



The Administration of
Union Territory of
Ladakh

LADAKH VISION 2047





Shri Radha Krishna Mathur
Hon'ble Lieutenant Governor
UT Administration Ladakh

Message

With amazing snow-capped mountains, pristine environment, numerous natural, ecological and tourism sites, Ladakh is the alluring crown of India. Even with challenges such as connectivity, terrain and climatic conditions, Ladakh has made relentless efforts for development in accordance with the vision of the Hon'ble Prime Minister.

Ladakh's Vision 2047 incorporates sustainable development goals and an ambition to make Ladakh Self-Sustainable, SMART, Integrated and Carbon Neutral. It is based on 3C approach i.e. Community (Citizen Centric Development), Connectivity (intended to attain 100% Accessibility and Mobility) and Clusters Development (Decentralized Regional Development).

Hon'ble Prime Minister has been laying great emphasis on Social, Economic and Physical infrastructure development in Ladakh. Numerous projects under various flagship schemes and Special Development Package have unleashed youthful energy to the development task. Ladakh proposes to work with both national and international stakeholders to achieve its Goals and Ambitions while ensuring biodiversity and natural environmental protection in order to deliver long term welfare and benefits in a sustainable manner to the present and future generations.

I would like to thank NITI Aayog for their help and guidance in preparing this vision. I would like to congratulate various Departments of Administration of UT Ladakh, who have worked tirelessly towards the formulation of Vision 2047 and have coordinated extensively with the central agencies, various consultants, Hill Councils, elected representatives and the people of Ladakh. I sincerely hope that people of Ladakh and all the stake holders will come together to achieve this vision.



Radha Krishna Mathur
Hon'ble Lieutenant Governor
UT Administration Ladakh



Feroz Ahmed Khan
Chairman/Chief Executive Councillor, LAHDC Kargil
Status of Cabinet Minister
UT Administration Ladakh

Message

I am pleased to know that the Union Territory of Ladakh has come up with a Vision Document 2047. A lot of brainstorming has happened in the making of this vision document. Ladakh has a pristine environment and unique geo-climatic conditions which necessitates special considerations in terms of developmental policymaking. The UT Administration under the able leadership of hon'ble Lieutenant Governor Shri R K Mathur Ji and the Ernst & Young team deserve all the appreciation for coming up with a holistic development map for the future of Ladakh. Coming up with a long-term planning for a period of around 30 years, within two years of the inception of UT Ladakh, is indeed a courageous step. It goes on to show the determination of UT Administration towards a sustainable and prosperous Ladakh.

Here, I would like to stress that Kargil district having a lesser geographical area presents a different set of challenges to policy makers. Comprising of various tubular valleys with the population residing in relatively denser pockets at sparse locations, the district doesn't fall under the normal planning standards employed elsewhere. However, it is praiseworthy that despite such challenges, the vision document has taken into account all the factors to arrive at an all-inclusive and holistic vision document.

It is a pleasure to note that the feedbacks provided visa vis the LVD 2047 draft has been incorporated in the final document. Such inclusive approach in planning is highly commendable. Planning provides direction for action and with this vision document in hand, I feel, our journey towards a better tomorrow will catch pace. I would like to thank all the teams and agencies involved in the preparation of this document and hope that we all together contribute towards a better Ladakh for all. I would also like to assure all possible support from the LAHDC in implementation of the vision document on the ground.



Feroz Ahmed Khan
Chairman/Chief Executive Councillor, LAHDC Kargil
Status of Cabinet Minister
UT Administration Ladakh



Tashi Gyalson
Chairman/Chief Executive Councillor, LAHDC Leh
Status of Cabinet Minister
UT Administration Ladakh

Message

I am pleased that Ladakh Vision Document 2047 is finally coming out. I feel privileged to issue this message. Before August 05, 2019, the vision of Ladakh was about what we had to do to get our due share in the scheme of things of erstwhile J&K state. It was about how we struggle to survive & protect our rights from the Kashmir-centric governance. This VISION 2047 UT OF LADAKH is about the future we craft to realize the future we deserve. Therefore, this vision document is very important in setting out Ladakh's long-term economic, social and environmental strategic goals, in the context of our weaknesses, strengths, & capabilities.

visioning is important as most of the problems, we face as a society, are long-term, whereas the instinctual solutions we offer are short-term quick fixes. Therefore, to avoid this temporal myopia, a vision document is very imperative, else, we as a district, as a UT, will go astray. LEH VISION DOCUMENT 2030 is already in the public domain, prepared painstakingly via a bottom-up approach. This vision document, a long-term strategic direction, is for the whole of Ladakh. I hope the UT administration must have ensured consistency & harmonization between the two vision documents.

Having a vision document may sometimes push us into a conceptual world of wishful thinking & complacency. A vision document is about desirability, it has to pass the test of feasibility. Ladakh, as part of the globalized world, there are countless factors, which are beyond our horizon, working to determine the future trajectory of the world. We may have to tamper with our vision to meet the challenge of the time. Moreover, this vision document, however good it may be, it is the person implementing the nitty-gritty of it, matters. I am sure, Hon'ble Lt. Governor, Shri. R. K. Mathur, at the helm of affairs, we will be successful in translating the vision presented in this document into concrete realities, which, ultimately, touches the lives of the people for the better. With sincerity of efforts & purpose, by all stakeholders, this vision document will make this region a model of hill development.



Tashi Gyalson
Chairman/Chief Executive Councillor, LAHDC Leh
Status of Cabinet Minister
UT Administration Ladakh



Jamyang Tsering Namgyal
Member of Parliament
State President – Bhartiya Janta Party
UT Administration Ladakh

Message

We live in a world of accelerating change. Change, pleasing and disturbing, is inevitable. Yet strategic planning & a shared vision offer the tool so that the change is what we envision, not what it brings to us. The Covid-19 has unsettlingly shaken the world. Even the most developed country and its sophisticated systems fall like the house of playing cards, unable to cope. Ladakh today is at the cusp of a great transformation. It needs a guiding vision and a set of strategies to create a prosperous, equal, & sustainable society. It is the minimum, the future generations, those in 2047, expect from us. We should think, plan and budget for 2047 & beyond the time is now.

I am pleased that administration of Union Territory of Ladakh, under the able leadership of the His Excellency Lt Governor, has come up with a commendable Ladakh Vision 2047. It is a timely and much-needed initiative. However, the actual test is how to move from the challenges we have today to the vision we have for 2047, which will require bold, decisive, and consistent action. With Ladakh becoming Union Territory, we have opportunities as well as challenges. It is a situation of either we swim or sink together. Now everything is on our shoulders. We cannot blame others. The gaze of India is on us. We have to set an example as UT for the rest of India. Happily, we have a supportive, caring & guiding government lead by Shri. Narendra Modi ji is at the centre. The present government is ready to go to any extent to help us realize our potential as a distinct region of India.

With the launch of this document, we have a vision & strategy, at the level of the highest policymaking. However, a centrally driven change is not always suitable to a region like Ladakh. We need to go further down at the district, department, Panchayat & community level with micro-planning and Strategizing with actionable targets keeping in mind this vision document. As the issues we face today require a collective & coordinated response from all stakeholders.



Jamyang Tsering Namgyal
Member of Parliament
State President – Bhartiya Janta Party
UT Administration Ladakh



Shri Umang Narula, IAS
Advisor to Hon'ble Lt. Governor,
UT Administration Ladakh

Message

Ladakh with its snow-capped peaks, clear blue skies, meandering rivers and with its iconic high passes is an awe-inspiringly beautiful region of India. Due to its remote location, unique ecosystem and extreme climatic conditions, Ladakh has developed at a relatively slower pace as compared to other Hill States of the country. Ladakh has limited connectivity to its neighbouring states during winter which substantially impacts its economy and public infrastructure.

With the reorganization of J&K State, Ladakh became a Union Territory on 31st October 2019, and its development has been a priority of Government of India. Ladakh - Vision 2047 has been prepared to creatively deliberate on the development potential of the region considering its sensitive ecology, rich heritage, culture and aspirations of local people. Being one of its kind, the region has specific requirements which have been reflected in this document.

Ladakh Vision 2047 is the first step to provide a broad direction and roadmap for formulating sustainable development plans for the UT over the next 30 years. This will also serve as a benchmark for mapping current development levels and measuring milestones of growth in the coming years.

I would like to thank Sh. Amitabh Kant, CEO, NITI Aayog and Dr. Yogesh Suri, Senior Advisor NITI Aayog for their valuable guidance and support in preparation of the Vision Document 2047. I would also like to record my appreciation of the efforts put forth by the Ernst & Young team led by Sh. Gaurav Mahashabdey in preparation of the Ladakh Vision Document 2047 and all the officers of the UT Administration for supporting and providing necessary inputs for making the Vision Document 2047 a comprehensive and futuristic document.



Shri Umang Narula, IAS
Advisor to Hon'ble Lt. Governor,
UT Administration Ladakh



Dr Pawan Kotwal, IAS
Principal Secretary,
Planning Dev and Monitoring Dept.
UT Administration Ladakh

Message

Sustainable economic activities and matching public infrastructure enable and ensure the overall socio-economic development of any society. Ladakh, with its serene beauty and unique ecosystem of a cold desert, has great potential for economic development and an immense scope for generation of clean Solar power to meet its own needs and also to serve the energy needs of the other parts of the country, respectively.

The Ladakh Vision 2047 document has been prepared after intensive deliberations with the line departments/development experts, stakeholders and the representatives of the people of Ladakh in order to plan and execute the development activities in the UT of Ladakh in an integrated and sustainable manner, keeping in view the local conditions, specific requirements, cultural resources, ecology and environment of the region. The document identifies the gap in the economic and infrastructure sectors of Ladakh and presents the development strategies specifically tailored to the needs of the region.

I extend my felicitations to all those associated with the conceptualization of the document. This document shall guide the Administration and the Autonomous Hill Development Councils of the UT of Ladakh in the formulation of development plans and help in fulfilling the aspirations of the people of Ladakh in a sustainable manner.



Dr Pawan Kotwal, IAS
Principal Secretary, PD&MD
UT Administration Ladakh

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
Executive Summary

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EXECUTIVE SUMMARY

The Union Territory of Ladakh

Ladakh - the Northern-most union territory of India, lies in the Greater-Himalayan ranges and shares its international border with China, Pakistan and Afghanistan. An extremely thinly populated UT, Ladakh has a density of only 5 persons per sq. km.

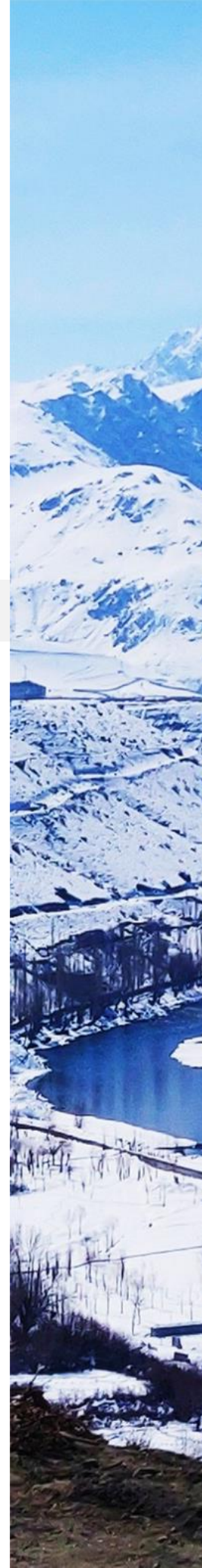
 2.7 Lakh Population in 2011	 23% Urban Population	 40,247 Households Avg. HH Size = 7	 46% Workforce Participation	 2 Districts Leh & Kargil	 25 Blocks 4 Towns & 238 Villages
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Until 1979 a single district, Ladakh, is now divided into two, Leh and Kargil District. The entire UT is traversed by the north-west and south-east Ladakh and Zaskar ranges, flanked on the north by the Karakoram Range and on the south by the great Himalayan range. Indus, Zaskar, and Shyok are the major rivers that flow through the UT.

Ladakh's climate is referred to as a "cold desert" climate due to its combined features of arctic and desert climates. These include wide diurnal and seasonal fluctuations in temperature, from -40°C in winter to $+35^{\circ}\text{C}$ in summer, and extremely low precipitation, with an annual 10cm to 30cm primarily from snow.

With increasing national and international influences: both becoming geopolitically integrated into India, and opening to tourism in 1974, have caused significant shifts in social structures. Primarily being an agrarian society, Ladakh has witnessed a shift towards service sector, especially the hospitality and tourism sector, in terms of employment and workforce share in last 2 decades.

The newly formed union territory after the Jammu & Kashmir State was bifurcated in October 2019, stands at the crossroads of economic development and preservation of culture, heritage and ecology. The region, owing to its extreme climatic conditions and topography has not witnessed the similar intensity of development as the other states and regions of the country.



EXECUTIVE SUMMARY

Key Challenges in Development of Ladakh

Infrastructure sector is the cornerstone of any State's economy and plays an important role in accelerating the growth of State's overall development. A glance at the current status of infrastructure in Ladakh reveals the challenges being faced by the UT in its socio-economic development:

Agriculture & Horticulture

Demand Supply Gap
~73 % food grains are imported & 85 % of Fruits are Imported

Less Cultivable Land
~0.37 % of the total Land area

Untapped Potential of Exotic Fruits
only 5 % of the total potential area

Power and Energy

~ 64% Energy Deficit in Winter

Only 74% utilization of Installed Capacity

More than ~ 25% **Transmission & Distribution Losses**

Only 6-8 hours supply per day in remote areas not connected to grid

Industries & Manufacturing

Absence of Large Scale Industries
~95% Micro and Small Industries

Minimal Food Processing Facilities
small scale food processing are less than 50

Untapped Potential of Pashmina and Handicrafts

Basic Utilities & Services

~96% **Households** without Functional Tap Water Connection

More than 38% **Water Supply Deficit**

Inefficient collection, transport, storage and disposal of solid waste

Lack of waste treatment facilities

Hospitality & Tourism

Restricted tourist season to summer season (4-5 months)

Absence of regulatory and monitoring framework

Insufficient infrastructure for safety and tracking of tourists

Limited Branding and Media Reach

Education

Limited access to digital education in schools

Challenges of physical facilities in government schools

Only two Industrial Training Institute (Only ~10% faculty available)

Transport & Connectivity

Minimal inter-state and inter-city public transport by road

Only 2 roads connecting Ladakh to rest of India, with **limited access during winter season**

Limited local and regional connectivity (54% villages do not have access to regular bus services)

Medical & Health Facilities

More than 20% population with no **access to District / Sub-District Hospitals**

Lack of Physical Infrastructure for Diagnosis and Treatment

Lack of digital infrastructure in terms of connectivity among PHC's, sub-district and district hospitals

EXECUTIVE SUMMARY

Vision 2047 for Ladakh

Vision 2047 for Ladakh is the stepping stone in formulation of a structured development blueprint to guide how Ladakh should be developed over next 30 years.

Guiding Principles

Self-sustainability, SMART Infrastructure, Carbon Neutrality and Integrated Development – the Vision 2047 for Ladakh is guided by these 4 underlying principles to drive sustainable development in the region.

3-C Approach

With its population scattered all around the hills in the remote locations, it is necessary to bring a sense of collectiveness and integration to develop strong community culture in Ladakh which in turn enables socio-economic development of its people. To address this, the Vision 2047 recommends to adopt a “hub & spoke” structure for balanced regional development. This is accompanied by 3-C strategy “Community, Connectivity and Clusters (3-C)” to ensure service access to all in the UT.

Focus Areas for Advancements

Vision 2047 targets specifically 2 focus areas – economic development and infrastructure development in the UT. Based on this, it identifies gaps in existing development scenario and proposes strategies to bridge gaps and exploit the potential available for development of UT.

Development Strategies

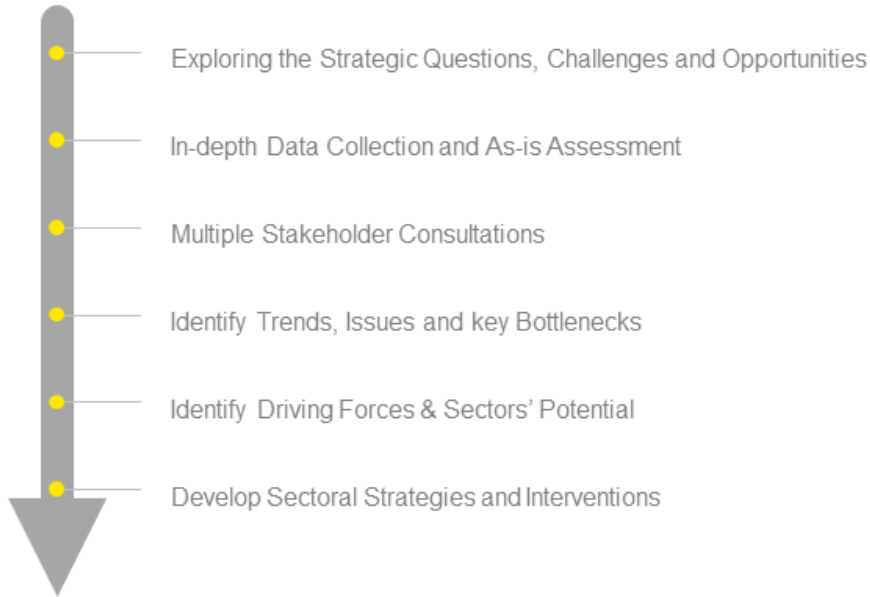
Vision 2047 proposes sector wise strategies tailored to specific local conditions of Ladakh. Realistic strategies, either being implemented or being planned by the other States of the country, and in line with Central Government policies have been proposed to ensure that these lead to formulation of implementable action plans further on.





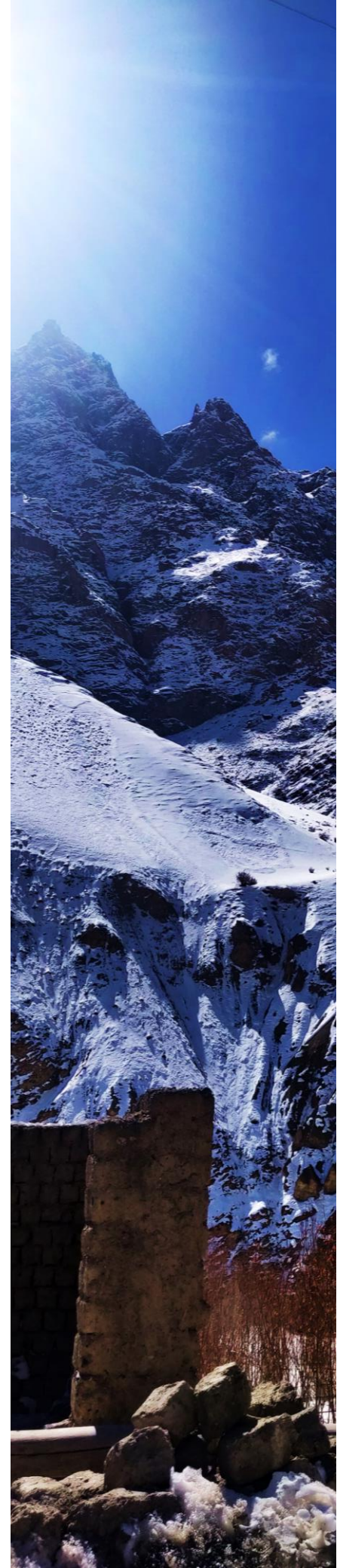
APPROACH

The formulation of Vision 2047 involved both quantitative and qualitative diagnostics of the existing development scenario through the secondary data available with the several departments of the UT Administration and through interactions with the UT officials, departments heads and even general citizens of the UT. This ensured the Vision 2047 captures the multiple viewpoints and addresses the needs of every stakeholder.

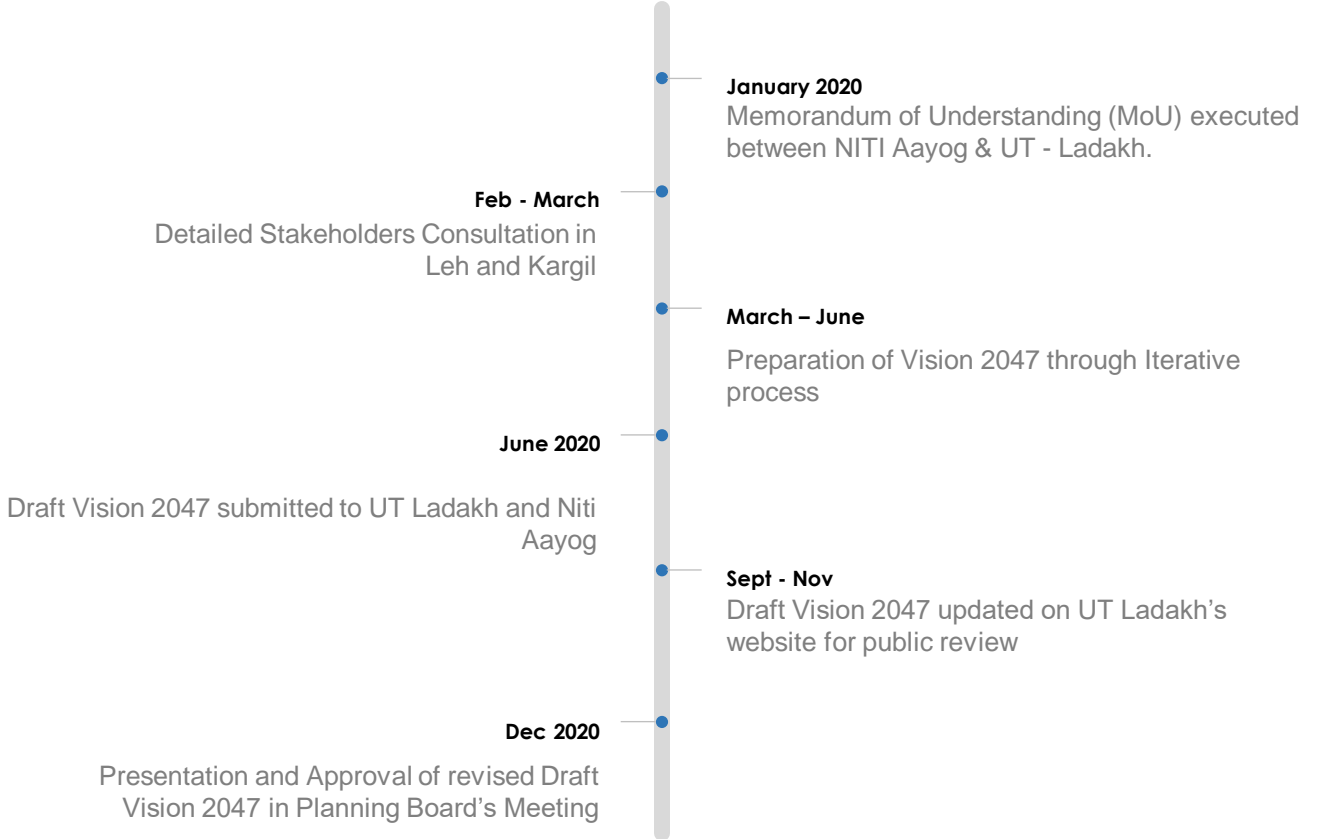


Moving on –

The Vision 2047 is a compendium of development strategies for target areas of economy and infrastructure in Ladakh. Its aim is to guide the formulation of sector specific short, medium and long term action plans which shall be the next steps in the development process.



CHRONOLOGY





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Background & Context

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BACKGROUND & CONTEXT

A Starting Point

While on the one hand the Indian states have witnessed enormous economic growth and developments in infrastructure sector in the last two decades, the Ladakh on the other hand, has not been able to develop at a similar pace. In terms of industrial development, education and health quality, public infrastructure and utilities, etc., Ladakh lacks significantly in comparison to the level of development in other UTs and Hill States of India.

The Good Governance Report published by the Gol, indicates the sectoral performance of states of India. While the report does not indicate the performance of Ladakh individually, but being a part of the J&K state, it is evident that neither the state nor the UT of Ladakh has thrived in terms of economy or infrastructure.

Current Scenario and Projected Growth

Situated in trans-Himalaya, Ladakh is characterized by a rugged topography at an altitude ranging from 2900 to 5900 meters above sea level. It has a vast geographical area of 59,146 km. sq., which is larger than that of Haryana State.

It is extremely thinly populated with a population of 2.74 Lakh as per Census 2011, growing at a rate of 1.65% per annum since 2001. At this rate, it is estimated to be 3.1 Lakh in 2020 and nearly 5 Lakh in 2047.

It has a density of only 5 persons per sq. km. 23% of Ladakh's total population resides in Urban areas currently and this urbanization is growing @ 6% per year.

	Leh District	Kargil District	Ladakh (Total)
Total Land Area (Sq Km)	45,110	14,036	59,146
Population (2011)	1,33,487 (49%)	1,40,802 (51%)	2,74,289
Decadal growth in population (1981-2011)	25%	33%	27%
Share of Urban Population (2011)	34.2%	11.6%	23%
No. of Households (2011)	21,909	18,338	40,247
Avg. Household Size (2011)	6.09	7.67	6.88
No. of Settlements	119	125	244



BACKGROUND & CONTEXT

DEVELOPMENT STATUS OF HILL AREAS IN INDIA BASED ON GOOD GOVERNANCE FRAMEWORK



LADAKH - NOW

Captive employment skills and opportunities

Reforms in education with local requirements

~ 40% of population has no access to available infrastructure

Lack of sufficient healthcare professionals and access to technology

Significant role of SME at household level

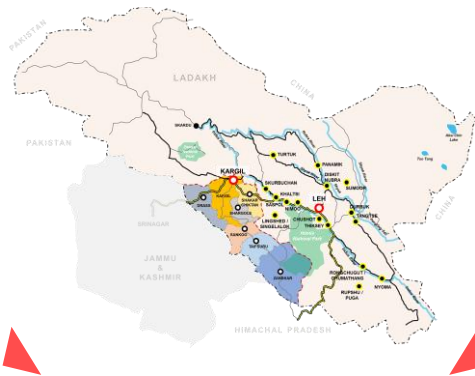
Offsetting through imports to meet food demand



KEY CHALLENGES

- 70% of the food demand is met by imports
- 95% industrial units are small scale household level
- Seasonal tourism sector

- Limited connectivity in seasons
- 54% settlements do not have accessibility options



- 36% deficit in Power Supply
- No power supply for 30% of the day



- 'Digital Divide' in telecom and IT
- High access to digital services in Leh and Kargil cities
- Limited access to CSC in other settlements



- 38% deficit in drinking water supply
- Limited access to piped water supply



- 20% population has limited access to specialized healthcare
- Avg. time to reach a district / sub-district hospital ~ 3 hours



- Localized education system
- Limited access to higher education institutes



- 95% waste disposed off untreated
- High dependency on plastic



OUTLINE



Average Household Size - 7

- Total Households = 40247 HH
- Leh District = 21909 HH (Size - 6.09)
- Kargil District = 18338 HH (Size - 7.67)

46% Workforce Participation

- Leh District : 56%
- Kargil District : 37%

Ladakh's population is growing @ 1.65% per annum (from 2001 – 2011)

Population in 2011 = 2.7 Lakh
Est. population in 2020 = 3.1 Lakh

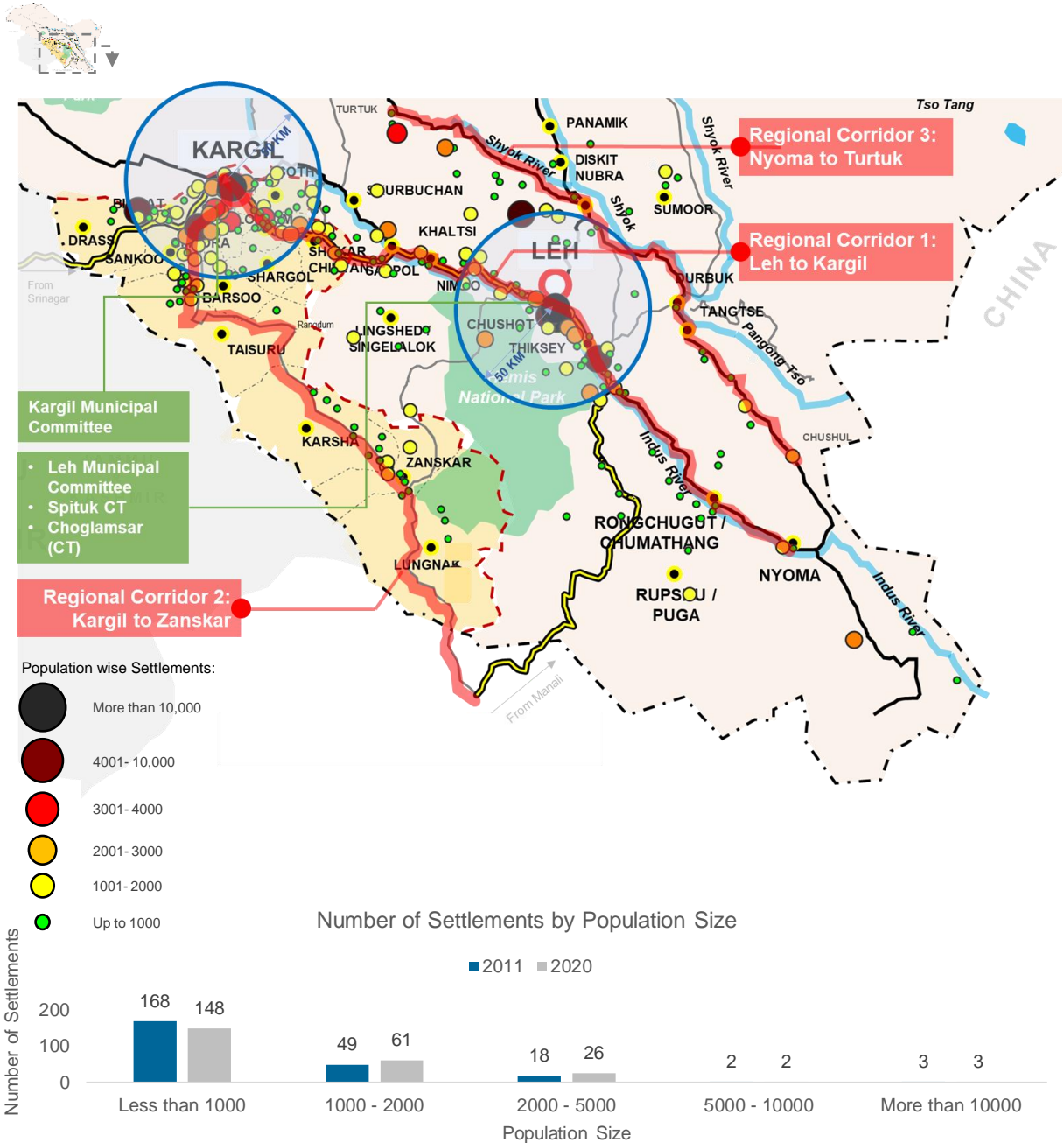
Administrative Structure – 2 Districts (Leh and Kargil)

Ladakh comprises of 4 urban areas and 238 villages in its 25 Blocks

Urbanization Growth Rate (2001-2011) = 6% per year

23% of Ladakh's total population resides in Urban areas currently and this urbanization is growing @ 6% per year

POPULATION DISTRIBUTION



65% of total population is in and around Leh and Kargil City
(i.e. within 50 Km)

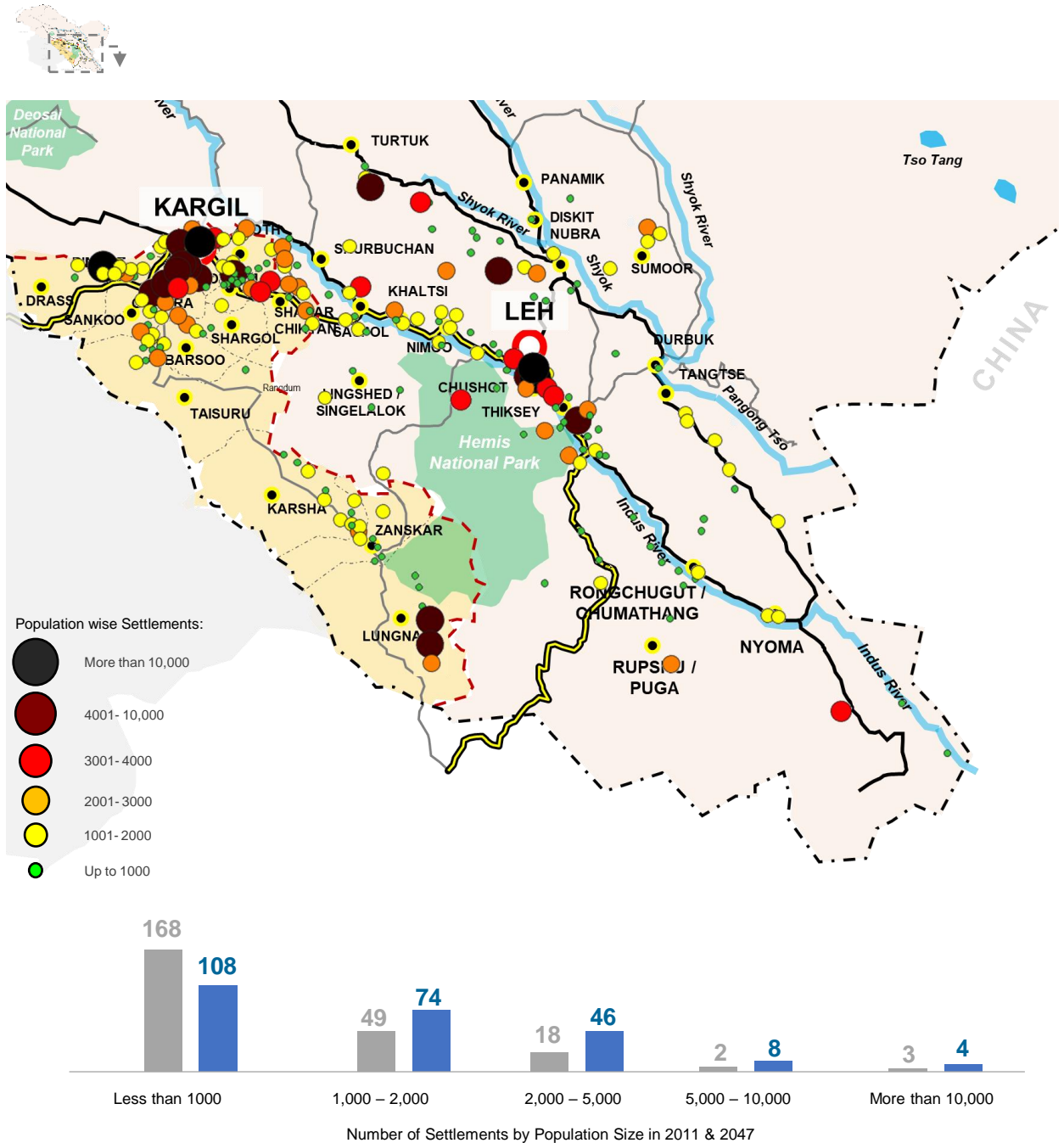
74% of urbanization is in and around Leh City
(including Spituk & Choglamsar CT)

90% settlements along the 3 Regional Corridors:

1. Kargil to Zanskar
2. Kargil to Nyoma
3. Turtuk to Chulshul

Rapid rural to urban transition

POPULATION IN Y-2047



Need to decentralize the development activities for balanced regional development

Most of the development activities are concentrated in Leh and Kargil. For balanced growth of UT, it is imperative to develop other regions

Leh and Kargil cities will continue to witness urbanization and become major Economic centres

Share of settlements with <1000 population will decrease from 70% to 45%

Population is expected to double up by 2047 (~ 4.68 Lakh)



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VISION 2047

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Vision 2047

Formulation of Vision 2047 for Ladakh has been approached from two angles. One, **the guiding principles** – Self-sustainability, SMART Infrastructure, Carbon Neutrality and Integrated Development – which guide the kind of development strategies could be implemented for sustainable development of Ladakh.

The other, **Community, Connectivity and Clusters – 3C Approach** – which focuses on the spatial aspect of the development focuses on considers balanced regional development to ensure that each settlement (city, town, village, hamlet) in Ladakh has access to essential services.

Self-sustainability, SMART Infrastructure, Carbon Neutrality and Integrated Development

Vision 2047 aims for:

- ▶ Self-sustainability in terms of food supply, electricity & power, industries & manufacturing, trade and commerce and most importantly, employment.
- ▶ SMART Infrastructure in terms of integration of ICT for optimum utilization, management and monitoring of infrastructure assets like SMART Grids, SMART Roads, efficient waste management and disposal systems, etc.
- ▶ Carbon Neutrality in terms of strategies to safeguard the ecological sensitivity of the region
- ▶ Integrated development in terms of integration of services to provide one stop solutions to its people

Community, Connectivity and Clusters – 3C Approach

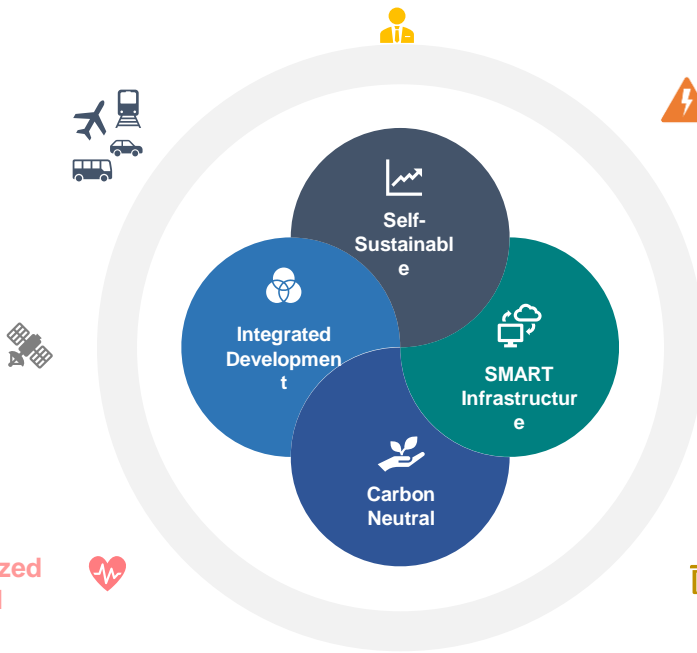
3C approach focuses on decentralization of economic activities and social infrastructure that would lead to balanced regional development in Ladakh. It identifies hubs and spokes of development which should be equipped with various essential services (at a scale depending upon the level of settlement) to ensure availability of essential services like employment, education, health care, etc, **within a travel time of 1 hour at-most** from anywhere in the UT.

Vision 2047

- Connectivity by all weather roads
- Green and sustainable public transport system

- Sustainable agriculture development
- Thrust on SMEs and Investment Promotion
- Development & promotion of tourism
- Surplus employment opportunities

- 30 GW of power generation
- Promotion of Clean Energy
- SMART integrated monitoring mechanisms



- Integrated CSCs across UT
- Digital platforms for easy access by citizens
- District CCCs for effective monitoring

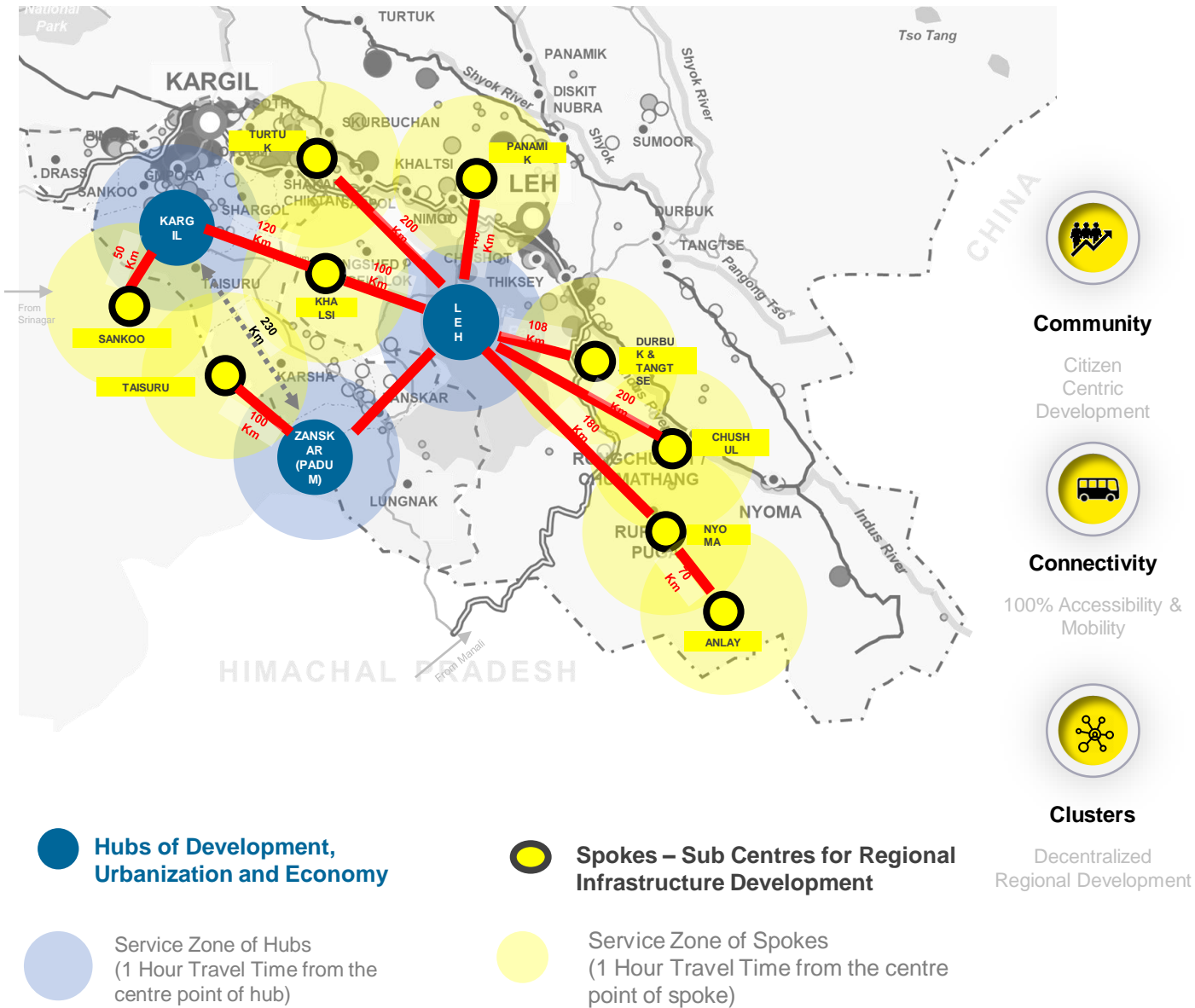
- Assured 24x7 quality water supply
- Tap Water Connectivity to every HH

- Access to specialized healthcare within 1 Hour
- Mobile medical units for on demand healthcare

- 'Zero Waste Ladakh'
- Waste to energy

- SMART education system
- Easy access to higher education facilities
- Skill development and employability

'3-C' Approach for Vision 2047





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Focus Areas for Advancement

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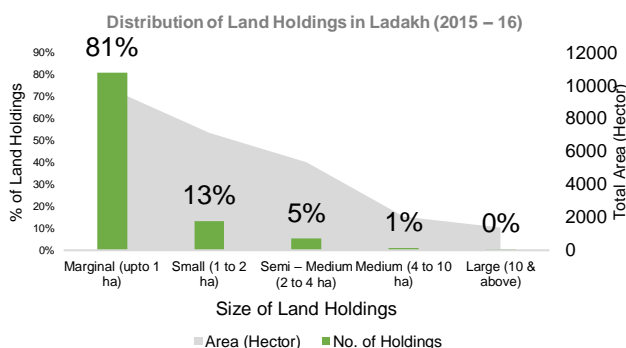
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Agriculture & Allied Activities

AGRICULTURE AND HORTICULTURE

BACKGROUND AND CONTEXT

- ▶ Agriculture in Ladakh is a way of life for the agrarian population and nearly 70% population is directly or indirectly dependent on this sector. Despite the vast geographical area, only 0.37% area is sown under agriculture.
- ▶ Single-cropping is dominant, as double-cropping is possible only in a limited area falling below an altitude of approximately 3000 m.
- ▶ Agriculture production is entirely based on irrigation. Glaciers are the main source of water for irrigation and the rivers that flow in the region remain underutilized for agricultural purposes.
- ▶ Majority of the households have small land holding; 81% households have less than 1 ha land (2017-18).
- ▶ Only 2171 hectare (0.04%) of agricultural land is under high yielding variety programme (2017-18), almost equally distributed in Leh and Kargil Districts.



Source: Agriculture Department, Leh & Kargil

ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ The UT gets approximately 73% of its food grain from outside the region. The vegetable import dependency is approximately 67%, while that of fruit is approximately 85%. Therefore, self-sufficiency in food is an important issue for the region.
- ▶ Ladakh region is known for production of **off-season vegetables** such as broccoli, cabbage, cauliflower, peas. However, due to poor market linkage, large-scale production of vegetable as off-season crops has not gained momentum in the region.
- ▶ **Apricot and apple** are the two major fruit crops of the region, and are prized for their quality. However, the production of the amount of fruit to meet the requirements to sustain a small and cottage scale industry, is on gradual increase. There is immense potential for large-scale production and marketing of quality organic apricot and apple from Ladakh.
- ▶ **Seabuckthorn** grows naturally in Ladakh without much of human interference. Recent discovery of the health benefits fetches a premium price even at the harvesting sites. Large-scale cultivation of Seabuckthorn has the potential to be a key means for sustainable development of cold desert of Ladakh.
- ▶ **Organic Farming:** There is rich potential for adoption of organic farming in Ladakh as the practice of inorganic agriculture is not that rigorous as compared to that in other parts of the country. While the national average for fertilizer use during 2016-17 was 123 kg/ha, it was only 52.1 kg/ha in Ladakh during 2017-18. This auger well for agriculture in the UT in terms of the already low levels of consumption of hazardous chemicals and, therefore, the chances of succeeding in motivating the farmers to adopt organic agriculture are quite high.

ANIMAL HUSBANDRY

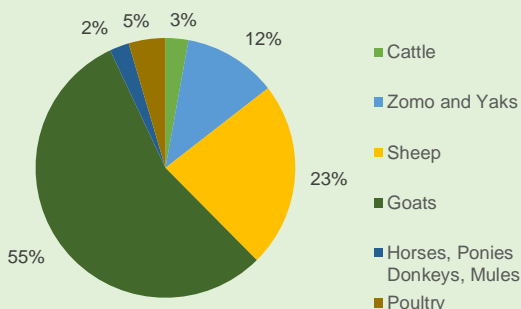
BACKGROUND AND CONTEXT

- ▶ The importance of livestock in the fragile ecosystem of Ladakh goes beyond its traditional role in terms of source of income. Since the region remains isolated for about half a year from rest of the world with limited access to food items; animal products particularly meat and milk play a pivotal role in meeting nutritional security of local people.
- ▶ As per the livestock census (2018-19), Ladakh has ~9 Lakh animal population, almost equally distributed in both the districts, which include species of Cattle, Zomo & Yaks, Sheeps, Goats, Horses, Ponies, Donkeys, Mules and poultry birds.
- ▶ The native livestock breeds of Ladakh are multipurpose with unique genetic characteristics and exhibit a distinct superiority over other breeds of the India which include adaptation to harsh or extremely cold arid dry climatic conditions, utilization of poor quality feed and better resistance to tropical diseases.
- ▶ Most importantly, the region is known for its Pashmina goat (Changthangi), primary raised for its valuable pashmina wool which is the costliest fibre on earth
- ▶ Animal healthcare facilities in Ladakh include 270 Veterinary units and subunits including Sheep centres & farms.

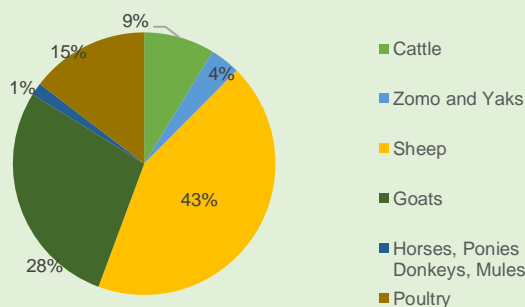
ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ Shrinking and degrading pastures coupled with limitations of fodder are the major constraints for livestock husbandry in Ladakh. There is no pasture management strategy or policy to regenerate over used pastures being implemented.
- ▶ Lack of sufficient veterinary care and apathy to assisted reproductive technologies is another concern. Inadequate facilities for surgical operations, specialized obstetrical procedures, advanced disease diagnosis, and disease surveillance and reporting is another impediment in smooth development of the sector.
- ▶ Value addition of animal based products, such as poultry, pashmina and A2 milk, has immense potential to change livelihood of the farmers of the region, especially, the potential of raising Pashmina goats, which remains under exploited.

Animal Population in Leh District (2018-19)

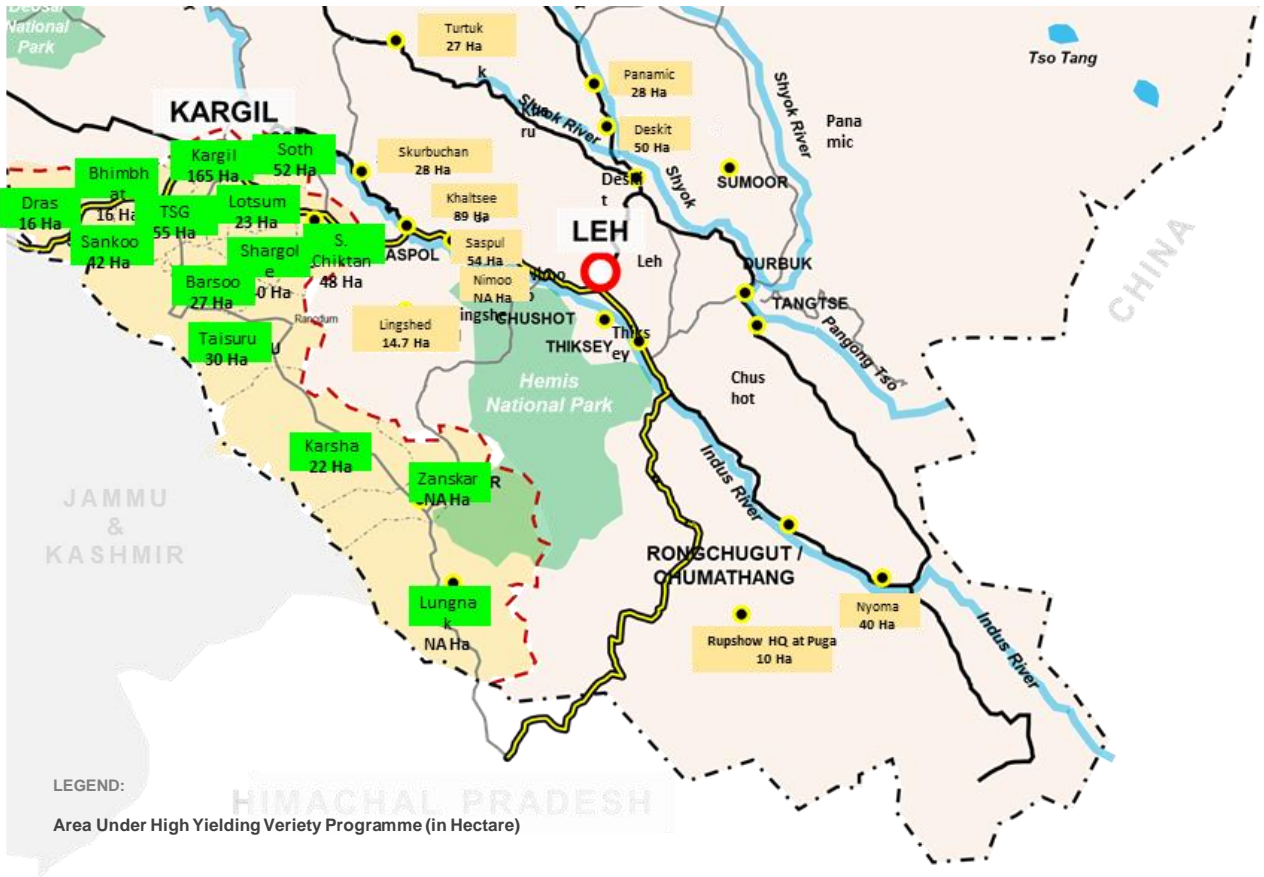


Animal Population in Kargil District (2018-19)



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AGRICULTURE AND ALLIED ACTIVITIES



Basic Statistics:

Area sown: 0.37%

Food Grain
Production: 1.0 Lac Qtl
pa

Fruits
Production: 1.6 Lac Qtl
pa

Demand Supply Gap

73 % food grains are imported
85 % of Fruits are Imported

Potential for Exotic fruits

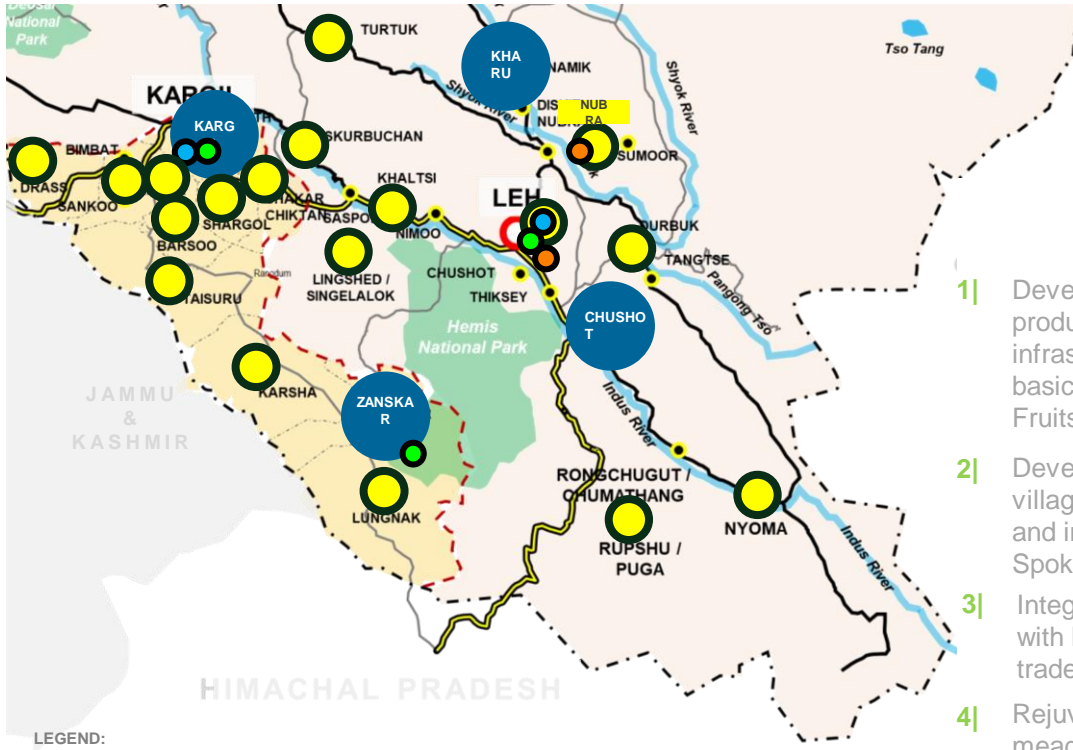
Seabuckthorn, Apricot, Buckwheat, Apple, Pear, Peach, Plum, Cherry, Grapes, Walnut, Almond

Average consumption of Fertilizer/Pesticide

Fertilizer: 60 kg/ha
National average: 123 kg/ha

Pesticide: 0.073 kg/ha
National average: 0.26 kg/ha

AGRICULTURE AND ALLIED ACTIVITIES



DEVELOPMENT STRATEGIES

- 1| Development of Agriculture production, processing & infrastructure clusters to produce basic, high value crops & Exotic Fruits
- 2| Development of Model organic villages and model farm marts and integration with Hub and Spokes
- 3| Integration of Organic Farming with Markets, value chains, and trade
- 4| Rejuvenation of pastures and meadows to upgrade their biomass potential to ensure availability of fodder for livestock husbandry
- 5| Community fodder banks cum grazing free reserves (15 - 20 ha) in each block for propagation of high value native forage species
- 6| Landscape level planning for livestock grazing for each block taking into account the summer and winter pastures, important watersheds, critical wildlife habitats, nesting sites of migratory species especially Black-necked crane
- 7| Strengthening of Animal Clinics / Laboratories

These Hubs would act as market areas for provision of seeds and fertilizers at subsidized rates and warehouses for logistics movement from UT

These centres would enable establishment of FARM MARTS and post harvest treatment centres would be covered under marketing schemes such as e-NAAM

 Greenhouse

 Skill Development Centre

 Controlled Cultivation Nursery



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4.2

Industries & Manufacturing

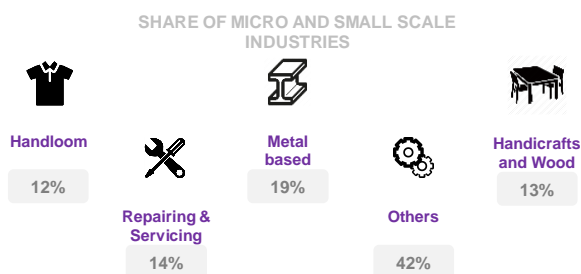
INDUSTRIES AND MANUFACTURING

BACKGROUND AND CONTEXT

- ▶ Ladakh is yet to make its mark on the industrial map of the nation. With mostly micro and small scale industries and less than 2% workforce engaged in industrial activities, the industrial sector in Ladakh needs a boost through policy reforms and development of infrastructure to grow.
- ▶ The District Industries Centre (DIC) in Leh and Kargil Districts are nodal agencies for all industries related activities in respective districts of Ladakh
- ▶ As of March 2011, the total number of industrial units registered (functional & non-functional) in Ladakh were 1267.
- ▶ 5 Industrial Estates have been developed till date, 3 in Leh and 2 in Kargil to promote industrial growth in the region.
- ▶ The industry mix includes handloom, handicrafts, metal based, wood based, food processing and service industry.

ISSUES, POTENTIAL AND CONSTRAINTS

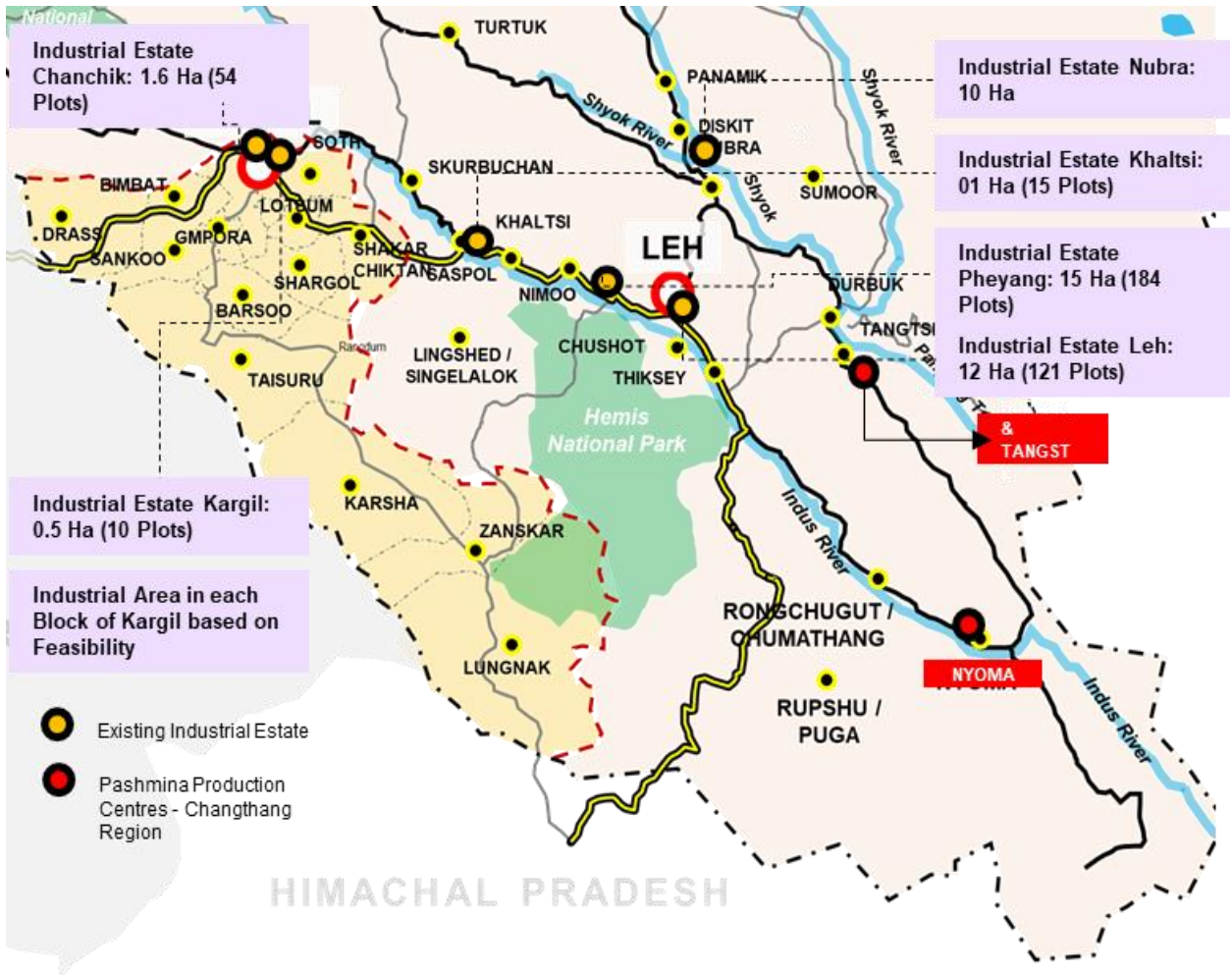
- ▶ Issues like non-availability of raw material, lack of constant power and water supply, harsh climatic condition, high cost of construction, transport & logistics, are major constraints which have held back the development of industrial sector in the UT
- ▶ Lack of trained manpower and consequently high labour rates prevalent in Ladakh are also significant obstacles falling under the ambit of socio-economic drawbacks.
- ▶ **Handloom – Pashmina Wool:** Pashmina is recognised as a luxury fibre and commands some of the highest prices in the world of textiles because of its extreme softness, elegance and lustre. Tapping the production of pashmina can result in an economic windfall for Ladakh.
- ▶ **Food Processing:** Ladakh also holds potential with regard to post-harvest food processing of apples, saffron, almond, walnut and other fruits and dry fruits. The industry has the potential to thrive in the UT due to an excellent climate for horticulture and floriculture.
- ▶ **Handicrafts:** Wood Carving / Carpentry, Carpet Weaving, Embroidery, Namda Making,, Fresco Painting (Thanka Painting) and Clay Moulding (Sculpture) are some of the specialised handicrafts embedded in the tradition of Ladakh. With adequate management and business planning, the industry has the potential to thrive.
- ▶ **Packaged Mineral Water:** The streams of fresh water descending from the Himalayas, and growth in tourist inflow, also provide Ladakh with the potential for 'Bottled Water Industry'. The industry has potential market at both levels – domestic in terms of tourists and in other states as an export commodity.



Source: District Industrial Centres, Leh & Kargil

Ladakh
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INDUSTRIES AND MANUFACTURING



95% Micro and Small Industries operated at Household Level

Handicrafts serves as the secondary revenue generator after agriculture and tourism

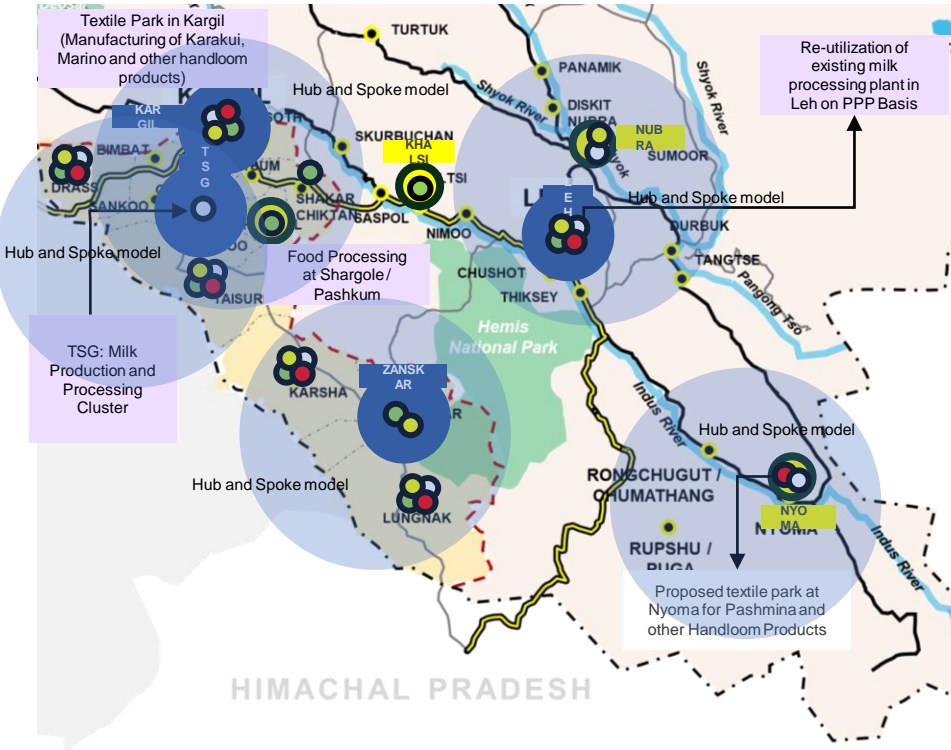
Out of 1270 total industrial units, small scale food processing are less than 50 and cater to domestic demand only

40-50 Ton of Pashmina wool produced per year in Ladakh, less than 1% of the global production per year

34 Handicraft Training Centres, but only 3000 trainees trained in last 5 years (23 Centres in Leh District & 11 in Kargil District)





Ladakh
Next

INDUSTRIES AND MANUFACTURING



DEVELOPMENT STRATEGIES

- 1] Framework for "Ease of Doing Business" for attracting investment promotion
- 2] Creation and sustenance of SME clusters with common infrastructure
- 3] Support infrastructure (dedicated freight network, way-side amenities and warehousing)
- 4] Strengthening co-operative societies to support village level growth opportunities
- 5] Quality standardization with international QC organizations
- 6] Trademark to support branding and marketing of finished products
- 7] Investment attraction through marketing and promotion in domestic and international markets
- 8] Adoption of technology centric breeding and rearing of animals for milk and wool
- 9] Capacity building of producers in animal health care, maximizing yield and quality control

-  Proposed locations for Food Processing Parks
-  Proposed textile park for Pashmina and other Handloom Products
-  Proposed areas for development of Handicraft Markets
-  Proposed locations for development of Milk Processing Plants



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4.3

Hospitality & Tourism

TOURISM

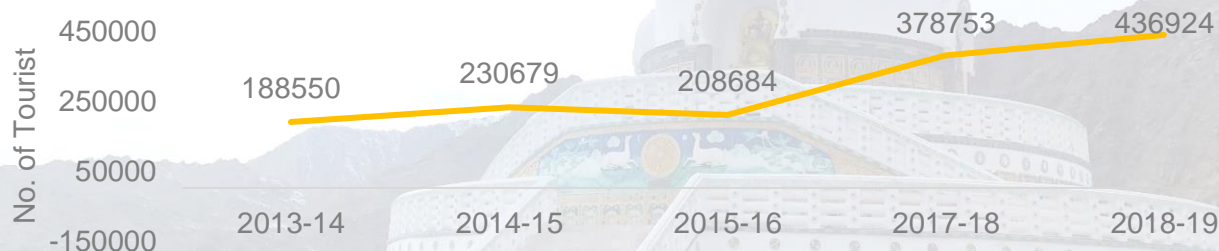
BACKGROUND AND CONTEXT

- ▶ Ladakh is characterised by harsh terrain, limited accessibility and extreme climatic conditions, which in turn provide unique cultural and spiritual diversity that act as a Unique Selling Proposition (USP) for tourism.
- ▶ The region officially opened for tourism in 1974. Ever since, tourism in the region has grown manifold. The tourist inflow has doubled from ~2 Lakh to 4 Lakh in last 5 years in Ladakh with an the annual average growth rate of 16%.
- ▶ As a result the scope of tourism operations has increased to include a multitude of stakeholders from government agencies, the private sector, non-governmental organisations, local communities and others.
- ▶ Tourism industry contributes to nearly 50% of Ladakh's GDP. As a result tourism has been in focus of several development plans of the region. Some of the key initiatives by the Government include, sanctioning of 104 mountain peaks in Ladakh region for adventure tourism, approving of mega projects to promote Ladakh as a spiritual and wellness destination, direct capital and interest subsidy for investment in tourism sector, and so forth.

ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ The existing tourism model of Ladakh comprises of highly diversified tourism products, provided across the value chain to cater to a wide variety of users. Religious, nature-based and adventure tourism have their own select niches within existing tourism. The demand for specialised tourism, particularly for adventure, is also on the rise in recent times.
- ▶ Challenges like no state tourism policy, inadequate human resources, limited investment in the sector labor force, along with most tourism business owned by outsiders hinder the development of tourism sector in Ladakh currently. On the top of it, the Covid-19 pandemic has hit hard the tourism industry all across the globe and in Ladakh as well.
- ▶ Still, Ladakh has rich culture and heritage, landscapes which are not only rare but unique for the world population, traditional handicrafts, civilization with harmonization of livelihood with nature on the display and much more to offer which is currently untapped.
- ▶ Development of sustainable tourist circuits and mega projects for tourist infrastructure development can boost the tourism inflow and subsequently the industry itself in the region.

TOURIST INFLOW IN LADAKH (2013 – 2019)



Source: Tourism Department, Leh & Kargil

Ladakh
Now

TOURISM



Tourist attractions in Ladakh

- Major Tourist Destinations
- ▲ Monasteries & Heritage Sites
- ◆ Mosques

Tourism contributes ~50% to the GDP of Ladakh

87% Domestic tourists in 2018-19

Absence of regulatory and monitoring framework

Tourist inflow doubled ~ 2 - 4 Lakh in last 5 Years (CAGR = 15%)

88% of the tourist accommodation facilities in Leh District

Insufficient infrastructure for safety and tracking of tourists

Average stay duration per tourist ~7-10 Days

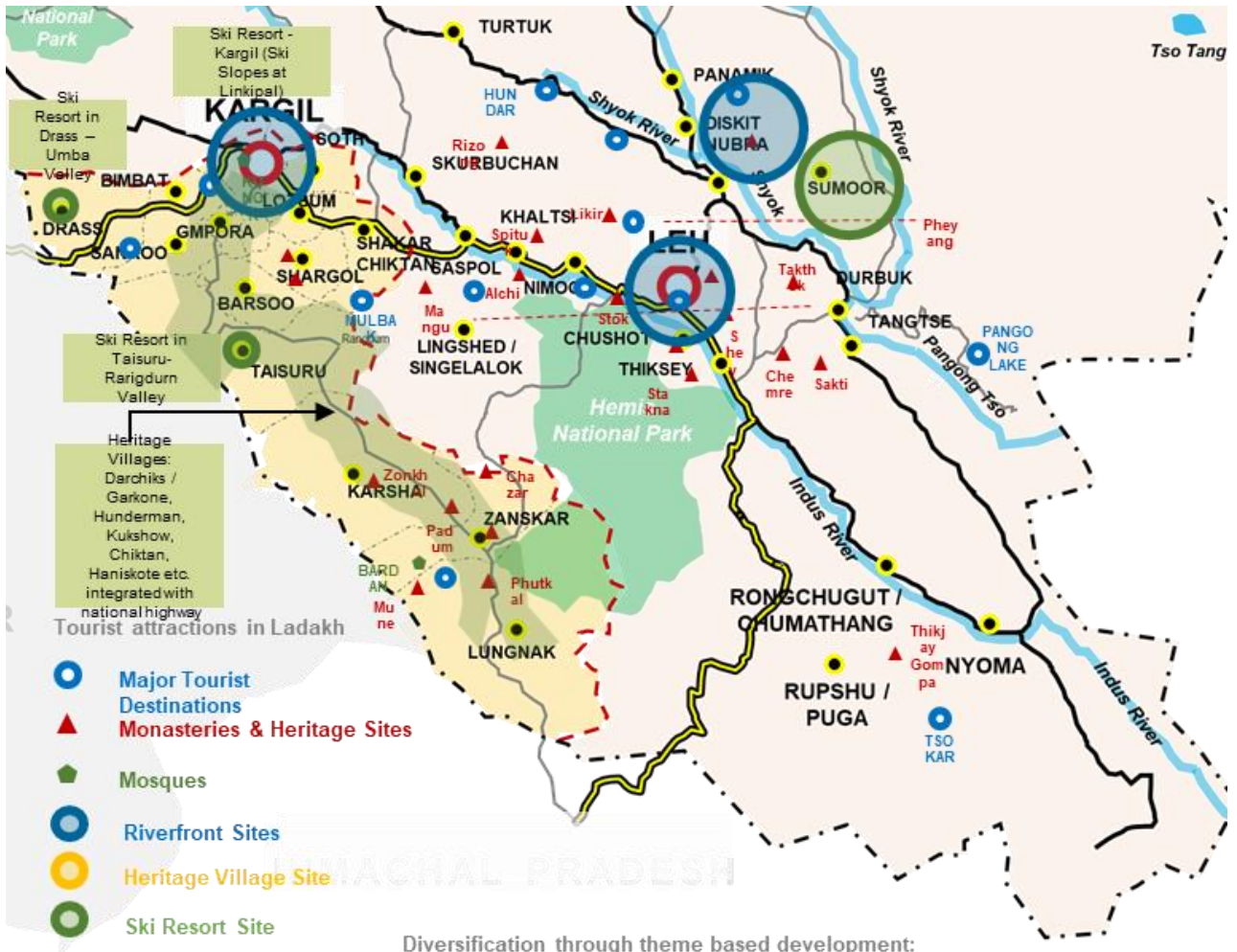
Tourist season restricted to summer season (4-5 months)

Limited Branding and Media Reach



Ladakh
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TOURISM



Diversification through theme based development:

Eco Tourism	Agro/Organic Tourism	Winter Tourism	Adventure Tourism	Pilgrimage Tourism	Cultural & Heritage Tourism	Film Tourism

DEVELOPMENT STRATEGIES

- To provide safe, secure and unique "All Weather Tourism"
- To create an enabling environment for investments for sustainable tourism by development of Tourism circuits
- To promote Tourism Diversification through theme based development
- To build capacity and develop quality human resources through skill development and cooperatives
- To ensure that sustainable tourism primarily benefits host communities



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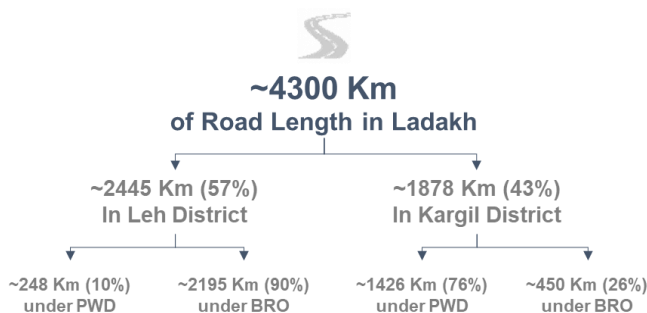
4.4

Connectivity & Transport

CONNECTIVITY & TRANSPORT

BACKGROUND AND CONTEXT

- ▶ Road access to Ladakh consists of two highways, Leh-Srinagar and Leh-Manali, both closed annually for 7 months with heavy winter snowfall. The recent construction of the Atal Tunnel connecting Manali with Leh, under the Rohtang Pass, is a landmark infrastructure project which is estimated to reduce the travel time by 3 to 4 hours when compared to the earlier route.
- ▶ Kushok Bakula Rimpochee Airport in Leh provides air connectivity to Ladakh for both commercial and military purposes.
- ▶ Within Ladakh, there is 1,675.4 km of road network, maintained by State PWD excluding National Highways. 85% of this network is in Kargil district and only 15% in Leh district (2018-19).
- ▶ The border road organization (Project Himank and Vijiyak) has also constructed and maintained a huge chunk of road network (2646.49 Km.) connecting the border areas.



Source: PWD & BRO, Leh & Kargil

ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ Limited road connectivity with the neighbouring states during winter season due to heavy snowfall hinders the passenger and freight movement in Ladakh.
- ▶ 44% roads (745 Km) under PWD are fair weather roads which need to be rehabilitated into all weather roads. The district of Kargil has majority share of roads unsurfaced or under fair weather roads (~690 Km). Villages connected by unsurfaced roads bare high transport costs due to adverse road condition
- ▶ In terms of public transport, Ladakh does not have a UT run public transport service yet. The inter-state bus service is also operated by JKSRTC & HRTC from Ladakh to Jammu & Kashmir and Himachal Pradesh.
- ▶ The current intra-state public transport service are concentrated in and around district headquarters of both Kargil and Leh District. A number of blocks in the remote locations of Ut are not connected with the Public Transport Service. Also, the service frequency to many blocks is once a week, which again poses challenges for movement of people in those areas.
- ▶ With services being provided by multiple agencies there is no coordinated time table for regional and local services, causing long waiting times and inconvenience to passengers.
- ▶ Apart from the bus terminals at Leh and Kargil City, there are no bus shelters on designated bus stops for passengers.
- ▶ Similarly, no basic amenities available for passengers during transit.



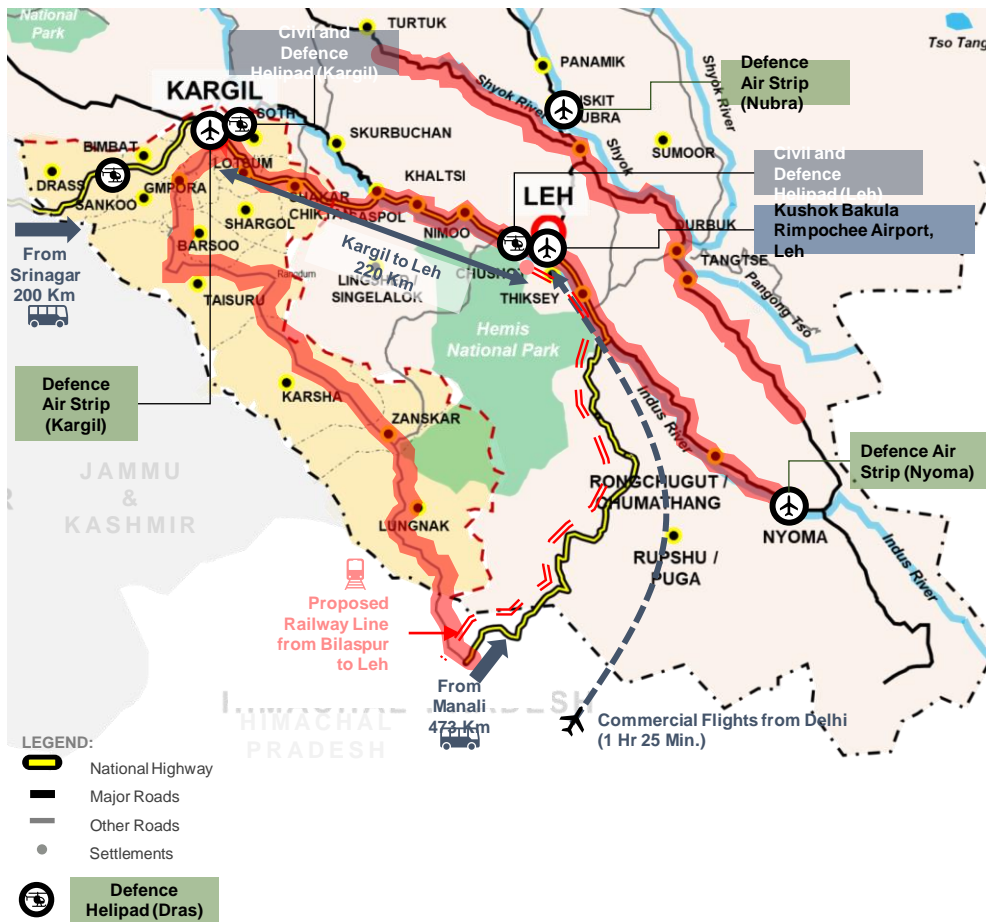
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REGIONAL CONNECTIVITY



Only 2 roads connecting Ladakh to rest of India, with limited access during winter season

Minimal inter-state and inter-city public transport by road

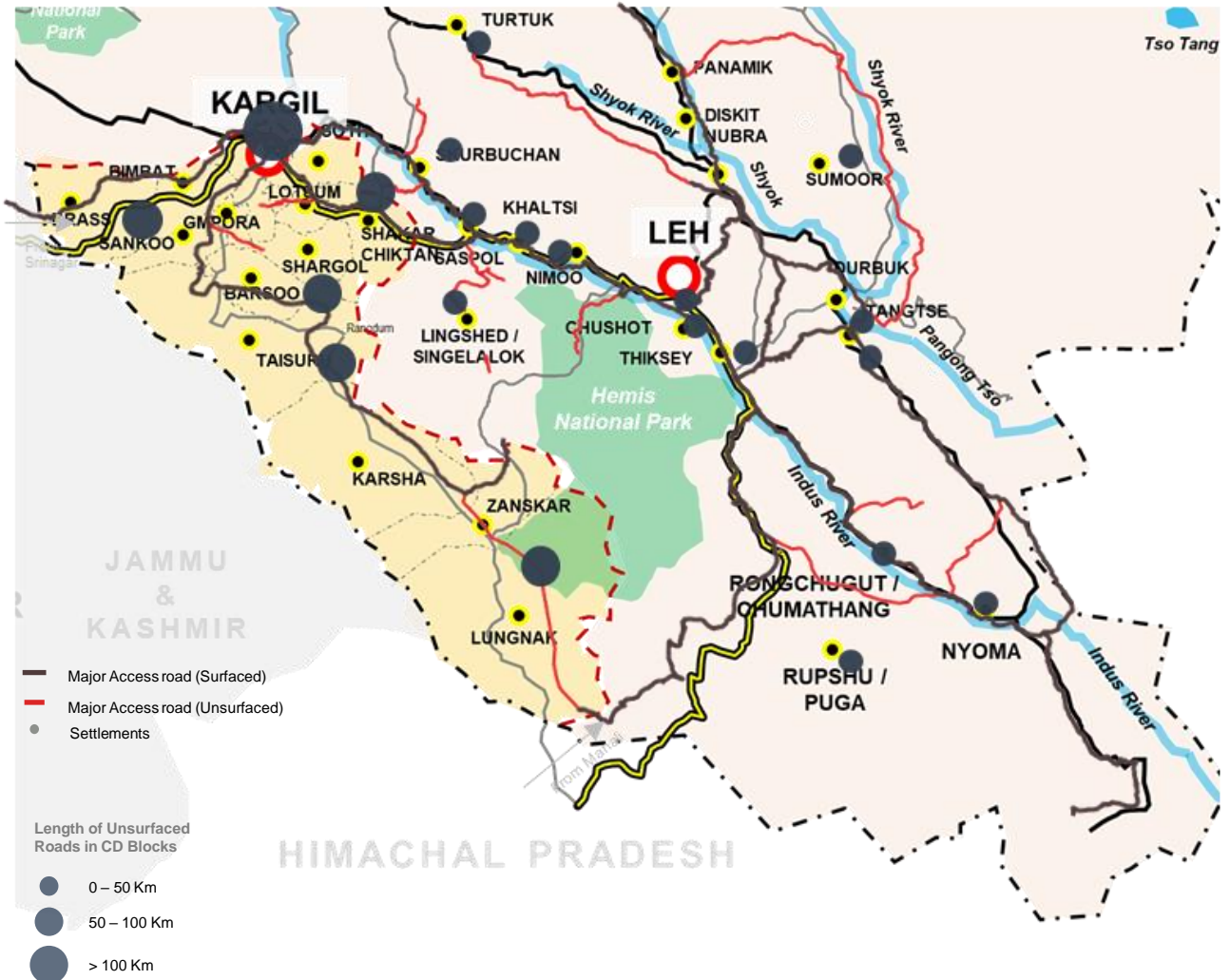
Only 1 Airport operating limited Commercial Flights

Proposed Railway Line from Bilaspur to Leh

Proposed Heli Services from Leh and Kargil to remote locations

Ladakh
Now

ROADS AND HIGHWAYS



~4300 Km of Road Length (39% under PWD & 61% under BRO)

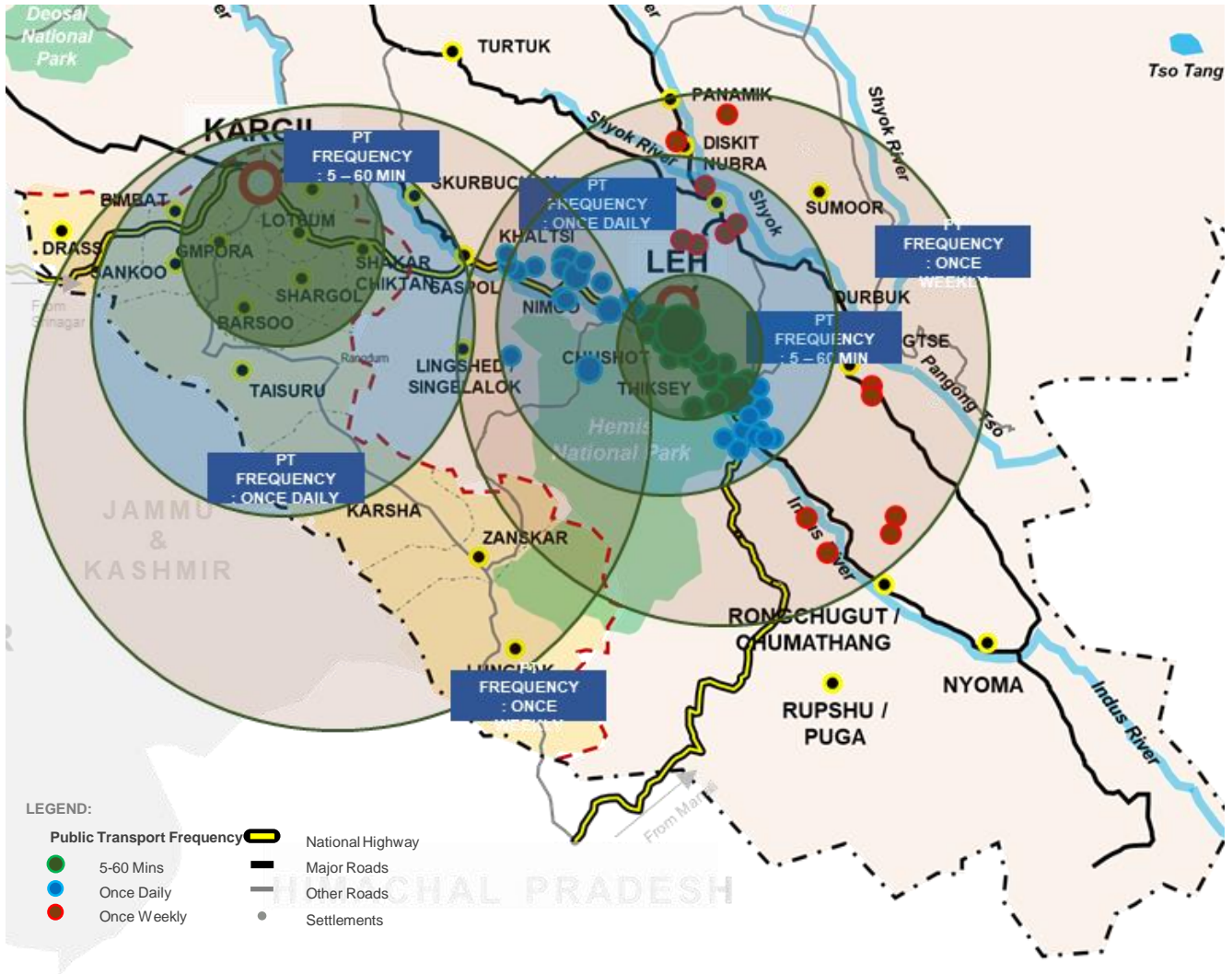
Majority of roads with intermediate / 2 lane configuration (6-10 mt.)

54% villages (25% population) do not have access to 'Pucca Roads'

Lack of road side infrastructure for convenience of road users

Ladakh
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PUBLIC TRANSPORT



Limited public transport services through SRTC and cooperatives

Availability of Buses per 1000 Population = 1.61

Only 2.2% share of Buses in total registered vehicles

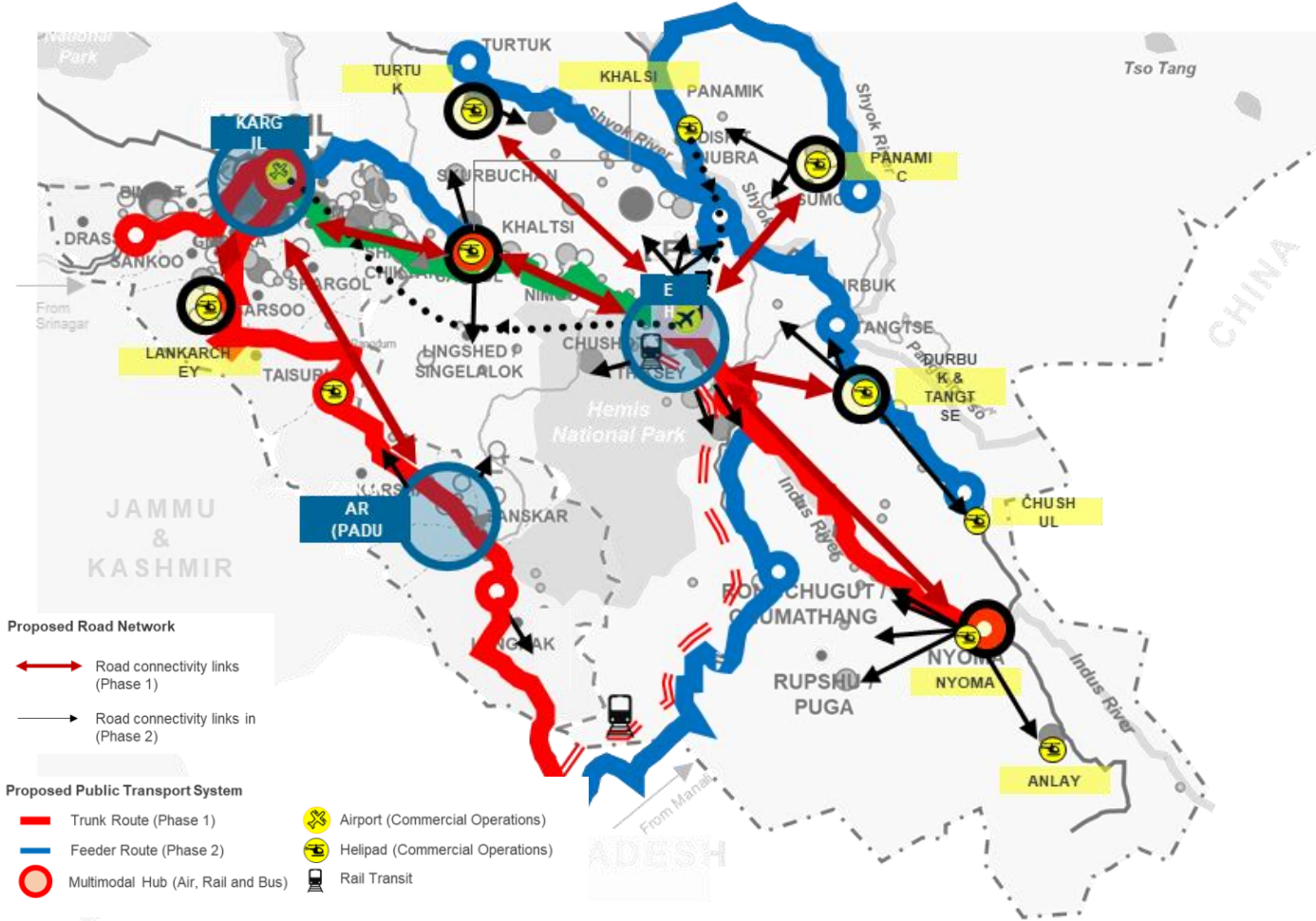
54% villages in Leh do not have access to regular bus service

Lack of public transport infrastructure – terminals, depots, stop/shelters and other passenger and staff facilities

100% overaged buses (more than 10 Years of age) with BS-III technology

Ladakh
Next

ALL WEATHER CONNECTIVITY



DEVELOPMENT STRATEGIES

- 1| Connecting all settlements with all weather roads
- 2| Upgradation in capacities of regional road network
- 3| Connectivity by Bus Transport System to Economic & Social Growth Centres
- 4| Transition to Green fuels: Electric and LNG for carbon neutrality
- 5| Development of alternate modes and allied infrastructure
- 6| SMART technologies for operation, management and monitoring
- 7| Digital payment mechanism for public transport



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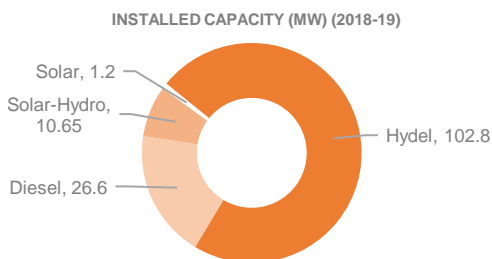
4.5

Power & Energy

ELECTRIC POWER SUPPLY

BACKGROUND AND CONTEXT

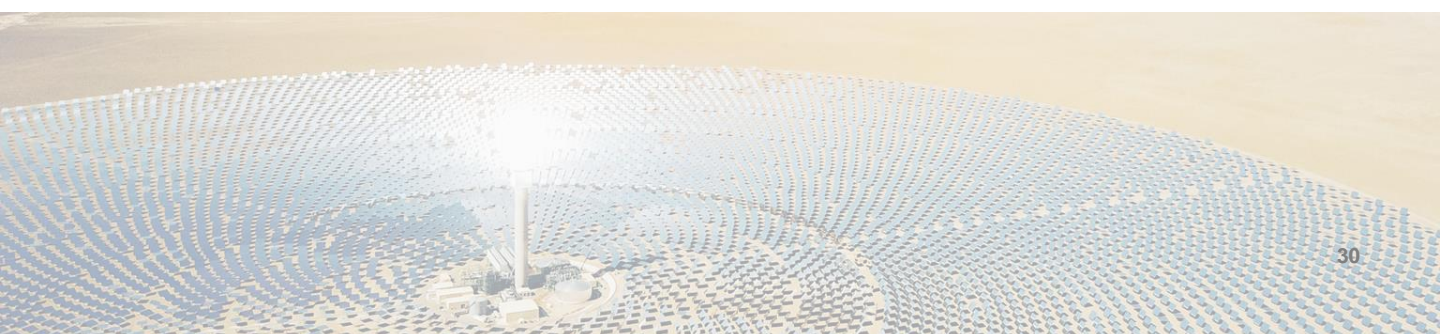
- ▶ Ladakh has a high electrification rate with more than 90% of its villages electrified. All 100% of the 119 villages in the Leh district and 125 villages in the Kargil district are electrified as of 2018-19.
- ▶ The total energy demand in the UT for the year 2018-19 has been ~87.5 Mn units, which is almost evenly split between the two districts, with 56.9% consumption in Leh and the rest in Kargil. Category-wise, almost 46.5% of the total consumption is for domestic usage followed by commercial, government, army and industrial usage.
- ▶ There are large differences in the electricity demand based on weather conditions in the region. During summers, due to favourable climatic conditions, the demand for power in summers is less. Whereas during the harsh winters, the power demand rises up substantially. The requirement of power varies between 4 to 16 MW in the summer while it shoots up to 10 to 27 MW in the winter.
- ▶ Currently, Ladakh has an installed electricity generation capacity of approx. 141 MW, including Hydel power, Diesel gensets, Solar-Hydroelectric plants and a few micro Solar PV grids.



Source: Power Development Department, Leh & Executive Engineer Electric Division, Kargil

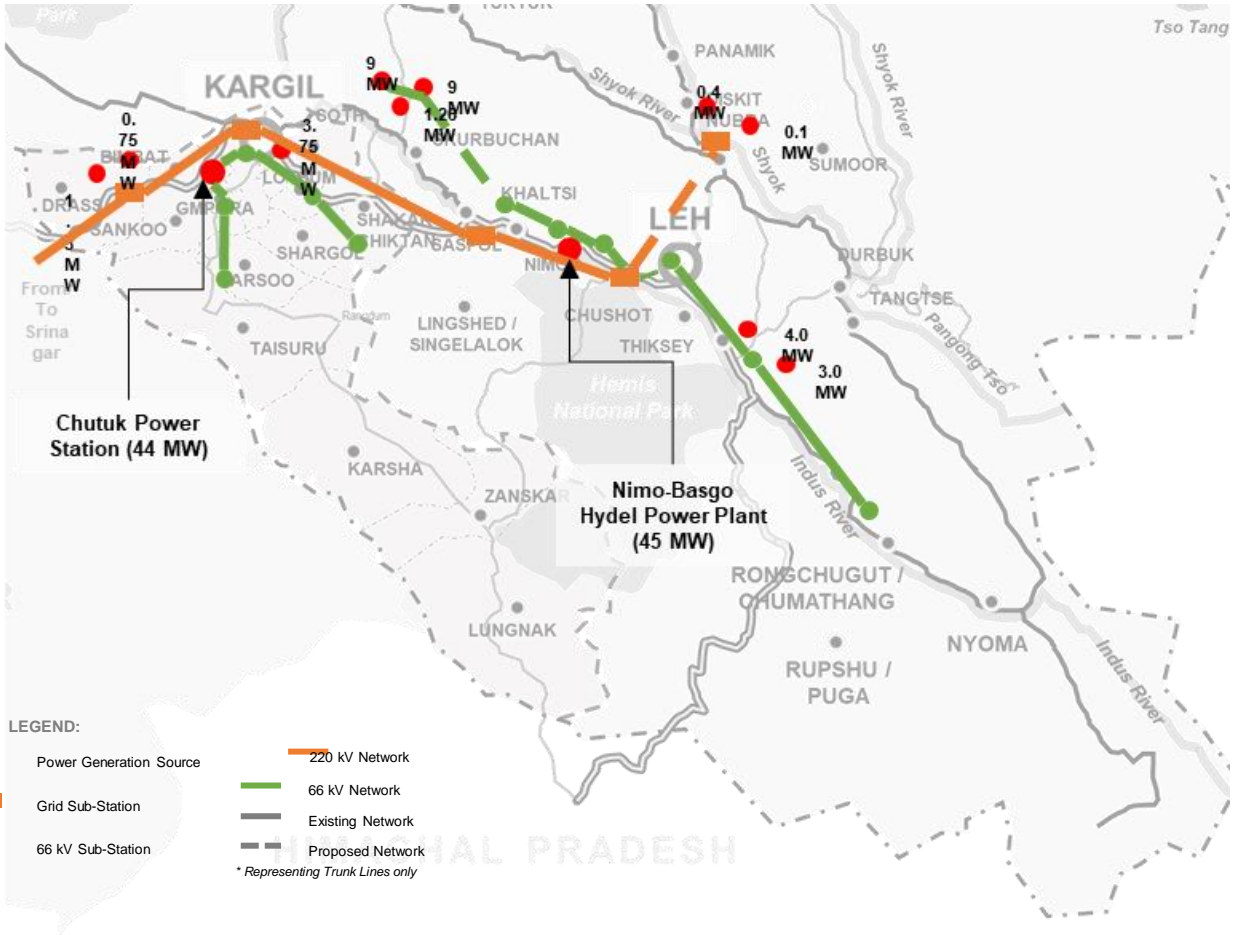
ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ Most of the settlements are primarily powered by Hydel electricity through the grid, but a large proportion of settlements still have Diesel as their primary source of electricity.
- ▶ The high reliance on Hydel power has a major drawback due to the cold weather in Ladakh. A Hydro Power Station is designed according to the availability of river discharge, and the primary source of water in the Ladakh region is through melting of glaciers. During the winter season, when the temperature drops, water in the rivers reduces drastically. This brings down the electricity generation potential of Hydel power plants significantly. Therefore, the region experiences an energy deficit of approx. 64% during the winter season.
- ▶ The potential of electricity generation by renewable energy sources in the Ladakh region has been estimated to be upwards of 135 GW. This includes key renewable energy sources such as Solar PV, Wind power, Hydel power, Biomass and Geothermal power.
- ▶ Ladakh has good wind energy potential due to its valley terrain and temporal variation. Based on a 2019 study by National Institute of Wind Energy (NIWE), Ladakh has a wind energy potential of up to 100 GW.
- ▶ At least three regions in Ladakh – Chamuthang and Puga in the Indus valley and Panamik in the Nubra Valley – are considered to have significant geothermal power generation potential.
- ▶ Ladakh also has a very high potential for solar power generation (35MW) due to its availability of large expanses of land and high solar irradiance.



Ladakh
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ELECTRIC POWER SUPPLY



90% Household
Electrification in Ladakh

Only 74% utilization of
Installed Capacity
(i.e. 105 MW)

~15 Hours of power supply
per day

~ 64% Energy Deficit in Winter

- Demand: ~50 MW
- Supply: ~18 MW

19% Diesel Power

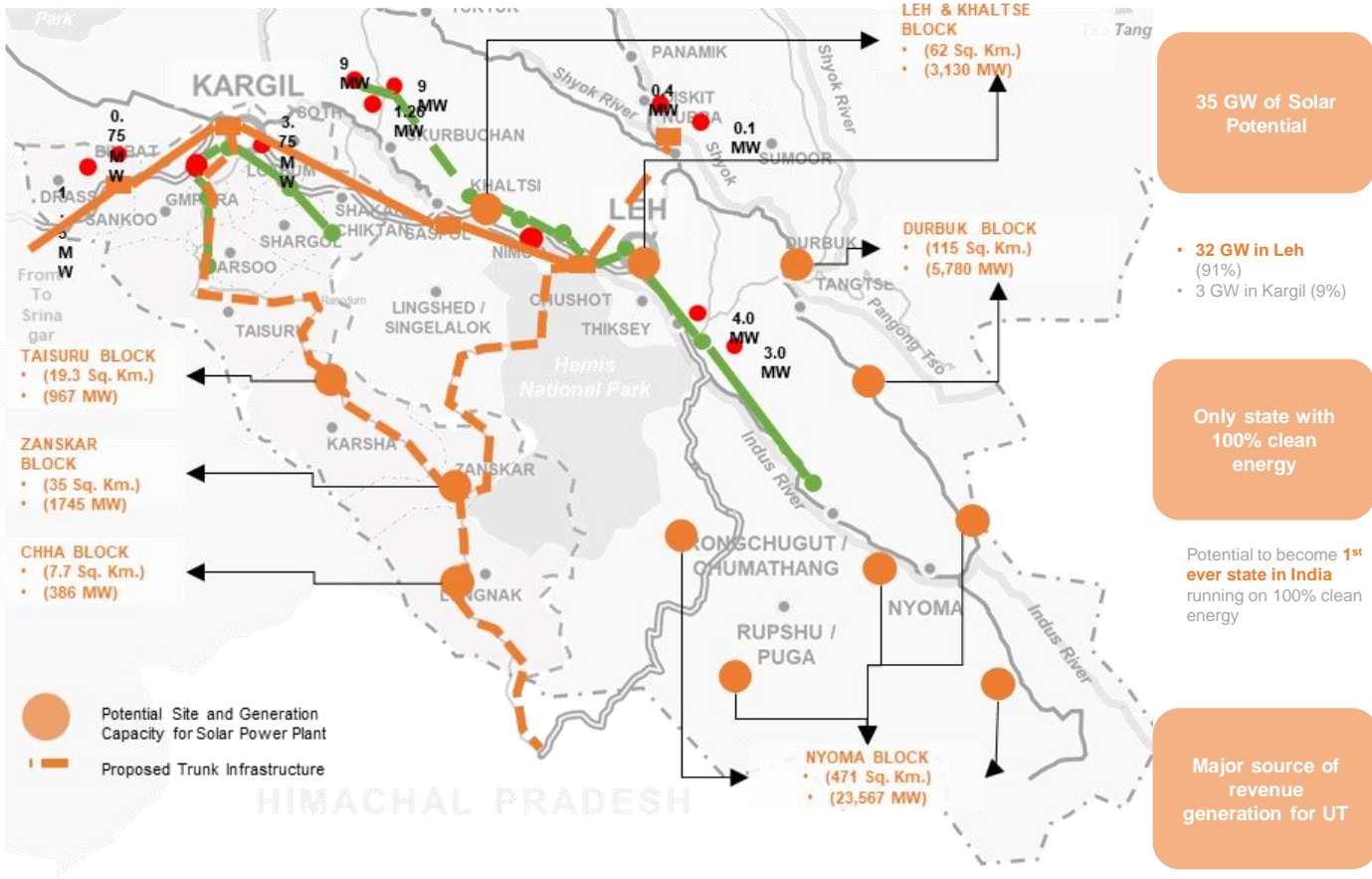
- 72% Hydel Power
- 19% Diesel Power
- 9% Solar + Hydro Mix

~140 MW Installed
Generation Capacity

~ 25% Transmission &
Distribution Losses

Ladakh
Next

ELECTRIC POWER SUPPLY



DEVELOPMENT STRATEGIES

- 1| Harnessing the potential of other renewable energy sources (wind and geothermal power) available
 - Solar Potential = 35 GW
 - Wind Potential = 4 GW
- 2| System planning for transmission and evacuation infrastructure to support potential growth in installed capacity
- 3| SMART Grid with Smart Metering for efficient demand side management and reduction in T&D losses
- 4| Micro Grids for power supply to remote areas not connected to main grid



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4.6

Water Supply and Waste Water Management

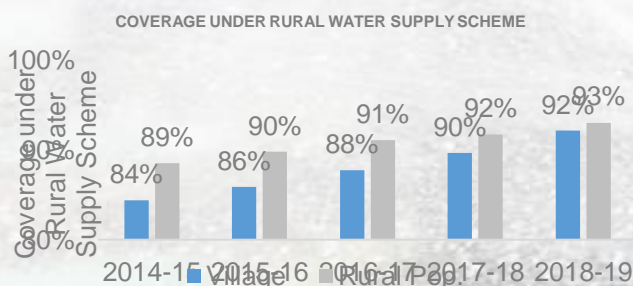
WATER SUPPLY AND WASTE WATER MANAGEMENT

BACKGROUND AND CONTEXT

- ▶ In the past decade, ground water has emerged as the main source of water supply (90% water sourced from ground water) in place of the Glacial melt which used to be the predominant source of water. Many springs have dried up and snow fall during winter period has also reduced due to global climatic changes. This has resulted into people resorting to ground water sources for daily water supply.
- ▶ Only Leh and Kargil cities have partail piped water supply system. The rest of the region relies on public stand posts, bore wells and hand pump for daily water supply.
- ▶ 92% of the Villages and 93% of the population is covered by Rural Water Supply Scheme. (2018-19).
- ▶ The cities lack piped sewer system also as more than 75% of the households are dependent upon on- site sanitation facilities (Septic Tanks, Pit latrines, etc.)

ISSUES, POTENTIAL AND CONSTRAINTS

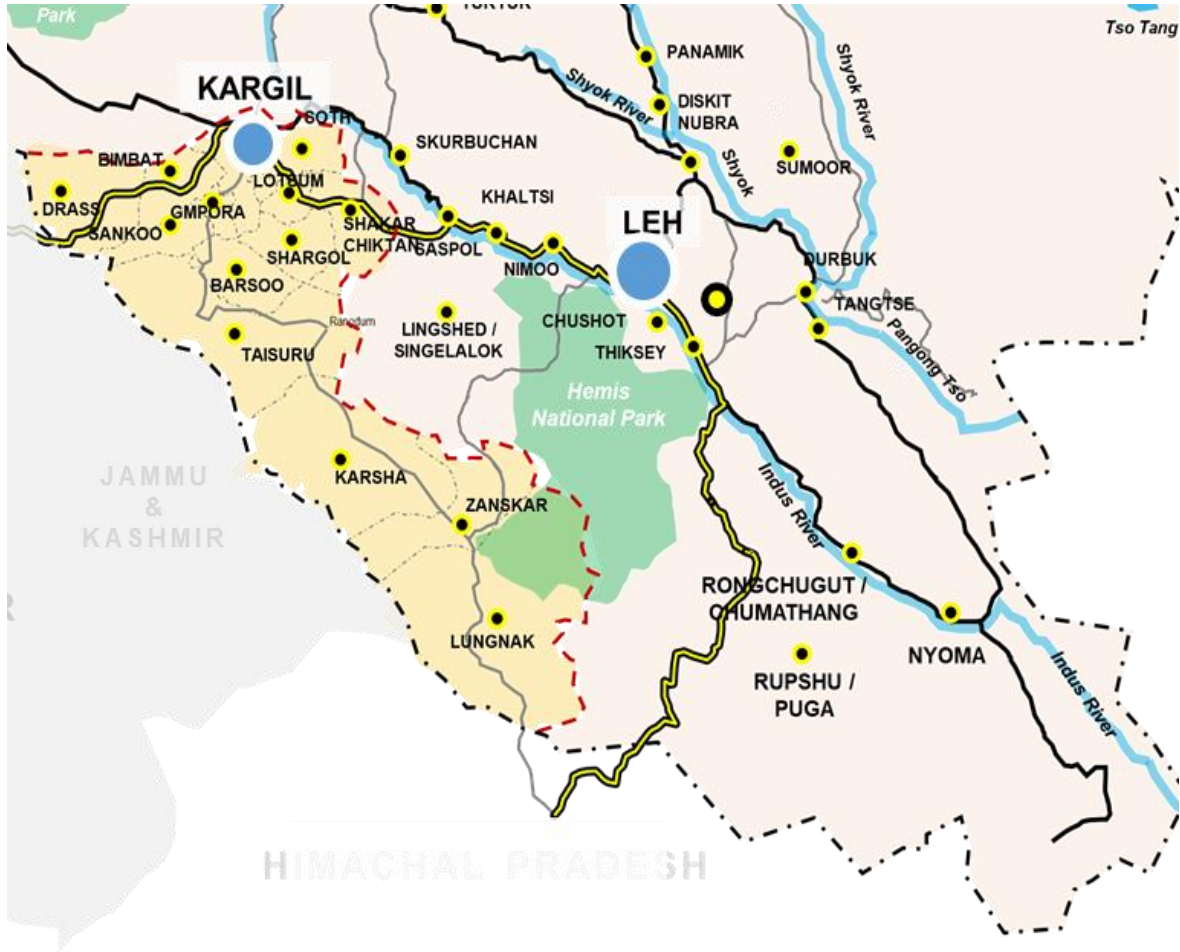
- ▶ With the increasing demand for water, and rapidly decreasing sources of supply, Ladakh today faces 38% shortage in water supply.
- ▶ With limited piped sewer system, open sewers, and on-site waste management, Ladakh lacks in efficient waste water management. This results into pollution of ground water sources as the waste water seeps through to the aquifers below ground.
- ▶ For instance, 33 % of freshwater extraction points in Leh are too close to areas of wastewater disposal and 4 % are too close to highly polluting wastewater disposal areas. Pollution of surface waters due to inadequate wastewater and solid waste management is also a significant issue in the UT
- ▶ Poor state of community toilets, high incidence of open defecation and only 1 sewage treatment facility are also some of the major concerns being faced by Ladakh.



Source: Public Health Engineering Division, Leh & Kargil

Ladakh
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WATER SUPPLY AND WASTE WATER MANAGEMENT



WATER SUPPLY

1269 Households with FHTC in Leh City, out of 15,973 Households

168 Households with FHTC in Kargil City, out of 17992 Households

WASTE WATER

Partial Network of piped sewerage system in Leh City

No network of piped sewerage system in Kargil City

1 Faecal Sludge Treatment Plant (FSTP) at Leh

96% Households without Functional Tap Water Connection

~38% Water Supply Deficit

- Demand: 63 Lakh Gallons/Day
- Supply: 39 Lakh Gallons/Day

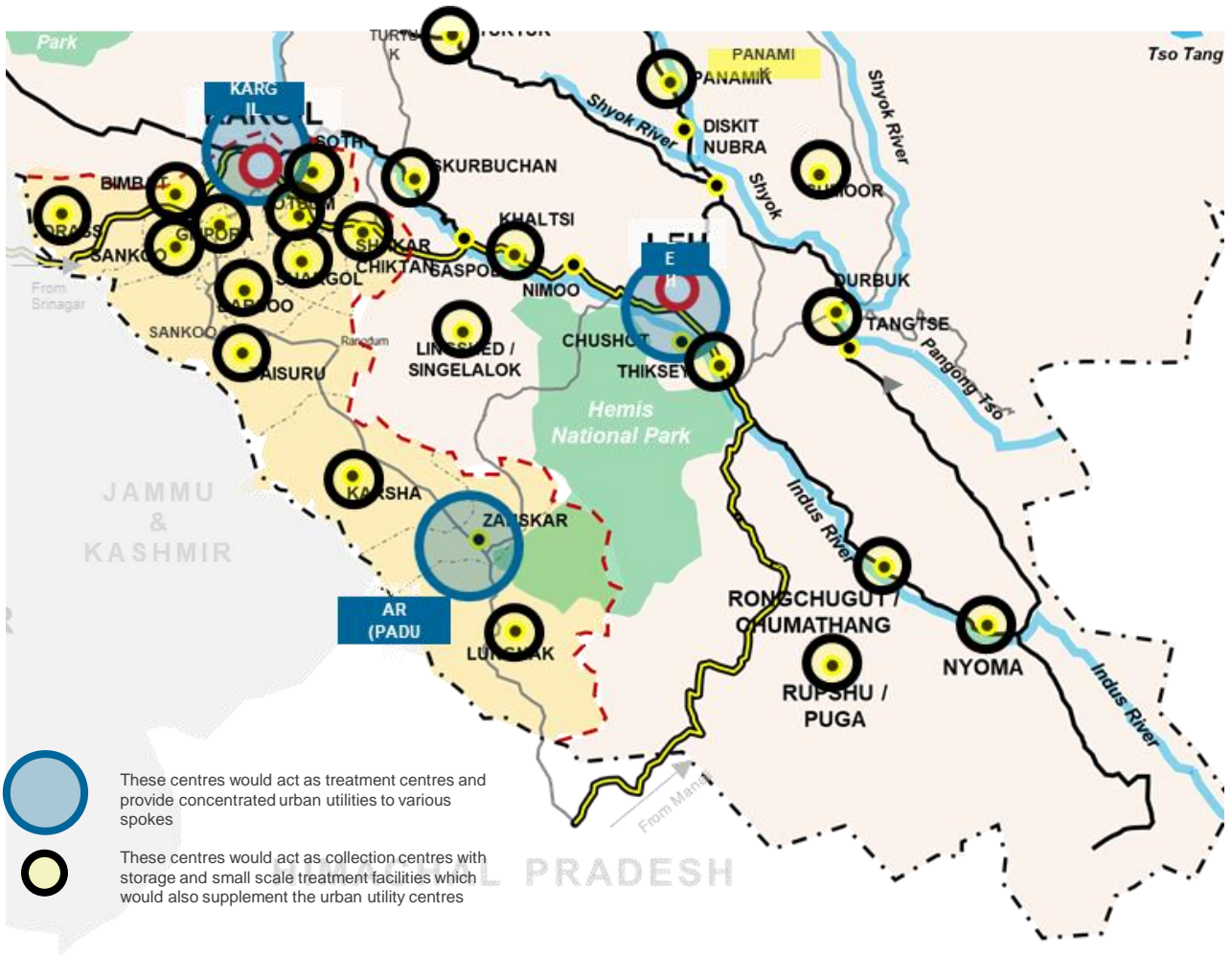
Only 1 Faecal Sludge Treatment Plant (FSTP) in Ladakh for the city of Leh

More than 75% of the households are dependent upon on-site sanitation facilities (Septic Tanks, Pit latrines, etc.)

*FHTC – Functional Household Tap Water Connection

Ladakh
Next

WATER SUPPLY AND WASTE WATER MANAGEMENT



DEVELOPMENT STRATEGIES

- 1] Large scale harvesting and storing of winter water which can be used during peak demand in summers
- 2] State Level accredited water testing laboratories for water quality testing
- 3] Functional Household Tap Connections for water supply for every household under Jal Jeevan Mission
- 4] Technological interventions to provide piped water supply at sub-zero temperature during winter season
- 5] Decentralised Faecal Sludge and Septage Management for waste water treatment (1 FSTP for a cluster of 20,000 Population)



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Solid Waste Management

SOLID WASTE MANAGEMENT

BACKGROUND AND CONTEXT

- ▶ Solid waste, especially the plastic waste due to tourism, has scoured the public health, hygiene and fragile ecology of Ladakh. Nearly 0.35 Kg waste is generated per capita per day in Ladakh (96 Tonnes/Day)
- ▶ Waste generation sources in Ladakh – Household, commercial establishments, hospitality sector, medical institutes, construction sites and street sweeping.
- ▶ Currently, the industrial waste is managed by the individual industry itself and there is no Effluent Treatment Plant (ETP) for treatment of industrial effluents
- ▶ Tourism & Plastic Waste: Nearly 30,000 plastic water bottles are dumped in Leh every day. During peak tourist season, Leh city collects 16 to 18 tonnes of waste per day, and annual waste production stands at an alarming 374 tonnes.
- ▶ To deal with the menace of solid waste, the UT administration has taken an initiative towards sustainable waste management in rural and semi-rural areas namely Project 'Tsangda.'

ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ No source segregation of waste, leads to inefficient waste processing and disposal mechanism.
- ▶ In spite of a door-to-door collection system, people dump waste in open sites, outside their homes or in open drains, clogging the sewerage and drainage system
- ▶ Unorganised secondary storage of solid waste on roadside, vacant plots, etc. Open tippers to transport waste result in road littering
- ▶ The seasonal tourist influx compounds the problem considerably because of the enormous quantity of waste is generated within a shorter period of time
- ▶ No engineered sanitary landfill site for safe disposal of solid waste and manual handling of solid waste – no Personal Protection Equipment (PPE's) for waste collectors / handlers
- ▶ Ladakh also lacks waste treatment plant for biodegradable waste and bio-medical waste

Project 'Tsangda'

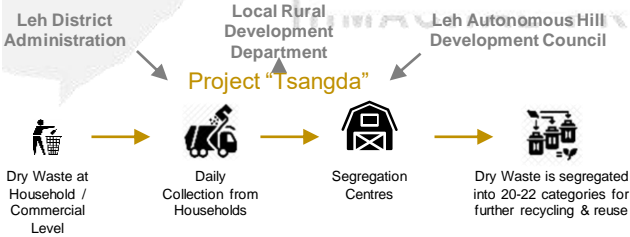
Project 'Tsangda' (meaning cleanliness in Ladakhi language) was launched on 12th December 2017 at Choglamsar village on the outskirts of Leh town. It is an organized effort of the District Administration to protect the district's fragile ecology from the serious threats posed by solid waste generated by rapid urbanization and growing tourism.

4 segregation centres are running successfully at Choglamsar, Disket (Nubra), Khaltse and Nimoo blocks in Leh District. And a total of 2034 units, including 1174 households and 863 shops are being covered, benefitting about 15,000 individuals.

The project has been a huge success and the District Administration is planning to develop 22 more centres all over the district to deal with the menace of solid waste in Leh.

Ladakh
Now

SOLID WASTE MANAGEMENT



~96 Ton of Solid Waste generated per Day

Nearly 0.35 Kg waste generated per capita per day

Waste generation sources – Household, commercial establishments, hospitality sector, medical institutes, construction sites and street sweeping

Inefficient collection, transport, storage and disposal

No source segregation of waste

Unorganised secondary storage of solid waste on roadside

Manual handling of solid waste

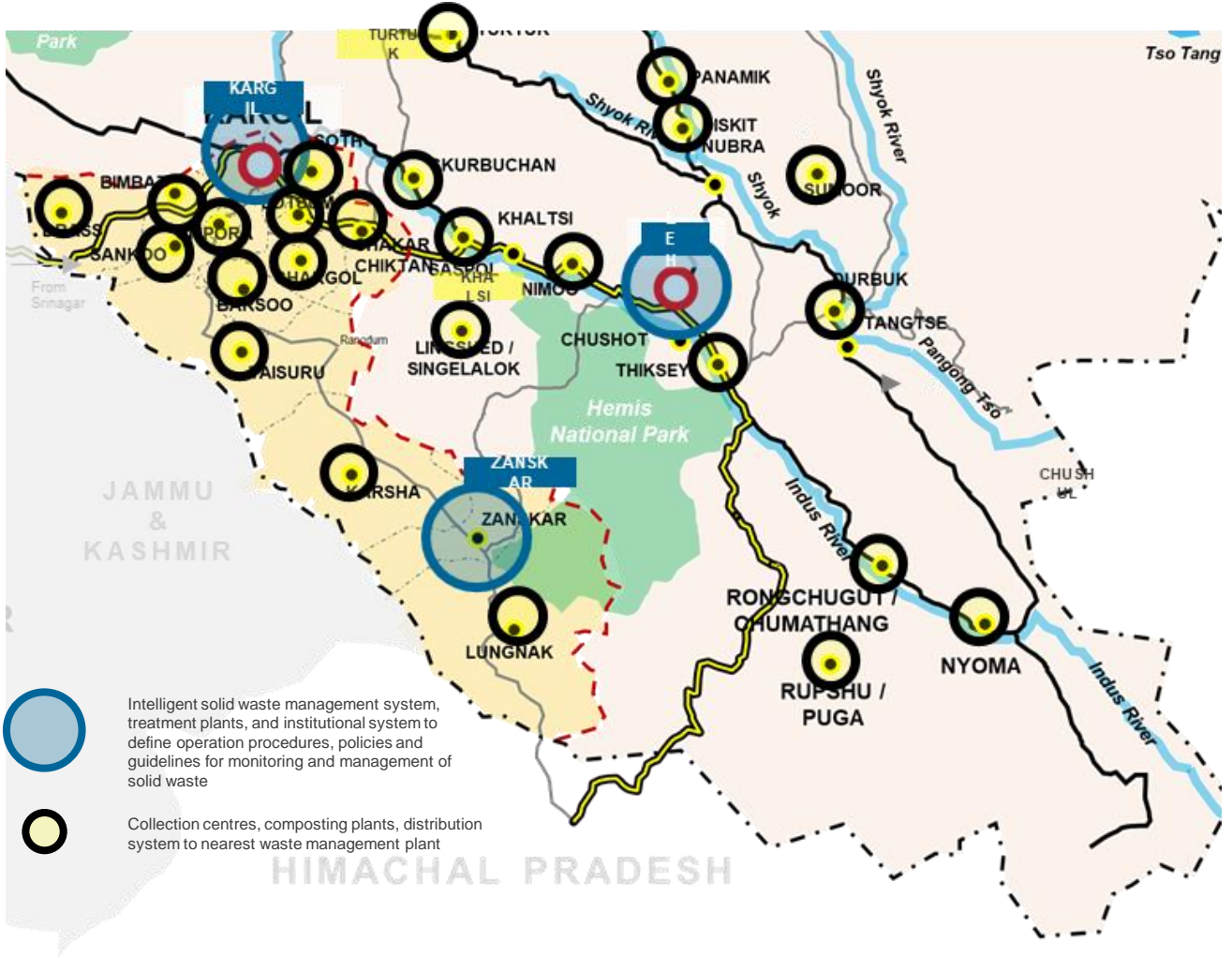
Lack of waste treatment facilities

No engineered sanitary landfill site

Industrial waste is managed by the individual industry itself and there is no Effluent Treatment Plant (ETP)

Ladakh
Next

SOLID WASTE MANAGEMENT



DEVELOPMENT STRATEGIES

- 1| Sustainable Integrated Solid Waste Management System in Urban Areas
- 2| Development of plants for efficient treatment and disposal of waste
- 3| Project "Tsangda" in rural areas for solid waste management
- 4| Policy & regulation, awareness & enforcement and management of plastic waste at Tourist locations
- 5| Intelligent Solid Waste Management for efficient waste management and monitoring



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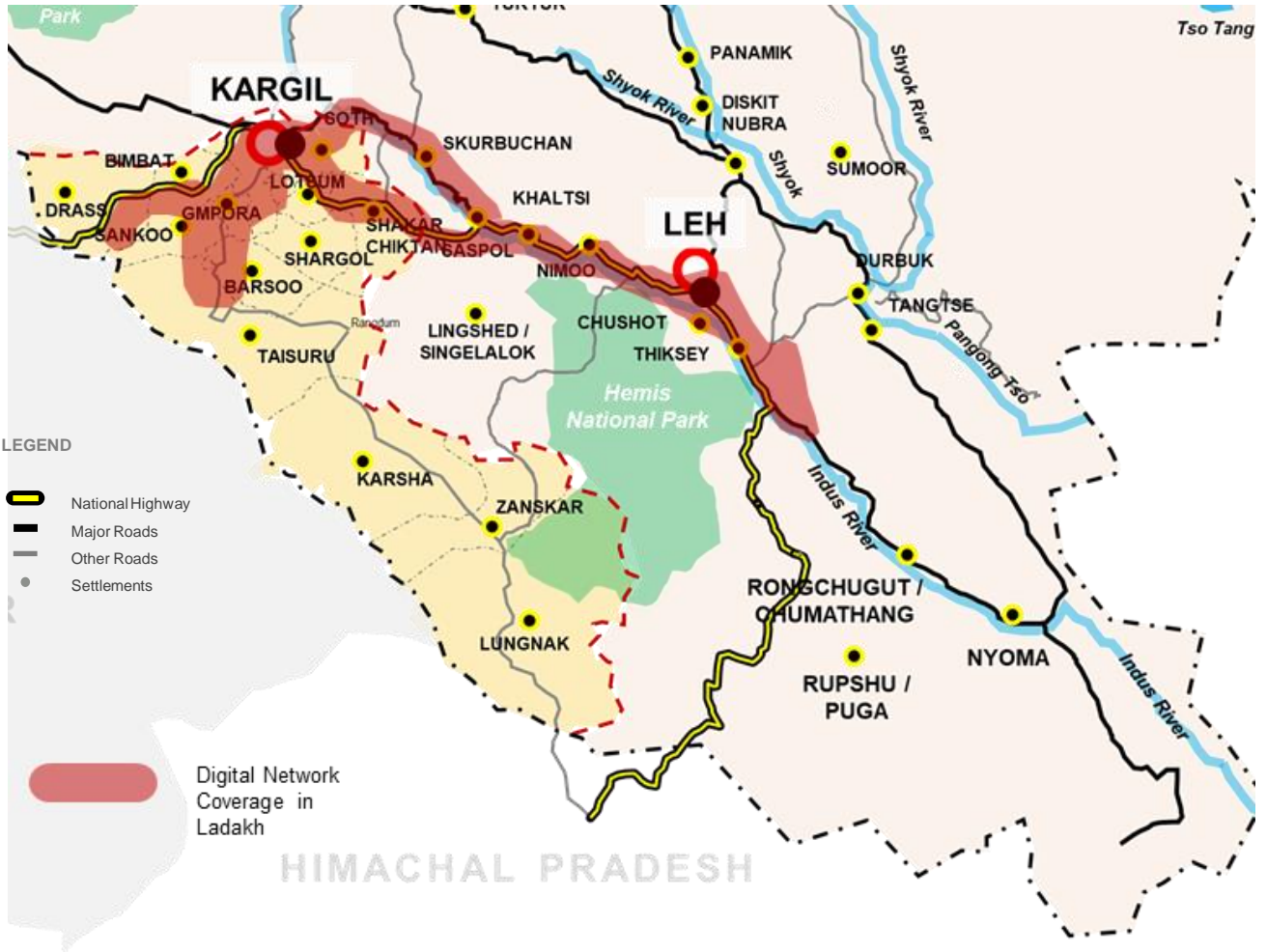
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Information Technology and Digital Infrastructure

Ladakh
Now

DIGITAL INFRASTRUCTURE



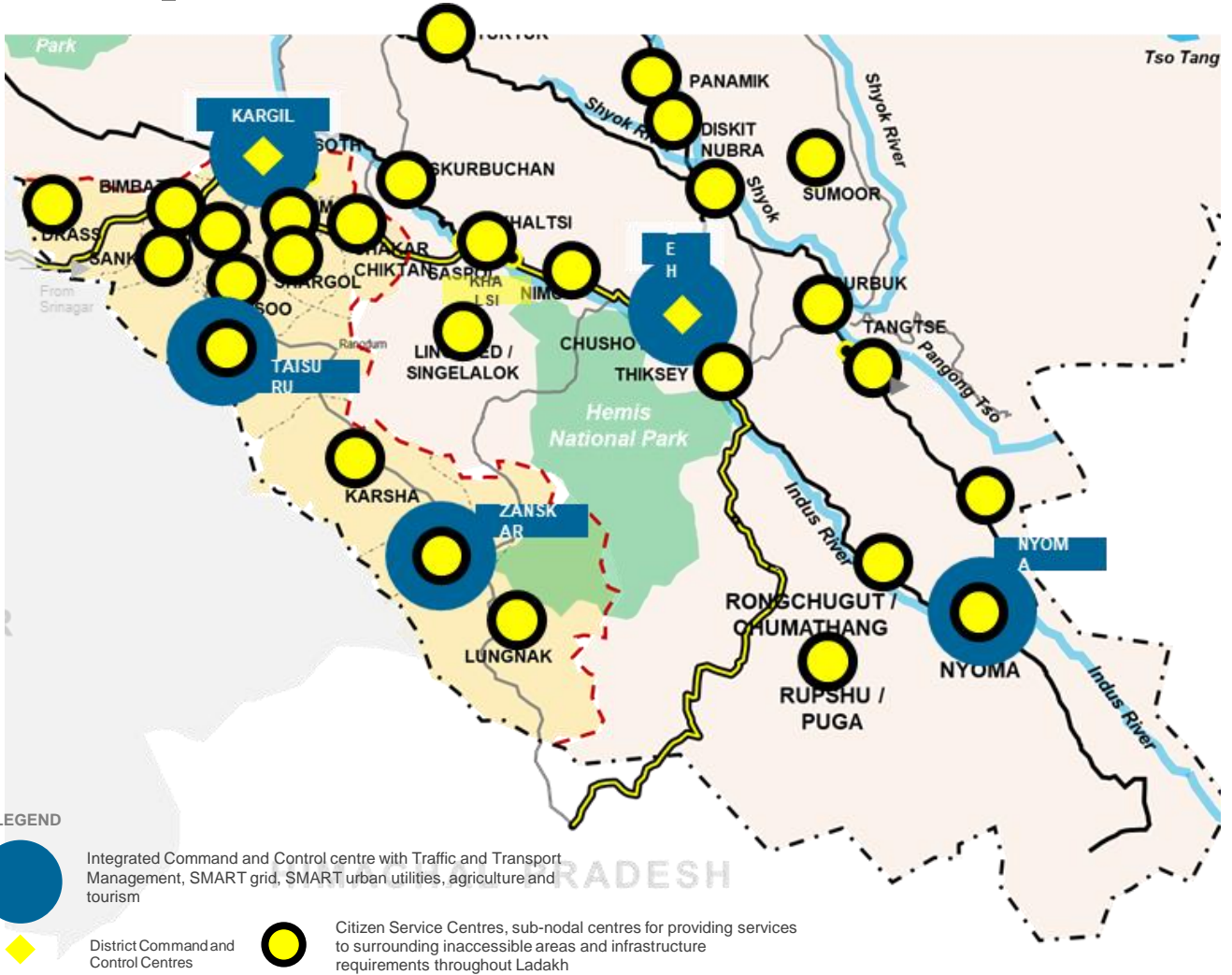
115 villages (47%) out of 243 without any data connectivity

National Optical Fibre Network (NOFN) in Ladakh is V-SAT based, with 165 sites installed with V-SAT out of 172 targeted

'Mobi-density' in Ladakh = 121% (i.e. 121 mobile phones per 100 population)

Ladakh
Next

DIGITAL INFRASTRUCTURE



DEVELOPMENT STRATEGIES

- 1| Establishment of IT Connectivity throughout Ladakh
- 2| Integrated Command and Control Centre at UT and District Level
- 3| Digitalization of Govt Depts like Health, Education, Transport etc.
- 4| Implementation of all ICT Citizen Services in all the blocks



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Education & Skill
Development

EDUCATIONAL FACILITIES IN LADAKH

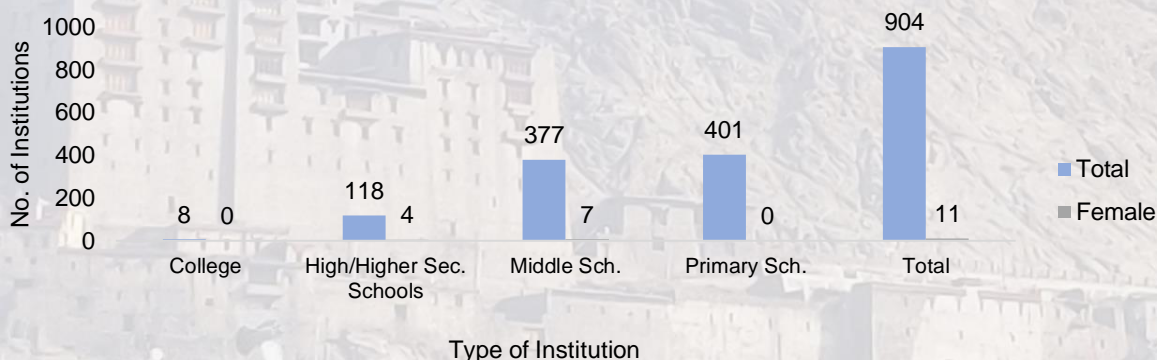
BACKGROUND AND CONTEXT

- ▶ Ladakh has remained away from mainstream educational practices followed in other states of the country. Ladakh, traditionally, had a rich culture of education imparted by various monasteries in religious scripts.
- ▶ The overall literacy rate of Leh stood at 77.2% and that of Kargil it was 71.34% as per 2011 census.
- ▶ Presently there are over 907 functional Govt. Schools distributed throughout Ladakh, however, only eight of them impart higher education. Apart from the Government schools, there are 113 Private Schools in UT of Ladakh, majority of them of them are limited to Elementary Segment only.
- ▶ Total enrolment in all the education institutions is 28,591 (2018-19), with 4535 teachers available in these institutes. Low Institution Pupil Ratio (1:32) is partially because of low population density. However, Teacher - Pupil Ratio (1:6) is better than recommended level of 30 - 35 Pupils per teacher.

ISSUES, POTENTIAL AND CONSTRAINTS

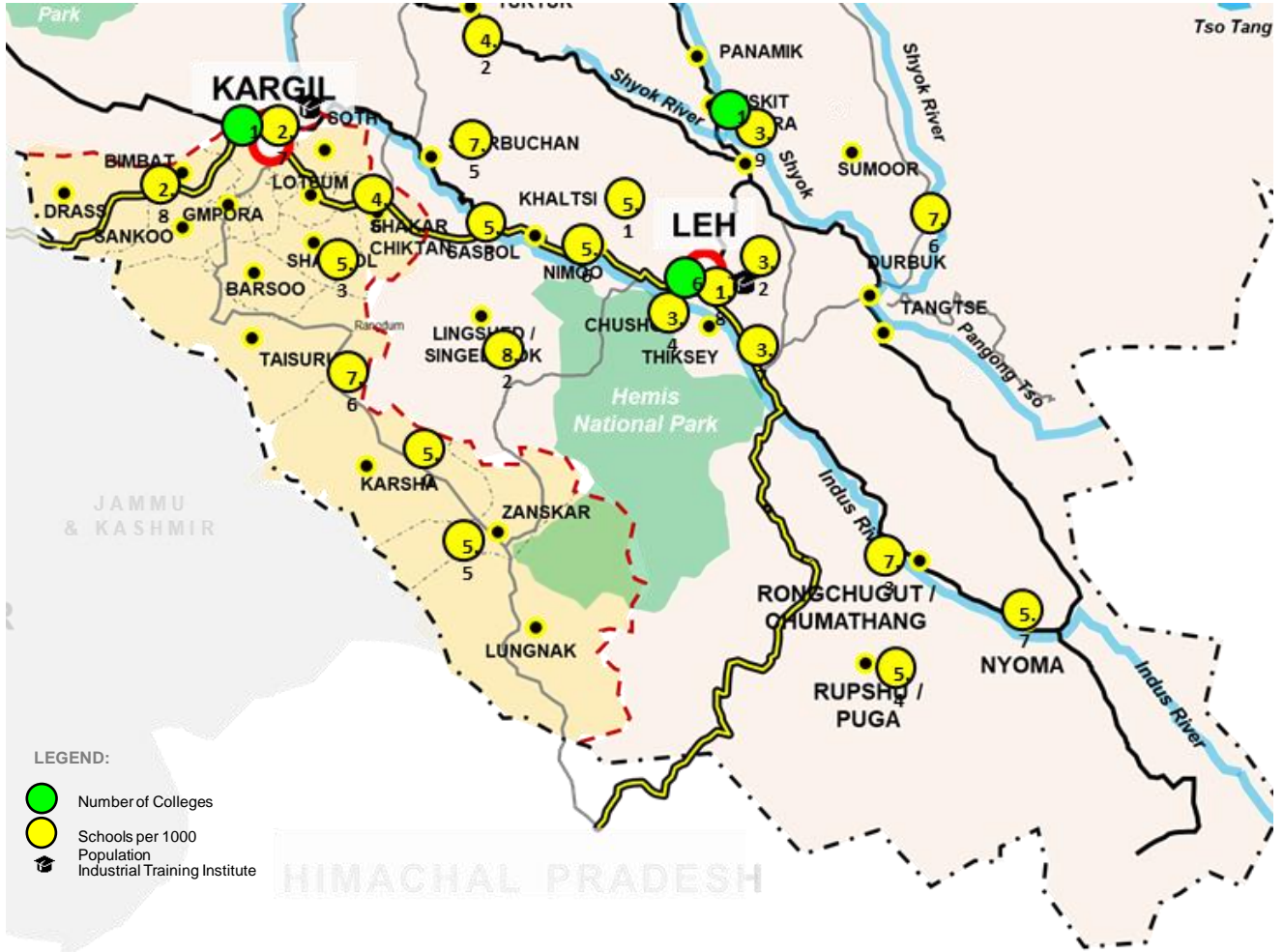
- ▶ Ladakh society for a long period experienced education given by monasteries, which at best provided basic education to the students. Higher and technical education is critical to Ladakh's aspirations of social and economic development. It needs to develop higher education infrastructure in order to build human capital.
- ▶ Efforts are required to create conducive conditions for increasing net enrolments rates at middle, high and higher education levels especially for girls which is still lagging behind.
- ▶ Education facilities need to be made more comprehensive and sustainable with appropriate skill upgradation and developing entrepreneurship in Ladakh. For this, education should be market oriented, through course upgradation with ethical, morality and values education.

NUMBER OF GOVT. INSTITUTIONS FOR GENERAL EDUCATION (2018-19)



Ladakh
Now

EDUCATIONAL FACILITIES IN LADAKH



Literacy rate in Ladakh
Leh : 77.2 %
Kargil : 71.1 %

Initiatives such as 'Student Educational and Cultural Movement of Ladakh' and operation 'New Hope'

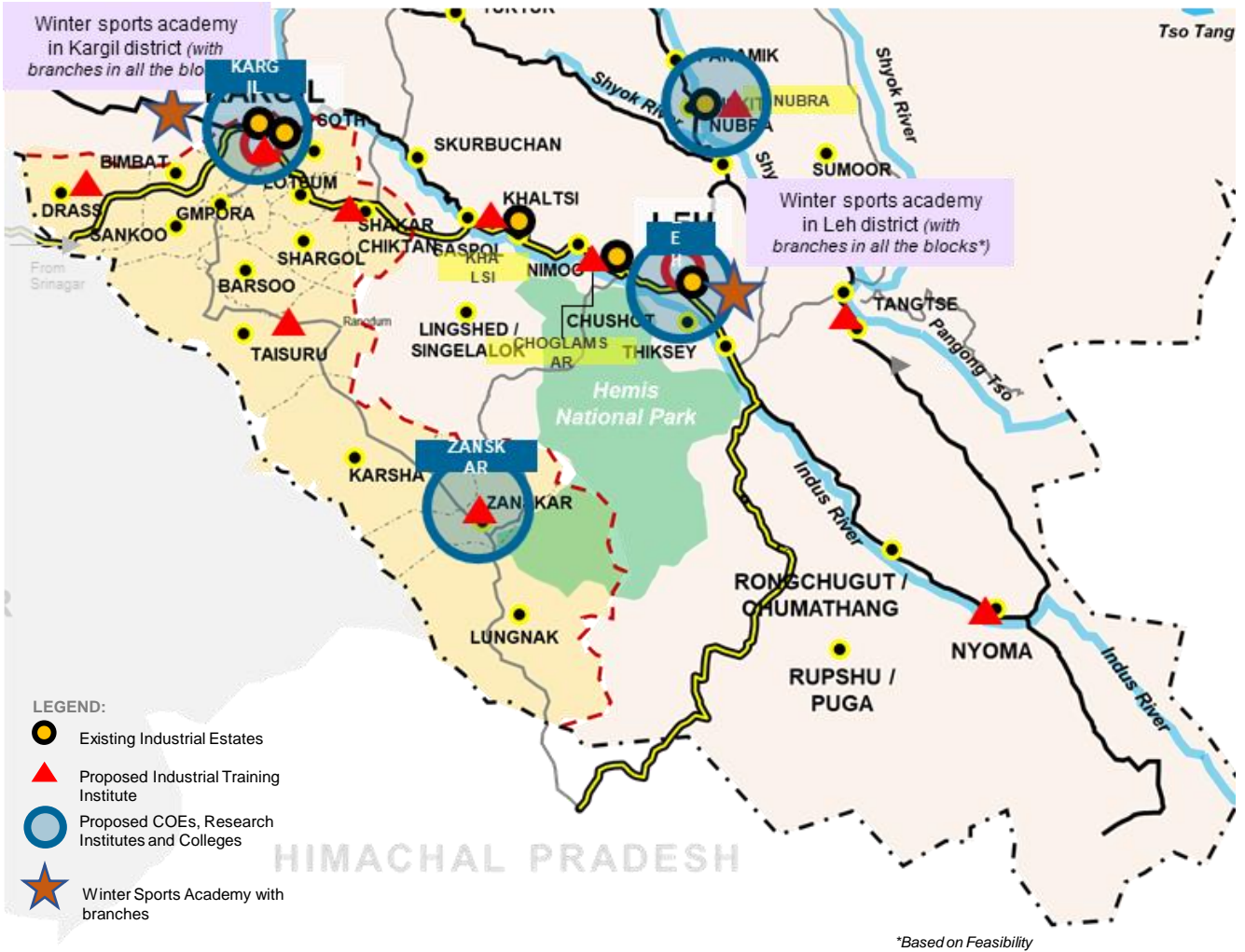
Limited access to digital education in schools

Challenges of physical facilities in government schools

Only two Industrial Training Institute

Ladakh
Next

SMART EDUCATION SYSTEM



DEVELOPMENT STRATEGIES

- 1] Development of an active learning environment through SMART and digital educational platforms
- 2] Development of higher Education paradigm by introduction of career focused institutions, Mentor model - Research Centres (Institute of Eminence and national Importance)
- 3] Participation of private sector in Vocational Education and Industrial Training for Employability
- 4] Incentivising institutes to make 'Teaching' as a Secure and Attractive Career choice
- 5] Physical Upgradation and capacity building of existing institutes (to the level of Institute of Eminence and national Importance such as NIT, IITs)
- 6] Active sports to be integral part of the school education (Special emphasis on winter sports)



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Good Health
and Wellbeing

Ladakh
Now

MEDICAL AND HEALTH FACILITIES

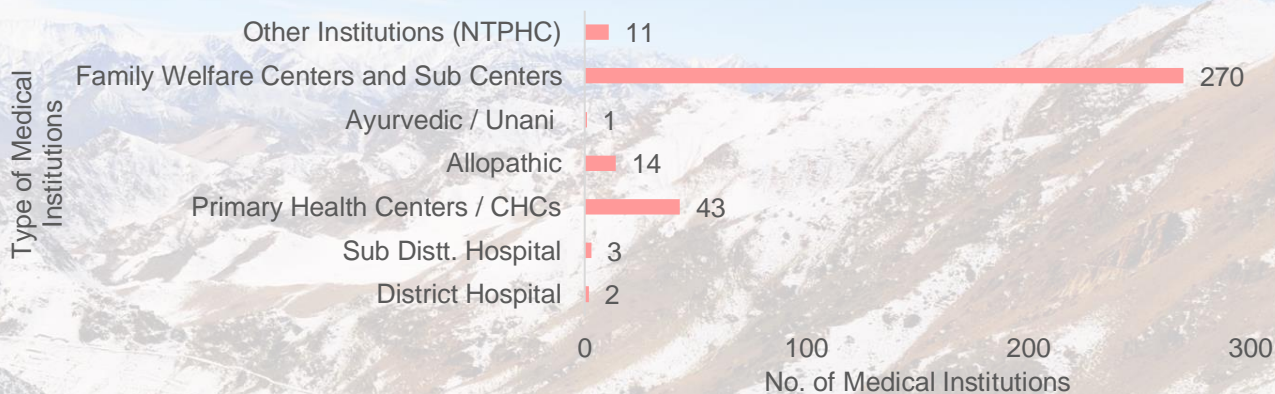
BACKGROUND AND CONTEXT

- ▶ UT of Ladakh has 344 Medical Institutions. 270 are family welfare centres, 43 CHCs/PHCs, 2 District hospital and 3 Sub-District hospital (2018-19).
- ▶ Bed Strength: Leh District has 42 beds per 10,000 population. (556 beds) and Kargil District has 18 beds per 10,000 population. (255 beds in total), against the recommended guidelines of 50 beds per 10,000 population of World Health Organization.
- ▶ Availability of Doctors: 5.1 doctors are available per 10,000 population in UT of Ladakh (140 doctors) against the norm (World Health Organization) of 10 doctors per 10,000 population. (2018-19). 6.2 doctors per 10,000 population (83 doctors) in Leh District and 4 doctors per 10,000 population (57 doctors) in Kargil.
- ▶ The people of Ladakh also depend upon 'Sowa-rigpa' (system of medicine given official recognition in August, 2011, through the Indian Medicine Central Council Amendment Bill 2010).

ISSUES, POTENTIAL AND CONSTRAINTS

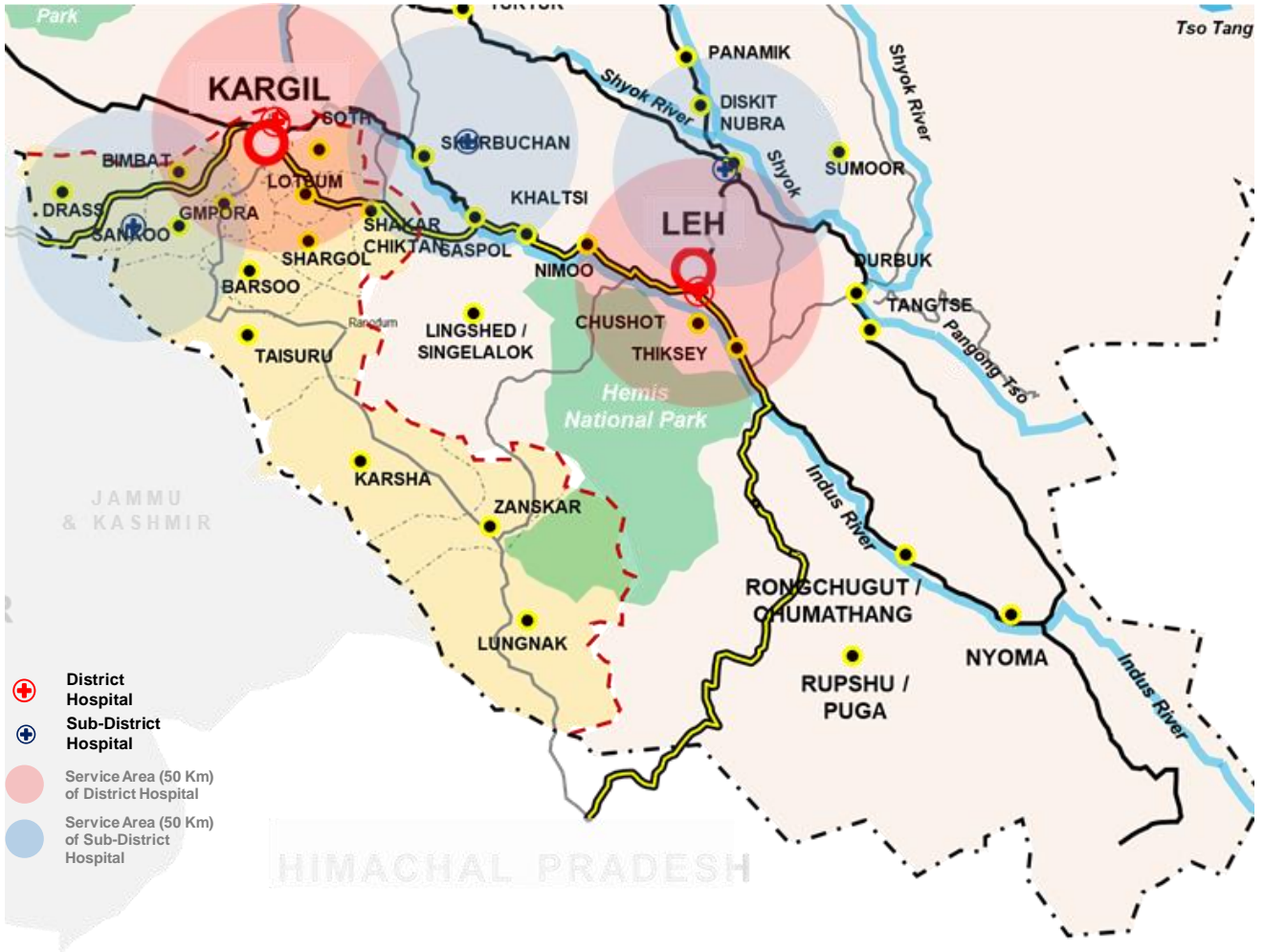
- ▶ Many of the health care institutions in Ladakh are understaffed, under-equipped or unutilised. It is imperative to optimally manage the existing infrastructure first and then develop facilities to enhance health care systems in the UT.
- ▶ Due to remoteness of settlements, scattered across the difficult terrain of the UT, access to specialised health care facilities is an a major concern for the people of Ladakh.
- ▶ Another major concern in health services in Ladakh lack of ongoing training and up-to-date exposure to modern health sciences.
- ▶ The Sowa-rigpa – traditional system of healing in Ladakh has declined with the increase in availability of modern medicines. It is imperative to take necessary steps to ensure the survival of this system in the future to serve the people of Ladakh.

NUMBER OF MEDICAL INSTITUTIONS (2018-19)



Ladakh
Now

MEDICAL AND HEALTH FACILITIES



District Hospital = 02
Sub-District Hospital = 03
PHCs = 57
FW Centres = 270
Bed Strength = 811

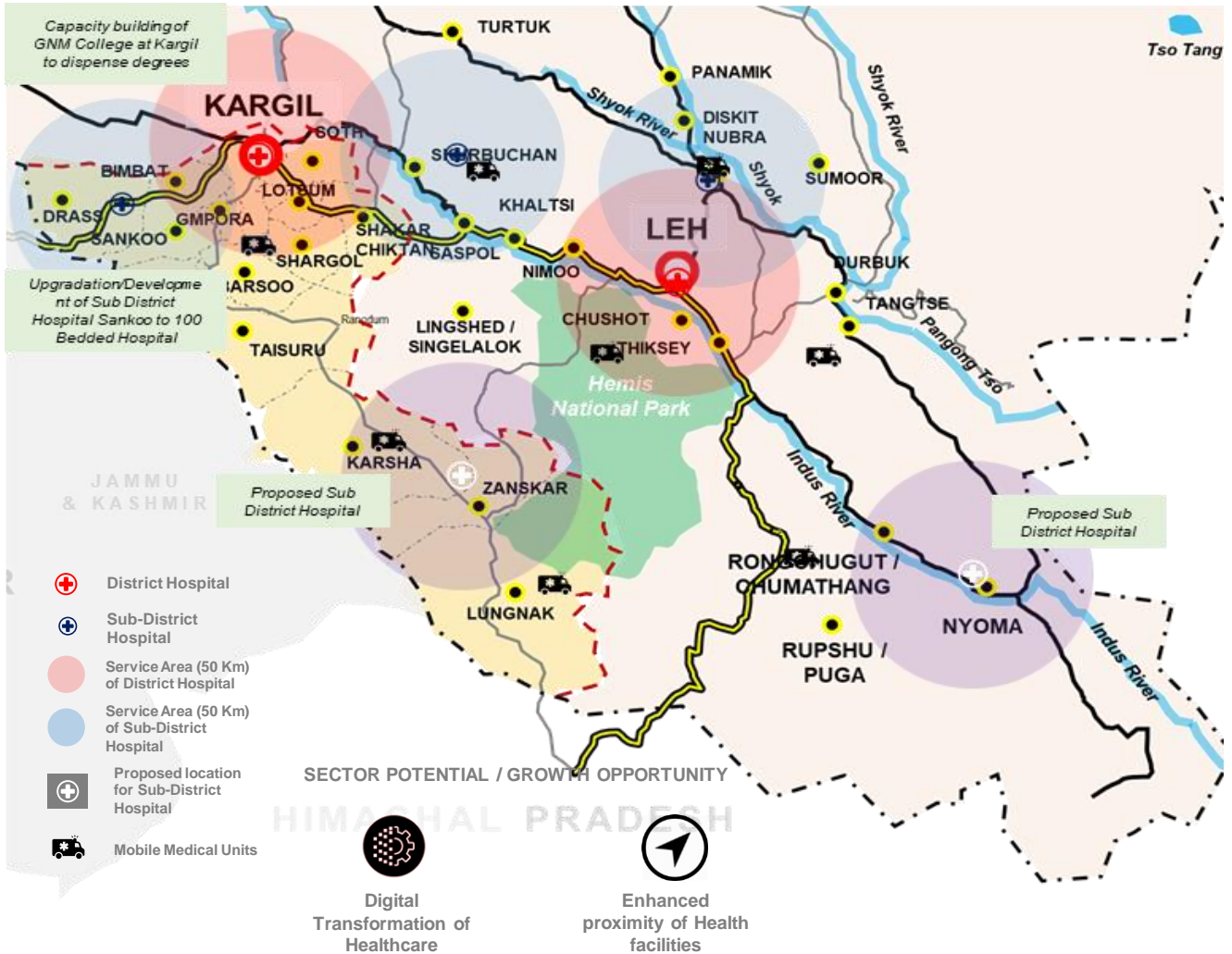
Doctor Population
ratio of 1:1973 against
the recommended
1:1000 by WHO

20% population having
difficult access to District /
Sub-District Hospitals

Lack of digital infrastructure in
terms of connectivity among
PHC's, sub-district and district
hospitals



MEDICAL AND HEALTH FACILITIES



DEVELOPMENT STRATEGIES

- 1] Expanding the medical resource base in the region by capacity Augmentation and establishment of Sub district hospitals
- 2] Door-step medical services to remote population
- 3] Providing high level healthcare facilities within one hour of reach
- 4] Creating digital connectivity in healthcare to promote social distancing
- 5] Developing advanced healthcare infrastructure with best quality services
- 6] Investment in Medical research and professional degrees



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Forest & Wildlife

FOREST AND WILDLIFE

BACKGROUND AND CONTEXT

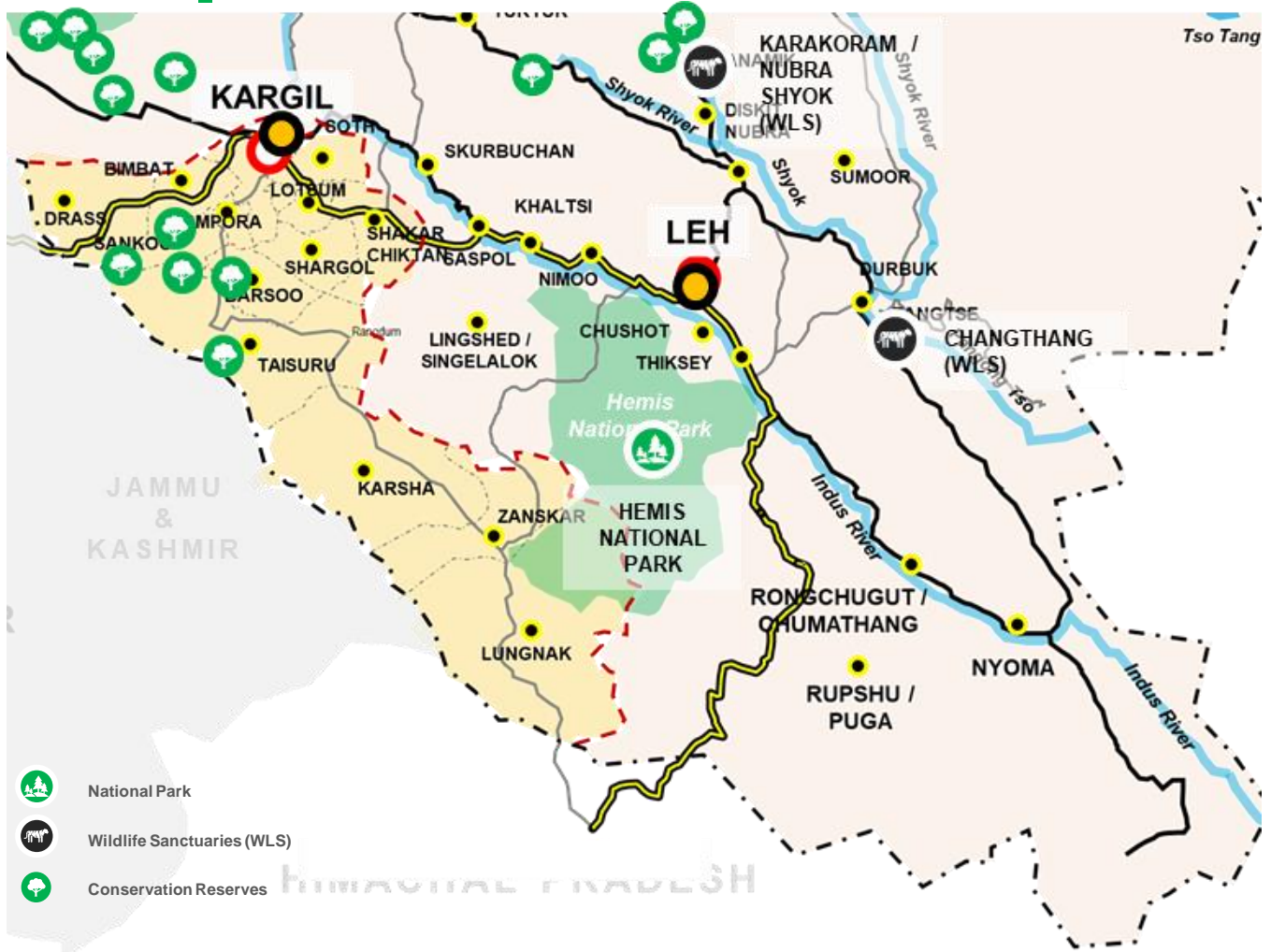
- ▶ Nearly 17,000 km. sq. area in Ladakh is designated as 'Protected Area (PA)' which includes 1 National Park, 2 Wildlife Sanctuaries, 4 Conservation Reserves and a number of smaller Protected Areas.
- ▶ This seemingly large PA coverage is offset by the fact that Ladakh does not have any designated reserve forest that could act as buffers and that a major portion of Protected Areas (up to 60%) comprise of glaciers and rock faces devoid of vegetation and of little use to wildlife.
- ▶ Ladakh is distinguished by highly evolved and diverse life forms, including a variety of aromatic and medicinal plants, several wild relatives of domesticated plants and animals and a charismatic mega-fauna, still preserved in its entirety unlike most other parts of the world.
- ▶ Ladakh harbours a large number of plants of special conservation, economic and ethno botanical significance: these include wild forage species and relatives of cultivated plants like Onion & Garlic (*Alium*), Barley (*Hordeum*), Gooseberry (*Ribes*), Rhubarb (*Rheum*), wild legumes (*Cicer*, *Trigonella* ssp) as well as a variety of aromatic and medicinal plants adapted to cold desert conditions (*Artemisia*, *Delphinium*, *Physochlaina*, *Tanacetum*, *Waldheimia* etc).
- ▶ Ladakh has regions which are prime habitats of some of the most endangered species in the world like the Tibetan Gazelle, Tibetan Antelope, Wild Yak and Black-Necked Crane.

ISSUES, POTENTIAL AND CONSTRAINTS

- ▶ Natural grasslands and forests have been reduced or degraded including by plantations of faster growing exotic species. Several species of medicinal plants and wild tree species like Junipers have become endangered due to over-collection and habitat degradation.
- ▶ Rare and endemic species of wild fauna have been pushed to the brink of extinction even in remote areas, under the pressure of uncontrolled developmental activities including tourism, overgrazing and poaching.
- ▶ Such erosion of the natural resource base poses a major challenge to the long term development and prosperity of Ladakh.
- ▶ There are good prospects to mitigate these threats if effective conservation and sustainable development steps are taken rapidly and decisively by the main stakeholders.
- ▶ Framing up of action plans for sustainable tourism in biodiversity hot spots; forming community conservation cum eco-tourism organisations; and training programmes in conservation and community based tourism; can help reduce the adverse impact of tourism development on such biodiversity rich areas of Ladakh.

Ladakh
Now

FOREST AND WILDLIFE



~17,000 km. sq. of Protected Area in Ladakh

- ▶ 1 National Park (3350 km. sq.),
- ▶ 2 Wildlife Sanctuaries (9000 km. sq.)
- ▶ 4 large Conservation Reserves and a number of small reserves

Major portion of Protected Areas (up to 60%) comprise of glaciers and rock faces

This area is devoid of vegetation and of little use to wildlife.

No designated forest reserves

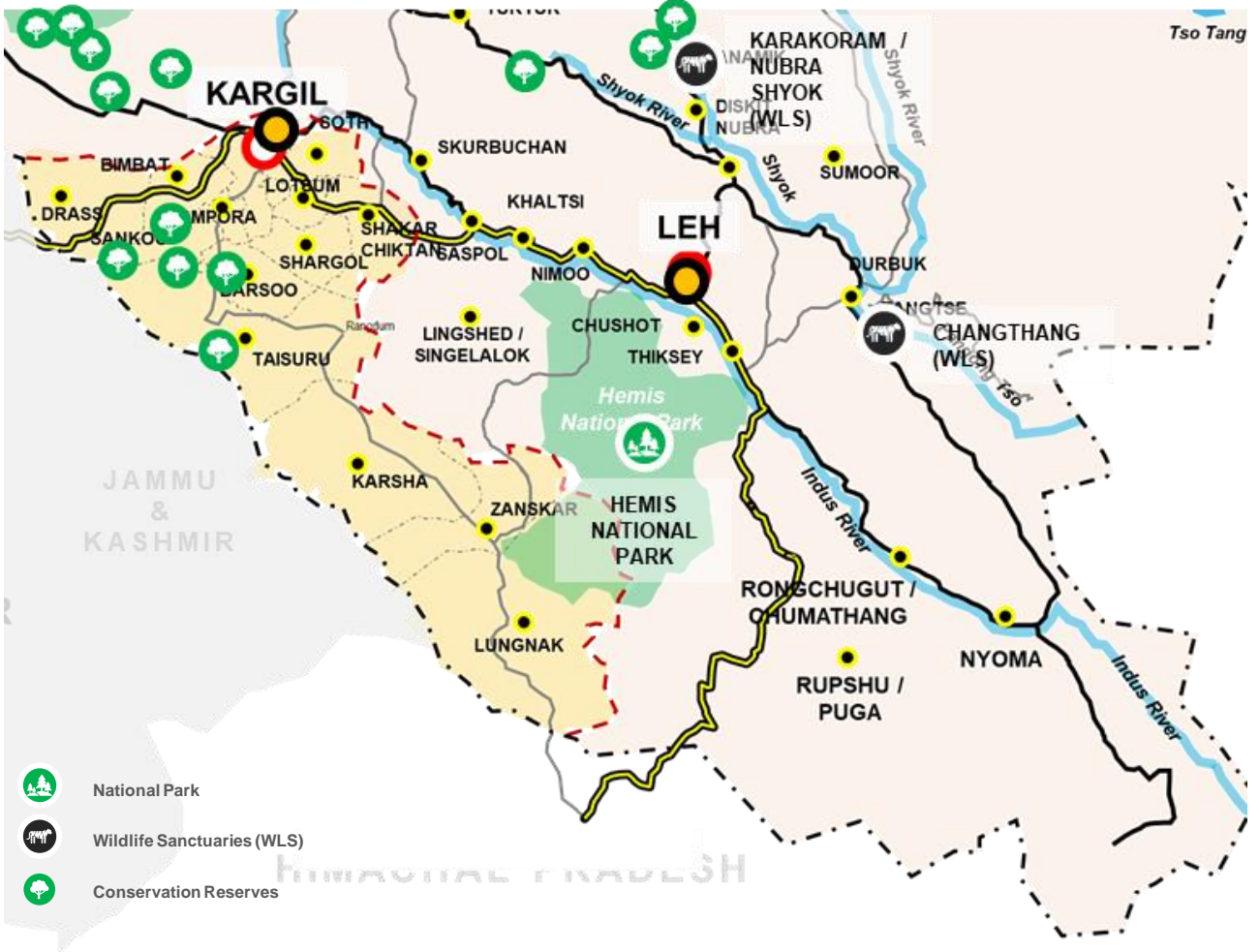
No clear delineation of forest areas lead to non-enforceability of forest conservation guidelines

Mountain Tourism – Disturbance and Destruction

Wildlife disturbance and destruction is a serious threat closely associated with uncontrolled tourist access to areas of high biodiversity.

Ladakh
Next

FOREST AND WILDLIFE



DEVELOPMENT STRATEGIES

- 1] Identify natural forest areas and grant protected status
- 2] Extensive afforestation programmes, mainly along river beds
- 3] Policy and plans for conservation of high altitude wetlands as biodiversity hot spots
- 4] Framing up of action plans for sustainable tourism in biodiversity hot spots
- 5] Forming community conservation cum eco-tourism organisations
- 6] Capacity Building in conservation and community based tourism
- 7] Developing appropriate rangeland management policies that balance the needs and aspirations of local herders' communities and wildlife conservation goals.
- 8] Capacity Building in wildlife conservation programmes



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The Truth Alone Triumphs
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Ladakh in 2047

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LADAKH'S OUTLOOK IN 2047

Hubs of Development, Urbanization and Economy

Leh, Kargil and Zaskar Blocks shall develop as 'Hubs' with major economic activities – large industries, district level infrastructure facilities, transportation hubs, hospitals, higher education and tourist attractions. While Leh and Kargil cities are already the urban centres, they need to be upgraded and equipped with essential infrastructure to cater the growing demand and sustain the economy of the UT.

On the other hand, developing Zaskar block on similar lines and at similar intensity would decentralise the economic development, would ensure essential services in the southern region of Ladakh and would control inter / intra-state migration of population for education, employment, etc.

Spokes – Sub Centres for Regional Infrastructure Development

Development of strategic locations apart from the 'Hubs', would localize the government services and provide sub-district level facilities for settlements in remote locations. The following blocks have been identified as spokes for development:

Kargil

District: Dras
Sankoo s
Taisuru

Leh

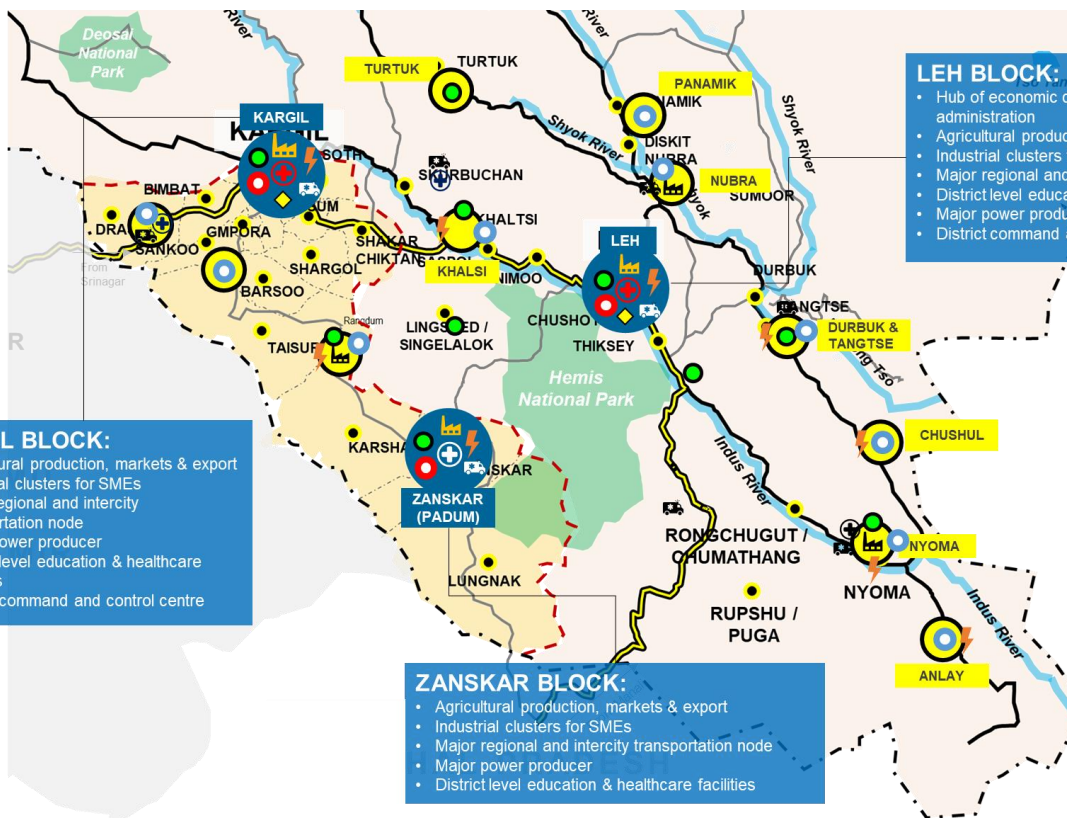
District: Nubr Durbu Chus Anlay
a k & hul
Panamik Khals Tangts Nyo
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Development of spokes will reduce the travel time to avail government services, markets, educational and health services to maximum of 1 hours from any remote location.



LADAKH'S OUTLOOK IN 2047

- Agricultural Clusters
- 🏭 Industrial Clusters
- Transportation Nodes
- ⚡ Power Hubs
- ⊕ Medical Zones
- 🚑 Mobile Medical Units
- ◆ District Command Control Centre



KARGIL BLOCK:

- Agricultural production, markets & export
- Industrial clusters for SMEs
- Major regional and intercity transportation node
- Major power producer
- District level education & healthcare facilities
- District command and control centre








LEH BLOCK:

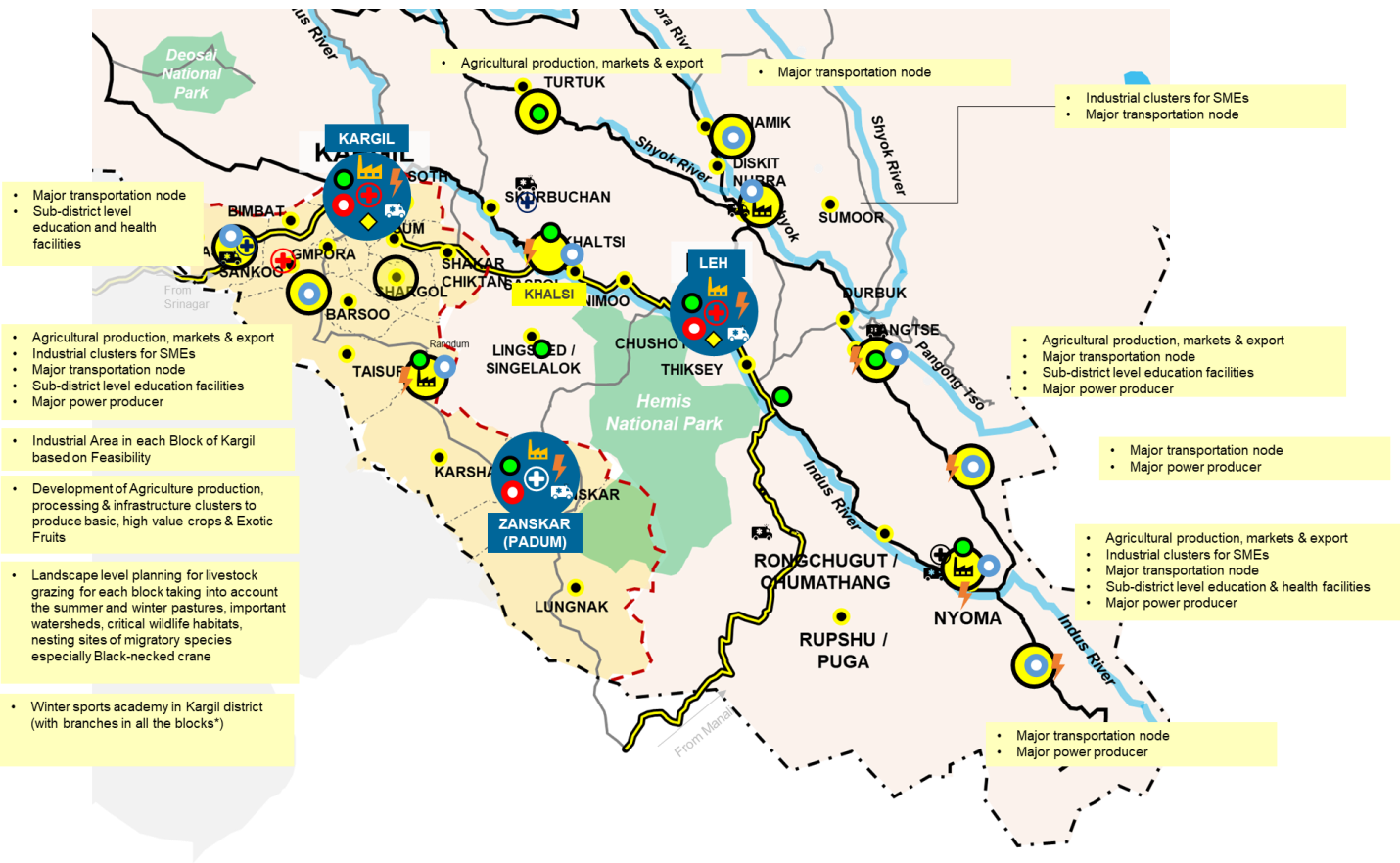
- Hub of economic development and UT administration
- Agricultural production, markets & export
- Industrial clusters for SMEs
- Major regional and intercity transportation node
- District level education & healthcare facilities
- Major power producer
- District command and control centre

ZANSKAR BLOCK:

- Agricultural production, markets & export
- Industrial clusters for SMEs
- Major regional and intercity transportation node
- Major power producer
- District level education & healthcare facilities

LADAKH'S OUTLOOK IN 2047

-  Agricultural Clusters
-  Industrial Clusters
-  Transportation Nodes
-  Power Hubs
-  Medical Zones
-  Mobile Medical Units
-  District Command Control Centre





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Acknowledgement

Administration of Union Territory of Ladakh would like to thank the Government of India, Hon'ble Lieutenant Governor, NITI Aayog, Ernst and Young LLP and the various below mentioned departments in Leh and Kargil for their assistance in providing the Insights, Information and Data.

- Home Department
- Planning Board
- Planning development and Monitoring
- Revenue, Disaster Management, Relief, Rehabilitation and Reconstruction
- Industries and Commerce
- PHE, Irrigation and Flood control
- Information Technology
- Housing and Urban Development
- Transport
- School and Technical Education
- Rural development and Panchayati Raj
- Youth Services and Sports
- Labour and Employment
- Hospitality and Protocol
- Finance
- Tourism and Culture
- Agriculture, Horticulture and Floriculture
- Animal / Sheep Husbandry
- Co-Operatives
- Public Works Department
- Power Development and Renewable Energy
- Social and Tribal Welfare
- Civil Aviation
- Forest Ecology and Environment
- Health and Medical Education
- Information Department