of Ladakh over centuries. The present Vision Document for the next twenty years is a demonstration of the continued commitment of Ladakhis and their institutions to preserve this natural and cultural wealth, and improve durably people's livelihoods in harmony with it.

Trying to establish the importance of Ladakh's natural resources for its continued well being will be as redundant an activity as attempting to establish a connection between eating and staying alive. The relationship is an obvious one, and terrifyingly simple – No food, no life; no natural resources, no existence either. Expressed more clearly, if we don't take care of our natural resources at this point in time, the day may not be far when Ladakh may truly become the desolate and difficult place that it is generally thought to be by people from outside this region. Only on the base of a solid ecology and environment can Ladakh hope to build a prosperous future for its people. The conservation of natural resources is therefore one of the most urgent issues before us today that needs to be addressed.

Current Status & Problems

The natural resources of Ladakh may broadly be classified into two categories – physico-chemical resources, and biological resources. Under the first category would be included such entries as air, water and soil. In the second category, the main entries would be the flora and fauna of Ladakh. In addition, the usage of energy has much to do with the preservation of natural resources in Ladakh, and must therefore necessarily be included in any discussion on the topic.

The main problems that Ladakh faces currently with respect to the conservation of its natural resources are as follows:

Deterioration of Physico-Chemical Resources

Clean air is a key resource and prerequisite for healthy life support systems. Currently in Ladakh, especially in urban centers such as Leh and in villages along Ladakh's main transport corridors, an ever-increasing proportion of the population is settling down in places where pollution is reaching alarming levels.

The population of Ladakh (including its plant and animal life as well as agriculture) is critically dependent on the sufficient and timely availability of water. This in turn is determined to a great extent by the amount of snowfall that this region receives in winter, which then melts in the summer season to feed streams and rivulets. Erratic winter precipitations and steady recession of glaciers due to global warming pose major threats to the integrity of Ladakh's eco-system and the very survival of its population, even in the medium term.

Along with air and water, productive soils provide the basis for plant, animal and ultimately human existence. Formed naturally and by human agency over hundreds or thousands of years, soil constitutes an irreplaceable resource, particularly in a semi-desert area like Ladakh. In recent times, this precious resource has come under strain, particularly at the hands of ignorant people (who often build roads and buildings on agricultural land) and unscrupulous individuals (who mine this resource incessantly and in an unsustainable manner for monetary gain).

Decline in Biological resources

Due to its strategic bio-geographical location in the transition zone between the Himalayas and the Tibetan Plateau, Ladakh is endowed with a highly diverse flora and fauna, with a number of rare and endemic species, indigenous varieties and breeds. The rich bio-diversity of Ladakh represents a precious and irreplaceable resource, evolved over thousands of years. Its conservation is therefore of the greatest importance.

Today however, this rich diversity has become threatened due to a variety of reasons. Conflicts between people and wild animals are one of the causes for this state. Another is the unsustainable harvesting of certain natural resources for short-term monetary gains.

Energy Concerns

All forms of energy traditionally used in Ladakh were ultimately derived from the energy of the sun. Over the last few decades however, Ladakhis (especially in the urban centers of Leh and Kargil) have started relying increasingly on non-renewable sources of energy (essentially fossil fuels) for power, transport, cooking and heating. However, fossil fuel reserves in Ladakh are limited and will last perhaps for only another fifty years or so. The demand for power in the meanwhile is increasing rapidly, though production has peaked. The current impasse presents considerable challenges for Ladakh.

Vision Statement

To create a Ladakh that is in step with the times and offers its citizens a prosperous life, but where the conservation of natural resources is also given the importance due to it.

Strategies

Strategy I – Conserve Physico-Chemical Resources

- Protect air
 - Curb air pollution caused by vehicles
 - Stop open burning of solid waste
 - Reduce dust emission
- Preserve water
 - Systematically assess water sources in the region
 - Adopt a water conservation strategy
 - Establish a regulatory body for apportioning ground water rights
 - Check contamination of water by harmful effluents
- Conserve soil
 - Impose restrictions on unbridled construction on agricultural land
 - Check excessive use of fertile top soil for brick making
 - Adopt a soil conservation policy for wetlands, grass lands, semi-deserts

Air pollution caused by vehicles needs to be checked urgently in Ladakh, particularly in urban centres. This can be done by monitoring the quality of fuel used by vehicles, curbing adulteration of fuel, and checking and improving fuel combustion in engines. Further, the people should be encouraged to use public rather than private transport. Cleaner fuels such as CNG should be introduced, especially for use by buses and taxis. Vehicle owners must be made to understand the long-run economic advantages of changing over to friendlier fuels (lesser maintenance costs). In future, the option of electrical vehicles could also be explored.

The disposal of solid waste needs to be done in a better manner than it is today. Under no circumstances should waste be burned in public places, which is extremely harmful to the

air apart from endangering the health of citizens as well. Incinerators currently operating in Leh town should be moved out.

Dust emission should also be reduced, by banning off-road driving, and locating new roads and quarries away from habitation centres in such a way that hill slopes are not destabilised. For the same reason, the use of stone crushers should be regulated and they should not be allowed to be set up near villages.

Coming to the conservation of water in Ladakh, the assessment of water resources in the region is critical to this purpose. Systematically monitoring the phenomena of precipitations and glacier recessions as well as conducting the exploration and assessment of existing water reserves is the need of the hour. Further, a water conservation strategy should be adopted and widely promoted in Ladakh, including measures aimed at waste water storage as well as ground water recharge. The profligate use of water in such systems as hot and cold showers and flush toilets (especially in guesthouses and hotels) should be discouraged.

Another measure to conserve water resources in Ladakh would be the systematic study of ground water resources and the establishment of a regulatory authority to apportion rights for ground water usage. The increasingly common practice of drilling wells for private and commercial establishments must also be kept in check by the regulatory authority.

Other steps to preserve Ladakh's water resources would include an organised initiative to curb the pollution of water bodies by domestic and industrial effluents as well as solid waste, and the protection of the surrounding and catchment area of key freshwater springs, springs and other sources of drinking water.

For the protection of soil, a policy must be developed that strictly limits the use of agricultural land for non-agricultural purposes (such as the construction of private houses, hotels and roads). Also, there should be strict control and limits on the use of fertile topsoil for brick making. For the protection of non-agricultural soil, a conservation policy must be developed for grassland, semi-desert and wetland territory. In this regard, off-road driving must be strictly prohibited in fragile areas such as Changthang.

Strategy II – Protect Biological Resources

- Encourage local population to participate in bio-diversity conservation efforts
 - Create awareness about importance of Ladakh's biodiversity
 - Enhance community led conservation efforts
 - Minimise conflicts between people and wildlife
 - Increase community-based tourism
- Conduct research on and prepare inventories of Ladakh's biological wealth
- Check unplanned development of infrastructure in fragile areas
- Foster a spirit of co-management, organise relevant training programmes

To preserve Ladakh's rich biodiversity, the first step will have to be the improvement of awareness levels about the biodiversity of this region, particularly among the local people themselves. The conservation and exploration of the potential of wild plants and local varieties should be fostered, and the traditional system of protected areas and community led conservation efforts should also be revived. Conflicts between humans and wildlife should be minimised by taking appropriate steps. The local capacity for biodiversity protection should be strengthened and encouraged. Community-based tourism should also be encouraged, as that would give the locals a reason to preserve their natural habitat.

Inventories need to be prepared and field studies conducted on the status, current uses and main threats to the biodiversity of Ladakh. Research and regular monitoring with special focus on threatened habitats, species, races and traditional knowledge should also be encouraged.

A clear policy should be evolved to limit and control infrastructure development in natural grasslands, wetlands, wooded land and agricultural land.

Finally, training and awareness programmes should be organised for government employees, youth, women, tour operators and their staff. Above all else, cooperation between the many organisations / individuals working in the field of biodiversity should be ensured.

Strategy III – Address Energy Concerns

- Encourage use of renewable energy
 - Use solar and micro-hydel energy to the maximum extent possible
 - Explore use of geo-thermal and wind energy
 - Increase production of local bio-mass
- Practice energy conservation

There should be increased use of solar energy for heating and lighting purposes, electricity generation, space heating, and food production (through green houses) in Ladakh. All new construction should be such as to gain solar energy directly from the sun.

Micro hydel projects should be fully tapped, and energy conservation should be encouraged. Studies should be conducted on the feasibility of setting up such projects at potential sites. Projects that are currently languishing should be forwarded to the MNES for funding.

The exploration and use of other forms of renewable energy (such as wind and geothermal) should also be explored. For this, potential sites should be studied. For wind energy in particular, data should be collected from places such as Nubra and Changthang. There should be increased production of local biomass for use as fuel and timber in the region.

CHAPTER XII

SOCIAL & CULTURAL VALUES

Chapter Summary

We live in a world that accords an increasingly elevated status to economic prosperity, above all else. While the pursuit of material happiness is a worthy exercise and one that modern-day civilisation has done well to espouse, it seems that somewhere along the way, the importance of social and cultural values has been forgotten. Ladakh is not an exception to this development. Though connected to the outside world barely for forty years, it has already shed much of its traditional wisdom and cultural heritage.

It is of the greatest importance that we try and arrest this decline in the social and cultural heritage of Ladakh, if the region is to retain its original identity. The preservation of traditional values systems, revival of ancient cultural practices and greater support at the institutional level for social and cultural issues are some of the measures that need to be taken in this regard.

Embracing the Future, While Valuing the Past...

The importance of social and cultural values for the development of any society is immense. Without such a guiding framework, the people of a community would be lost and unable to decide upon what is right and what is wrong. In today's world, when values seem to be getting distorted and turned on their heads in the name of modernism, it is all the more important that a society has the moral compass to guide it through these uncertain times. Ladakh must therefore have a social and cultural value system to fall back upon. Nothing less is at stake than the very identity of this region.

In addition, Ladakh's traditional heritage constitutes a unique and irreplaceable resource for the global community. Endowed with such precious value systems as secularism (Buddhist, Muslims, Christians and others have all stayed harmoniously in Ladakh for centuries), respect for human rights and a sense of responsibility that transcends merely the interest of the self, personal space and contemporary time, there is much that Ladakh can teach the world today. For this reason too, there is great potency in the argument that Ladakh's culture and social values should be sustained.

Finally, an immediate problem is that Ladakh draws thousands of tourists every year in the summer months, many of whom bring with them certain elements of their culture that are undesirable. The image of hash-smoking hippies comes to mind, of whom Ladakh gets its fair share every year. If we are to protect our youth from such negative influences, arming them with our traditional value systems is the best measure we can adopt.

Current Status & Problems

The main problem that Ladakh currently faces with respect to its social and cultural values is that they are in a general state of decline across the region. While this can be attributed to a variety of reasons, the manifestations of this problem occur in the following forms.

Decline of Traditional Ladakhi Values

Ladakh was traditionally an egalitarian society, where peace and social justice were accorded a higher status than economic prosperity. Ethics were upheld in everyday life. People cooperated with each other and lived in harmony with their natural surroundings. In recent times, this code of life that Ladakh was famous for seems to be unravelling right before our eyes.

Loss of Ladakhi Cultural Heritage

Ladakh's culture can be broadly represented by certain well-defined streams of knowledge (such as Buddhist Philosophy, Ladakhi medicine and astrology, traditional art forms, Ladakhi language and literature etc). These have been in a state of stagnation and neglect for the past many years.

Inadequate Institutional Support

The local government itself is yet to accord the importance that it should to the preservation of Ladakh's social and cultural wealth. There is no representation of these issues in a formal manner at the level of the Hill Council. The annual budget allocates precious little to the development of this field.

Vision Statement

Ladakh as a prosperous, harmonious and happy society, which firmly upholds its core social and cultural values and distinctiveness while pursuing goals of economic self-reliance, and is a model of social justice and respect for universal human values.

Strategies

Strategy I – Retain Traditional Value Systems

- Promote positive traits of Ladakhi society:
 - Sustainability, progress with peace and social justice
 - Concern for environment
 - Social security for disadvantaged sections
 - People's participation in decision making
 - Civil society initiatives

Traditional Ladakhi society had a unique way of viewing life. In this approach, sustainability, peace and social justice took precedence over material prosperity. With the advent of the modern economy in Ladakh, all this has started to change. As more and more Ladakhis turn towards an urban lifestyle and become a part of the rat race, the calmness that used to be an essential characteristic of Ladakhi society seems to be dissipating with every passing day. There is a great need to arrest this trend. While keeping in step with the times is prudent and we must adopt all that is good in other cultures, we would not like Ladakh to become a lopsided society where economic progress takes priority over everything else.

Again, concern for the environment and a sustainable lifestyle in perfect harmony with their natural surroundings was the legacy that was passed on to us by earlier generations of Ladakhis. Unfortunately, many Ladakhis today have decided to forsake this legacy, and plunder their natural resources for short-term monetary gains without realising the disastrous long-term consequences of such an approach.

Disadvantaged sections in Ladakhi society should not be left to fend for themselves. Instead, they should be integrated into the mainstream society through a variety of measures (such as vocational training for school dropouts, self help groups for women, family and alternative care for the elderly, special steps to take care of the disabled etc).

Also, civil society in Ladakh should be encouraged to play a greater role in the development of the region. In this regard, micro-level planning and governance initiatives should be introduced, and people should be included in the decision making process. In traditional Ladakhi society too, democratic and participatory norms were greatly upheld particularly at the village level.

Strategy II – Preserve Gems of Ladakhi Culture

- Ensure continued support for traditional streams of Ladakhi culture
 - 3 Shiksha (Discipline, Meditation, Wisdom)
 - Ladakhi language
 - Traditional art forms
 - Ladakhi system of medicine and astrology
 - Study of Logic and Spirituality

In order to revive the Ladakhi language, the use of Ladakhi should be promoted for all official work. In schools also, Ladakhi should be instituted as the medium of instruction from Classes I to V, and treated as a compulsory subject up to Class X or XII. Teachers should be recruited after taking due consideration of their knowledge of Ladakhi.

In day-to-day life, the use of Ladakhi can be encouraged through such measures as instituting the use of Ladakhi signboards. Apart from this, Ladakhi should be recognised in the 8th schedule of the Indian Constitution and given place in the J&K Constitution. A separate department for Ladakhi should be instituted at the college level. Ladakhi literary works should be encouraged (though certain standards should be maintained while doing so). Finally, an expert committee on the Ladakhi language needs to be constituted.

The traditional art forms of Ladakh include folk dances, folk music, folk songs, folklore, paintings, sculpture, traditional architecture and woodcarving. There is a great need to preserve these art forms, while at the same time use them to become a source of employment for many Ladakhi youths. In this regard, the training of young people as apprentices needs to be given importance. The vocationalisation of education (by setting up polytechnics, for example) needs to be given importance. Further, certain traditional Ladakhi monuments should be declared national heritage sites.

Ladakh's traditional Amchi / Sowa Rigpa system of medicine should be incorporated into the health policy of the district and given the recognition and respect due to it. In this regard, formal accreditation should be sought for Amchi medicine from a reputed body (perhaps along the lines of Ayurvedic medicine). Apart from preserving an age-old knowledge system, this will also help in tapping the great commercial potential that exists for Amchi medicine. A special institution (with R & D facilities) dedicated to the Amchi medical system should be set up. In addition, the Amchi stream should be given increased budgetary support.

A framework that merges logic and spirituality needs to be evolved for Ladakh, which would act as a guiding principle for the entire region. Students seeking to study logic and spirituality should be encouraged. Religious books, teachings, and moral education should be incorporated into the school curriculum to take their full advantage for guiding our young minds. A separate department on spiritual knowledge should be set up in colleges and universities, where the 8 noble paths, 3 shikshas etc may be fully tapped to guide society. Also, the ethical use of natural resources must be stressed upon.

Strategy III – Protect Vulnerable and Disadvantaged Sections

As mentioned earlier, vulnerable sections of the Ladakhi society should be provided effective social security in the changing scenario. Ladakh's ability to adhere to the principles of social justice while pursuing goals of economic development should be gauged by its capacity to care for vulnerable and disadvantaged people. The following eight categories should get particular attention in terms of policy and practice: 1) Realisation of the rights of every child, 2) Empowerment of women in terms of economic self-reliance, organization and increased participation and representation 3) Addressing vulnerabilities of young people, 4) Strengthening support mechanisms for the aged, 5) Ensuring integration and fulfillment of the special needs of disabled people, 6) Adequate safety nets for the resource poor, 7) Inclusion of the socially marginalized, and 8) Safeguarding the interests of religious and ethnic minorities. In addition, considering the vulnerabilities of the region itself to natural and man-made disasters, strengthening the existing mechanisms for disaster preparedness, at various levels, would undoubtedly be a sensible strategy.

Strategy IV – Increase Institutional Support

It is proposed that a place be created on the Hill Council for a representative especially dedicated to upholding the social and cultural heritage of Ladakh. Further, the Ladakh Cultural Academy should be strengthened and given appropriate allocation of funds.

CHAPTER XIII

MICRO LEVEL PLANNING & GOVERNANCE

Chapter Summary

Participatory Planning is an approach that is gaining prominence and recognition not only in Ladakh but also in the rest of the country and indeed the world. Years of working with a top-down developmental model has made it amply clear to policy makers around the world that the only way a plan can succeed on the ground is if it emanates from the people themselves that it is aimed to benefit. It was in 1995 that the LAHDC Act came into existence in the Leh district. This event marked a watershed in the history of development planning in the J & K State, as for the first time the power to set development priorities and approve plans in accordance with them had been devolved to a district-level elected body. In recent times, the constitution of Halqa Panhayats in Ladakh is another breakthrough in the devolution of the planning process further down to the grass root level. Legislative and administrative measures should be taken to evolve mechanisms for dovetailing the LAHDC and Panchayati institutions. Perhaps most importantly, the political will to usher in these changes is required in order to ensure effective devolution of powers to District, Block and Village levels.

People's Participation – The Key to Real Progress

Over the past 57 years, 'development' was largely a top-down, bureaucratic affair, based on plans that marginalised people's participation and scoffed at indigenous knowledge systems to a very great extent. Naturally, acceptance levels amongst the common people for such an approach was (and continues to be) very low. In Ladakh, the situation is not very different, and we have our fair share of government schemes that failed to take off on the ground.

At the same time, the current planning process in Ladakh is extremely sectoral in outlook, meaning thereby that individual sector plans are often made in isolation from one another without any attempt to integrate them into a coherent holistic strategy. The most regrettable aspect of this approach is that for most sectors now, framing a development plan has simply boiled down to the level of a mere ritual, the sole objective of which is to ask for a 10% increment in funds over the previous year's allocation to the sector. The results are predictably depressing: Even plans that are ten years apart can seem to be close replicas of each other in Ladakh.

After fifty-seven years of failed development schemes based on non-participatory principles, the devolution of power to the masses has become the new mantra for all development work in the country today. The 73rd and 74th Constitutional Amendment Acts (1992) on Panchayati Raj in general and the formation of the LAHDC (in 1995) in particular were a concrete outcome of this official change in stance. It is for these reasons that micro-level planning (MLP) and governance assumes great importance for the future of Ladakh.

Current Status & Problems

The current status of MLP and governance in Ladakh may be summarised by just one line: It has yet to be implemented on the ground.

Being a sector that is just coming into prominence in Ladakh, MLP and governance does not have many ‘problems’ associated with it as yet. These will emerge (and we will have a better grasp of them) only after it has been tried to implement MLP in Ladakh on a widespread basis and in a serious manner. Nevertheless, certain things that may pose obstacles to the progress of MLP and governance in time to come are:

Absence of Institutional Framework

MLP and governance can only be implemented on the ground if it is complimented by the existence of appropriate Panchayati institutions that can handle such an approach. In this regard, Halqa Panchayats (HPs) have not been adequately empowered and Block Development Councils (BDCs) are yet to be constituted. A chain is only as strong as its weakest link, and if these institutions are not put in place and organically linked together all our efforts to bring about MLP and governance in Ladakh will come to naught.

Reluctance to Change

Though there is overwhelming evidence from around the world that MLP is a highly successful developmental approach once it gets underway, the authorities in Ladakh have still not accepted the concept fully. There is a reluctance to let go of the top-down approach towards development in favour of a more people-centric approach. This attitude must go before MLP and governance can take up roots in the region.

Current Inadequacies of Local Population

Perhaps the most significant obstacle of all in the way of rolling out MLP and governance in Ladakh is that the people of this region – after years of being told what is best for them by others – may not be fully equipped to take up matters relating to their own development in their own hands. This is not at all an unexpected development, and the world over it has been seen that there are significant hiccups before MLP can really stabilise in any community. Nevertheless, we must be prepared for an initial phase in Ladakh too when MLP will, for instance, throw up demands for helicopters from individual villages asked to put forth their own plans.

Vision Statement

To enable the existing planning process in Leh district to match the spirit of the Panchayati Raj Act and the LAHDC Act, by introducing a system of micro-level planning and governance at the village and area levels through Panchayati institutions, so as to ensure that the district development plan truly reflects the perspectives and priorities of the people.

Strategies

Strategy I – Make Preparations on the Ground for People’s Participation

The first step towards ushering MLP and governance in Ladakh is to empower HPs as the basic unit of district planning and to accelerate the constitution of democratically elected Block Development Councils and the Municipality (Leh Town).

Next, there should be a policy decision by the LAHDC to have MLP as the basis for all developmental and planning activities in the Leh district. A planning process should be developed based on priorities set by village communities and approved by Halqa Panchayats and Block Development Councils, with the active involvement of various other actors including governmental agencies, NGOs and community based organisations. Further, there should be a directive from the LAHDC that from the year 2007-'08 (the first year of the 11th Five Year Plan), development schemes in all sectors should be based on village development plans.

The training of the local population would also be urgently required if MLP is to be a success in Ladakh. Currently, the people of Ladakh (after years of getting their plans from the higher-ups) are not in a position to take full advantage of an opportunity to forge their own futures using a participatory planning approach. In order to build their capacities so that they are able to do so, an ad hoc District Planning Committee (DPC) should be constituted as the focal point for promoting and executing MLP in two phases – the Pilot Phase, and the Implementation Phase – in Ladakh. The DPC so formed will develop guidelines for the people, spelling out the thematic priorities of the district plan and indicating the broad budgetary allocation under each head. This will be done so that the MLP process brings in the best of the participatory approach without going overboard and neglecting the broad directions set by the Central Government, the State Government and the LAHDC. Capacity building measures for the people with respect to MLP would also include the development of a module for conducting situation analyses by Multi-Disciplinary Teams (MDTs) at the village, area and block levels.

Finally, MLP and governance is a learning-by-doing exercise, and others’ experiences from around the world in this field suggest that it takes a while before a community really grasps the use of this tool to its best advantage. It is therefore proposed that MLP and governance be introduced in Ladakh first on a pilot basis in certain areas, before the actual implementation phase is started in 2007-'08. In this regard, areas where the pilot phase will be rolled out should be identified, involving a MDT consisting of practitioners from government and NGOs (PIAs of WDP in particular). A resource team with the District Planning Office as the nodal agency should be constituted to ensure coordination. The pilot phase should be carried out in a manner complementary with the existing planning process, ideally in the year 2005 so that it can feed into the conventionally developed plans for the year 2006-'07. The development plans so produced should then be compared with the plans developed for 2006-'07 using the existing approach, and modifications made in the latter if found appropriate after the comparison. Finally, the pilot phase should be used to review the strengths and weaknesses of MLP in Ladakh, and a framework should be adopted for the implementation phase.

Strategy II – Implement Micro-level Planning and Governance

Once a framework for implementation is finalised, MLP should be rolled out throughout the Leh district between November '05 and October '06. For the formulation of village / area / block development plans in a participatory manner, MDTs should extensively analyse the situation at the gram sabha level (using participatory methods). The information thus obtained should be analysed at the HP / Area / Block levels, complimented with secondary data. The focus should be particularly on the people's perceptions of their problems, needs and priorities. At each level, the MDT should produce five-yearly plans that are shared with the constituencies concerned for confirmation of facts and findings before finalisation and submission.

Systems should be developed to further MLP and governance in Ladakh. In this connection, DPCs and MDCs (in each block) should be formally constituted. The village/ area / block level plans should be recognised as the basis for developing complementary strategies. Mechanisms should be evolved for the yearly review of plans at the HP / area / block levels, and linking them with departmental and district plans. Sectoral and technical committees should also be formed at Halqa, Block and District levels. Two important issues need to be addressed: a) to encourage local initiatives (on matters that can best be dealt with locally) by HPs and BDCs through creating a budget head under each sectoral department concerned on 11-15 subjects (identified by PR Act for devolution to Panchayats) with a percentage of funds earmarked for utilisation by HPs and BDCs respectively, b) to expand the mandate of LAHDC by devolving to it effective powers on policy making, resource mobilization, altering/ creating institutional setups, dealing with matters of personnel etc., crucial for the realization of the Vision.

Finally, a separate budget should be provided for the entire MLP and governance exercise in Ladakh. While the pilot phase could be jointly funded by the LAHDC and NGOs, a longer-term strategy would be to create budget heads for MLP (including provisions for capacity building measures) with the Department of Planning (under DPC), sectoral departments concerned, BDCs and HPs.

CONCLUSION

The Ladakh 2025 Vision Document is the outcome of much hard work and effort. It has been put together after holding innumerable discussions across a wide cross-section of Ladakhi society over the past many months. The rich and fruitful debate that resulted as a consequence of these discussions threw up an invaluable list of suggestions and ideas for the betterment of Ladakh, all of which are contained within the Vision Document. As such, this document is an extremely important resource for the people of Ladakh, with the potential to transform their lives significantly.

However, A Vision is only as effective as the action that it is backed-up with, else it remains a statement of intent. The Ladakh 2025 Vision Document must not be relegated to the realm of high brow academic seminars and dusty library shelves. Instead, it must become a thriving, pulsating, all-encompassing mission, to be implemented in the remotest corners of Ladakh on a war footing. The Vision Document provides us with a direction in which to run. Now, we must do precisely that: Speed towards our future with all the energy we can muster.

Action alone, however, will not be enough to realise this Vision. There must also be proper coordination between the work done by the different departments that will be entrusted with this Vision. All initiatives must be designed to complement each other, and at no cost must any duplication or, worse still, contradiction between different departments' work be allowed to occur. Convergence, then, is the need of the hour.

Further, once the implementation of the Vision is underway, there would be a great need to put in place a monitoring and reviewing mechanism for periodically assessing the progress of the Vision on the ground. For this purpose, it would be best to employ an external agency that would act free from governmental interference and conduct objective appraisals from time to time.

Finally, in formulating this Vision for our homeland, we have not lost sight of reality. It is amply clear to us that implementing such a Vision on the ground will involve a cost. Though it is extremely difficult to estimate that figure at the present moment, in all probabilities it is likely to be a significant amount. We hope that when the time comes, the authorities will not be found wanting in their monetary support for this document and all that it proposes. Nothing less than the future of Ladakh would be at stake.
