Views expressed in this presentations are my personal views not of Department of Railways.

Namaste and Good Afternoon

Our present fate

Our future goal


NEW CHINA

Our Destination

Railway history

- George Stefenson in 1814 AD produced the first steam traction locomotive used for railways
- First public railway was operated in 27 September 1825 between Darlington to Stockton in UK.
- First railway in India was operated in April 1853 between Mumbai and Thane 21 Miles.
- First railway in Nepal was operational in June 1, 1927 between Raxaul to Amlekhgunj 29 Miles (Martin & Company Calcutta).

Railway History

- Trade with the third country was possible only via Calcutta or Mumbai port
- Rana government realized to connect the door of Nepal (Birgunj) with Kathmandu by modern mode of transportation, Rails
- In April 1932 Nepal Government Railway (NGR) was established. (Air service began @ 1952-53 KTM to Indian cities)
- Nepal Jainagar Janakpur Railway (NJJR) was started on 1937 (31 Miles) served until 2014

NJJR before 2014

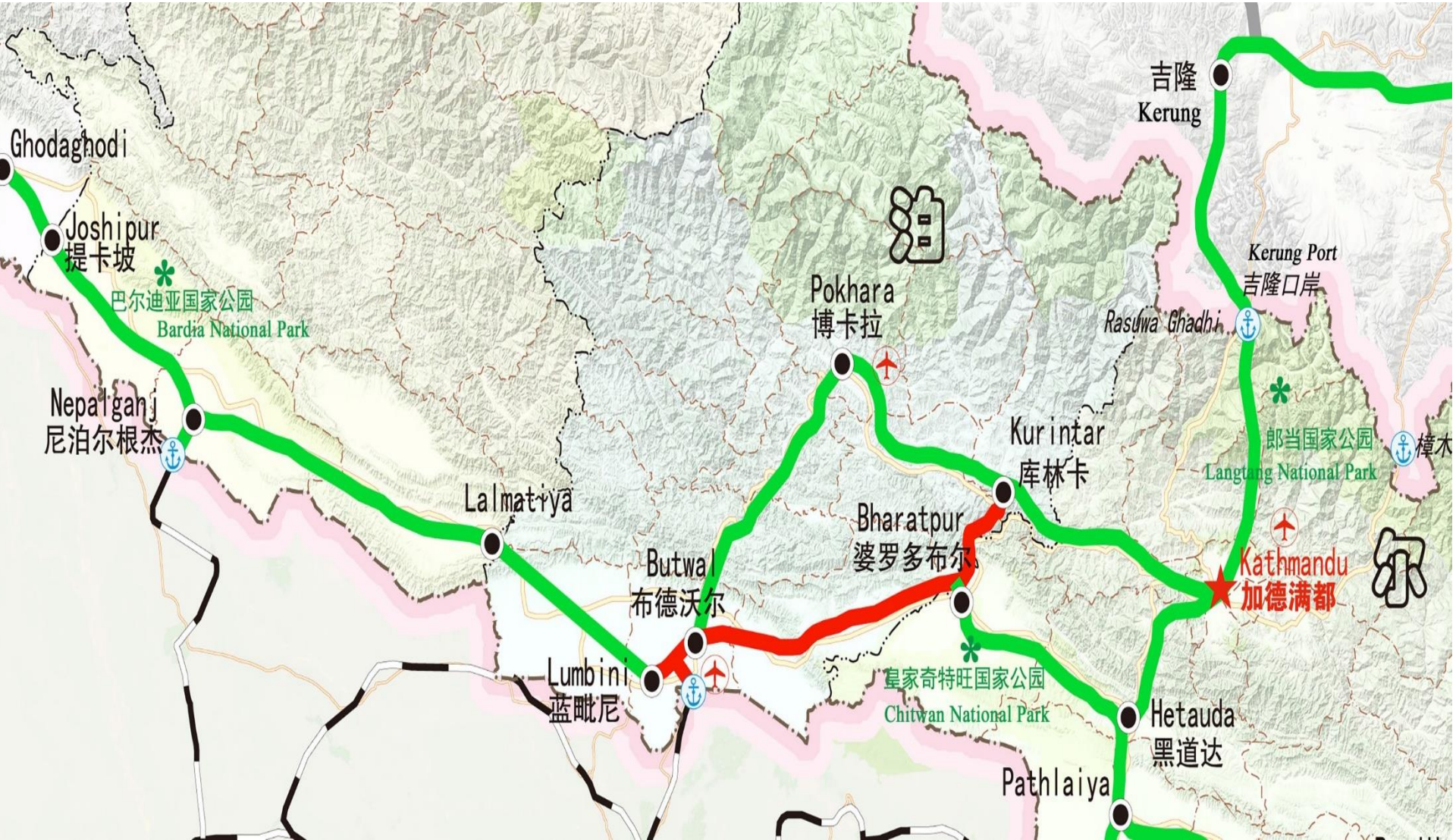
Initiatives for Railway Development

- In 1970 Indian experts recommended for the construction of electric railway from Raxaul to Kathmandu.
- Railway development plan is proposed in all 5 year plans but without positive outcome !
- Nepal signed International Agreement on Trans-Asian Railway Network on November 2006 and ratified on March 2012
- 2008 Establishment of Rail Monorail & Metrorail Project under the Ministry of Physical Infrastructure and Transport.
- 2009-Feasibility study of Mechi-Mahakali Railway (925km)

Initiatives for Railway Development

- 2010-MOU between GoN and GoI for the development of Cross Border Railway line at five border towns.
- 2012-Feasibility study of Kathmandu Metro completed (77Km). *Korean Consultants*
- 2012-Establishment of Department of Railway
- Pre feasibility study of Kathmandu-Pokhara (164 km) completed by CREC China.
- Preliminary study of Kurintar-Lumbini 157Km completed by the grant assistance of PRC

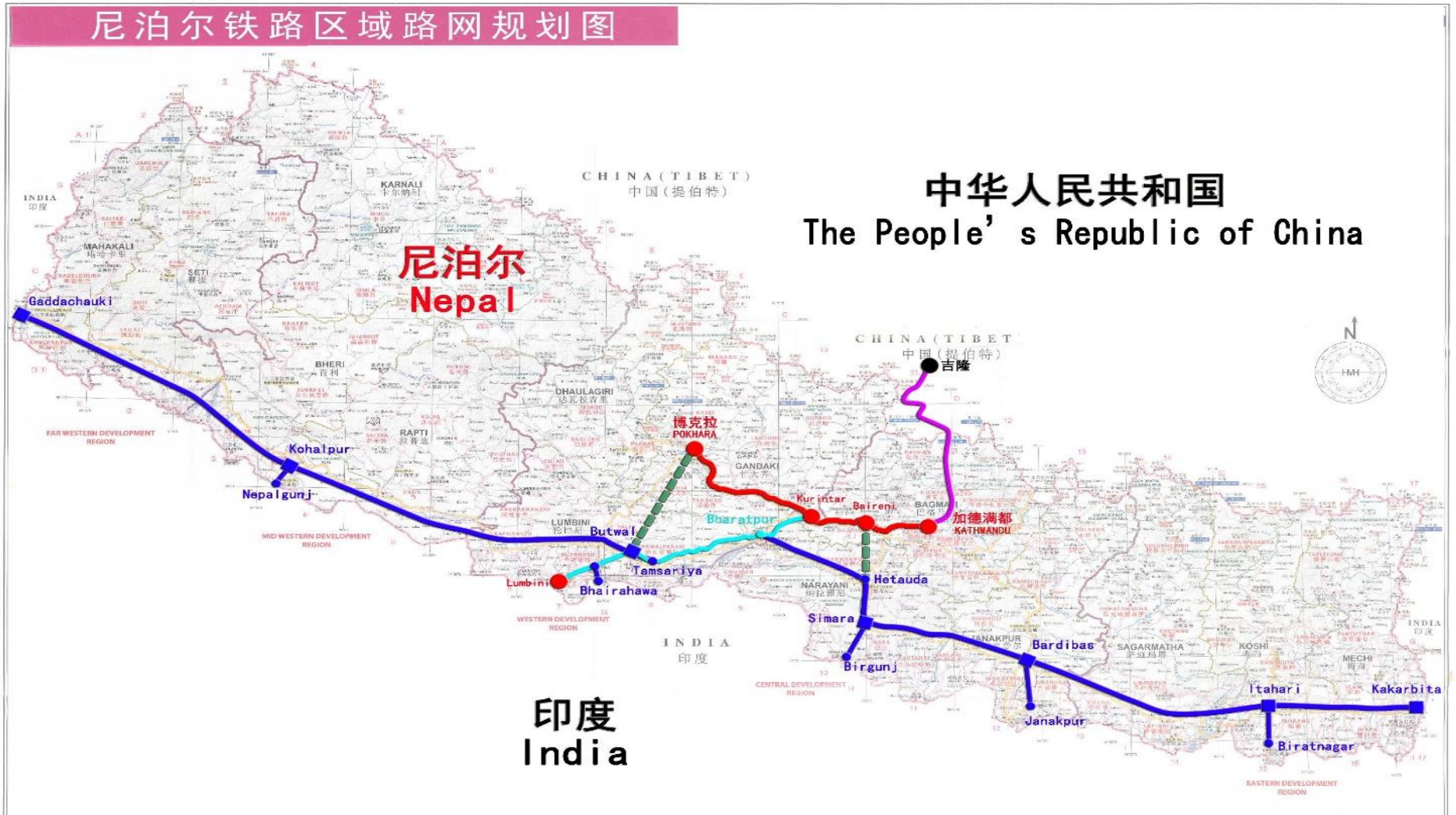
Preliminary study done by Chinese Consultant in Kurintar-Lumbini section in 2017



Initiatives for Railway Development

- 2017- FSDI on behalf of PRC Government submitted the Pre-Feasibility study Report of Kerung (Tibet)-Kathmandu Railway
- 2022- MoU between GoN and PRC for the Feasibility study of Kerung Kathmandu Railway
- FSDI is conducting Feasibility study of Kerung Kathmandu 73 KM. Study Report shall be submitted after 3 years
- 2014-Construction of Bardibas-Chocha (69Km) started. Still under construction

Pre-Feasibility study Report of 163.468 KM long Kathmandu-Pokhara Railway (with 14 stations) was done under the Grant assistance of PRC



प्रमुख कार्यक्रम तथा आयोजना

नेपाल सरकारको लगानीमा सञ्चालित योजनाहरु:

१. पुर्व पश्चिम विद्युतीय रेलमार्ग योजना

२. काठमाण्डौ उपत्यका मेट्रोरेल आयोजना

भारत सरकारको सहयोगमा सञ्चालित योजनाहरु:

१. विरगंज (रक्सौल)–काठमाण्डौ विद्युतीय रेलमार्ग योजना (बिस्तृत अध्ययन, FLS)

२. नेपाल भारत अन्तराष्ट्रिय नाका जोड्ने रेल मार्ग योजना (Cross-Border Railways)

चीन सरकारको सहयोगमा सञ्चालित योजना:

१.केरुङ्ग–काठमाण्डौ विद्युतीय रेलमार्ग योजना (संभाब्यता अध्ययन) *सुरू*

२.काठमाण्डौ पोखरा रेलमार्ग तथा काठमाडौँ लुम्बिनी रेलमार्ग (पुर्व सम्भाव्यता अध्ययन) *सम्पन्न*

Raxaul Kathmandu Broad guage Electrified Railway Study

PROPOSED RAILWAY STATIONS
in PROPOSED ROUTES

Sr. No.	Station Name	Chainage (km)	Remarks
1	Raxaul Jn.	0.000	Existing Stn.
2	Birgunj	6.800	
3	Belwa	17.350	
4	Manaharwa	30.200	
5	Sapahi Bazar	42.100	
6	Nijgadh	56.800	RORO Facility
7	Makawanpur	66.200	
8	Dhiyal	82.400	
9	Shikharpur	94.800	
10	Sisneri	121.580	
11	Sathikhel	135.050	
12	Kathmandu	140.790	Terminal Stn. RORO Facility

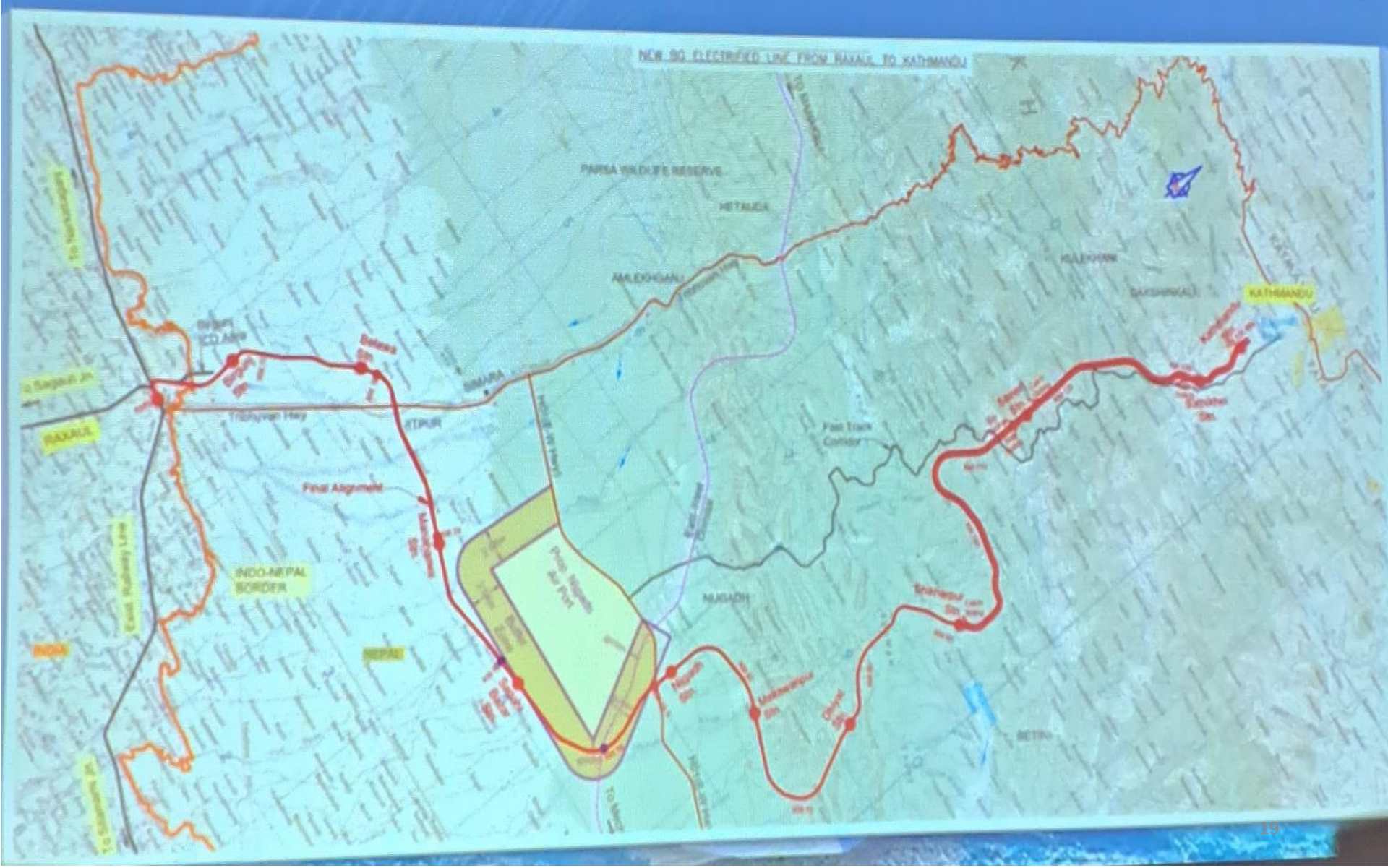
SALIENT FEATURES OF ALIGNMENT

Gauge	: 1676 mm (BG)
Route length	: 140.790 kms
Total Track km	: 243.601 kms
Ruling Gradient	:1 in 80 (Compensated) in Plains and Semi Hilly 1 in 50 (Compensated) in Hilly section
Number of Curves	: 47
a) Sharpest Curve	: 1.25 degree
b) Length of Curves	: 51.95 kms
Number of Stations	: 12
Number of Minor Bridges	: 122
Number of Major Bridges	: 101
Number of Important Bridges	: 18

SALIENT FEATURES OF ALIGNMENT

Number of ROBs & RUBs	: 39 nos.
Number of Tunnels	: 31 nos. (Total L- 40.865 kms)
a) Length of Longest Tunnel	: 7.780 kms
b) Length of Single Tube Tunnels	: 10.620 kms
c) Length of Twin Tube Tunnels	: 30.245 kms
Signalling	: Multiple Aspect Colour Light Signaling Std III (R)
Interlocking	: Electronic Interlocking with Panel operation.
Mode of Operations	: Absolute Block System
Traction	: 25 kV A. C. Traction System
Land Requirement	: 1478.20 Ha
Esti. Cost (excl. Land)	: INR 23,945 crore. , NPR 38,312 crore
Period of Construction	: 60 months (excluding land acquisition)

FINAL ALIGNMENT– Raxaul to Kathmandu



Status of Cross-Border Rail Transport

- There are total of 6 possible identified points of cross-border connectivity with India. Cross-boarder Railways with India are implemented under the Indian Grant.
- Freight train is in operation in Raxaul (India) –Birgunj (Nepal) section; 0.6 Km in Nepal and Bathnaha-Biratnagar 2 Km.
- Cross-border rail connectivity at 6 border points with India is shown below


Maquan R.
China
Simikot
Darchula
Seti R.
Baitadi
Gaddachoki
Dandeldhura
Jumla
Silgarhi
Karnali R.
Mustang
Bheri R.
Attariya
Dhangadhi
Birendranagar
Nepal
Kohalpur
Pokhara
Pokhara
Abukhaireni
Rasua Garhi
Kathmandu
Baglung
Tulsipur
Pyuthan
Nepalganj
Butwal
Kali R.
Burkha
Butawal
Kathmandu
Bhadgaon
Patan
Siddharthanagar
Tamsariya
Ramechhap
Simara
Bardibas
Birganj
Itahari
Kakarvitta
Dharan
Janakpur
Rajbiraj
Biratnagar
Arun R.
Ganges R.
Itahari-Biratnagar-Jogbani
Kakarvitta - New Jalpaiguri
Kohalpur –Nepalgunj–Nepalgunj Road
Butwal-Bhairahawa-Nautanwa
Simara-Birganj-Raxaul
Bardibas-Janakpur-Jaynagar

Planned routes and railway lines under construction (cross-border rail)

- Links between border towns of India and Nepal have already been started to construct at two locations with the grant assistance of the Government of India.
- **Phase I (Under Construction)**
- **Bathnaha**(India)-**Biratnagar** (Nepal) **18.60 Km; 7.6 Km in operation**
- **Jaynagar** (India) **–Bardibas** (Nepal) **69.00 Km; 51Km in operation**

Planned routes of railway lines (cross-border rail) contd.

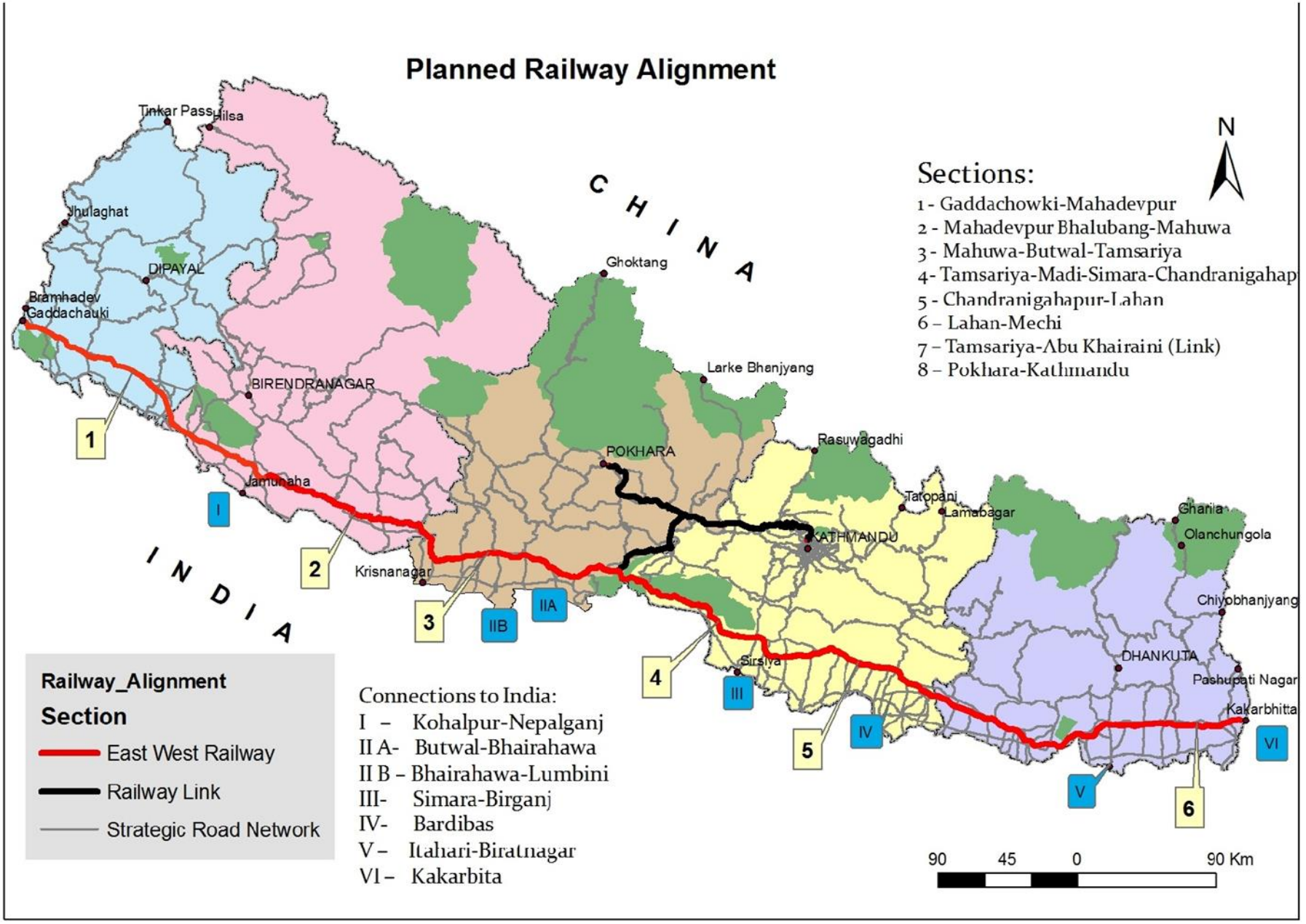
Phase II

- **New Jalpaiguri** (India)– **Kakrabhitta** (Nepal)
  72.00 Kms
- **Nautanwa** (India) **–Bhairahawa** (Nepal)
  15.30 Kms
- **Nepalganj Road** (India)– **Nepalganj** (Nepal)
  12.10 Kms

Planned routes and railway lines under construction

Mechi-Mahakali (East-West) Electrified Railway (Top Priority)

S.N	Name of Link	Approx Length (Km)	Present status of the Link
1	Bardibas- Simara-Birgunj	108+28=136	DPR Completed **construction of track bed and cross drainage works undergoing on 69 Km**
2	Simara Tamsaria	127	DPR (excluding EIA) Completed/rerouted
3	Tamsaria-Butwal-Lumbini	65+44=109	DPR (excluding EIA) Completed
4	Butwal-Kohalpur	215	DPR (excluding EIA) Completed
5	Kohalpur-Gaddachouki	189	DPR (excluding EIA) Completed
6	Kakadbhitta-Bardibas	254	DPR Completed


Planned Railway Alignment
Tinkar Pass
Hilsa
Jhulaghat
DIPAYAL
Bramhadev
Gaddachauki
BIRENDRANAGAR
Jamunaha
Krisnanagar
Ghoktang
Larke Bhanjyang
POKHARA
Rasuwagadhi
Tatopani
Lamabagar
KATHMANDU
Ghania
Olanchungola
Chiyobhanjyang
DHANKUTA
Pashupati Nagar
Kakarbhitta
Sirsiya
CHINA
INDIA
N
Sections:
1 - Gaddachowki-Mahadevpur
2 - Mahadevpur Bhalubang-Mahuwa
3 - Mahuwa-Butwal-Tamsariya
4- Tamsariya-Madi-Simara-Chandranigahap
5 - Chandranigahapur-Lahan
6 – Lahan-Mechi
7 – Tamsariya-Abu Khairaini (Link)
8 – Pokhara-Kathmandu
1
2
3
4
5
6
I
IIA
IIB
III
IV
V
VI
Railway_Alignment
Section
East West Railway
Railway Link
Strategic Road Network
Connections to India:
I – Kohalpur-Nepalganj
II A- Butwal-Bhairahawa
II B – Bhairahawa-Lumbini
III- Simara-Birganj
IV- Bardibas
V – Itahari-Biratnagar
VI – Kakarbita
90 45 0 90 Km

Nepal Railway at Janakpur

- 52 KM length of Jainagar-Janakpur-Bijalpura Broad Guage Railway has been constructed under the technical and financial assistance of the Government of India
- Railway service is operating in this section since 2022 April
- Remaining length of 17 KM from Bijalpura to Bardibas will be constructed by the Indian assistance in near future. Land acquisition in progress at this section
- Two sets of train is running with full occupancy in this section

Nepal Jainagar Janakpur Railway

Railway initiatives

- 2013-DPR of Simara-Bardibas section of MMR and Simara-Birgunj Link, Simara-Tamsaria and Tamsaria-Butwal completed (length 372Km)
- 2014-Construction of Bardibas-Chocha (69Km) started.
- DPR preparation works on last section of East West Electrified Railway Chocha – Hatauda-Bharatpur (Amarapuri) is undergoing. Final report expected by the end of December 2023

POLICY

CURRENT POLICY

रेल यातायातः

- रेल यातायात संचालनको लागि मागको आधारमा संभाव्य क्षेत्रहरुको पहिचान गरी यसलाई राष्ट्रिय यातायात प्रणालीभित्र समन्वयात्मक रुपमा विकास गर्न दीर्घकालीन योजनाको तर्जुमा गरीनेछ। **(Long-term program will be developed)**

राष्ट्रिय यातायात नीति, २०५८

- तत्कालै संभाव्य भएका वा हुनसक्ने क्षेत्रहरुमा सडक यातायात संगको तुलनात्मक लाभको आधारमा निजी क्षेत्रको संलग्नतामा रेल यातायात विकास गरिनेछ।
- **(Rail system at advantageous sectors will be developed involving Private sector)**

POLICY

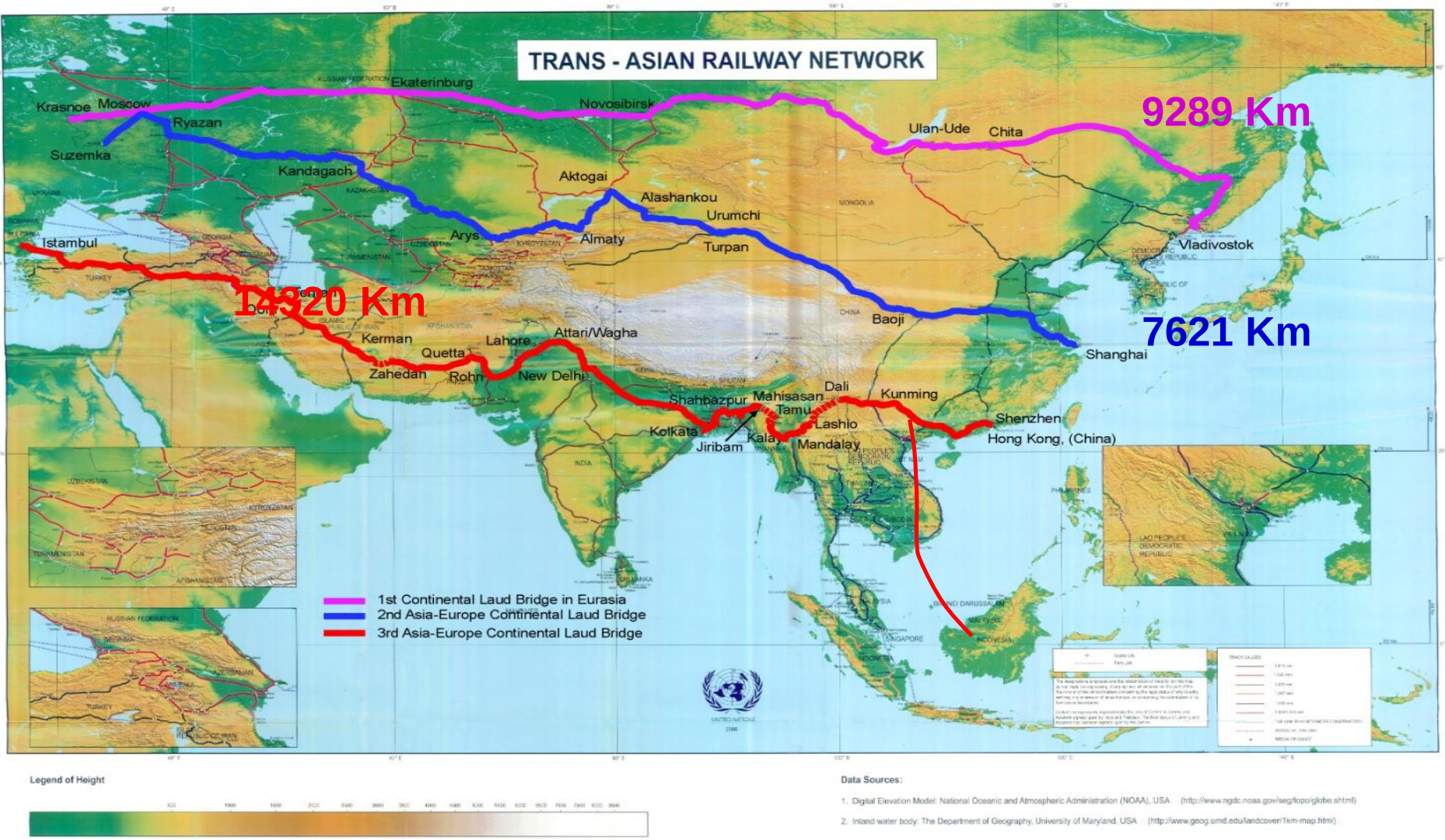
CURRENT POLICY

रेल यातायातः

- रेल यातायातको विकास तथा संचालन संस्थागत रुपमा विकसित गर्न निजी क्षेत्रलाई प्रोत्साहन गरिनेछ। **(Private sector will be encouraged)**
- मौजुदा रेल संरचनालाई भारतीय रेल सेवा संग समन्वय गरी विस्तार तथा विकास गरीनेछ। **(Rail structures will be developed in Coordination with Indian Railway service)**
- जल विद्युत उत्पादनको समुचित उपयोगलाई ध्यानमा राखी विद्युतीय रेल सेवाको विकास गरीने छ। **(Electric Rail services to facilitate Hydropwer development).**

राष्ट्रिय यातायात नीति, २०५८

Trans-Asian Railway network



OPPORTUNITIES

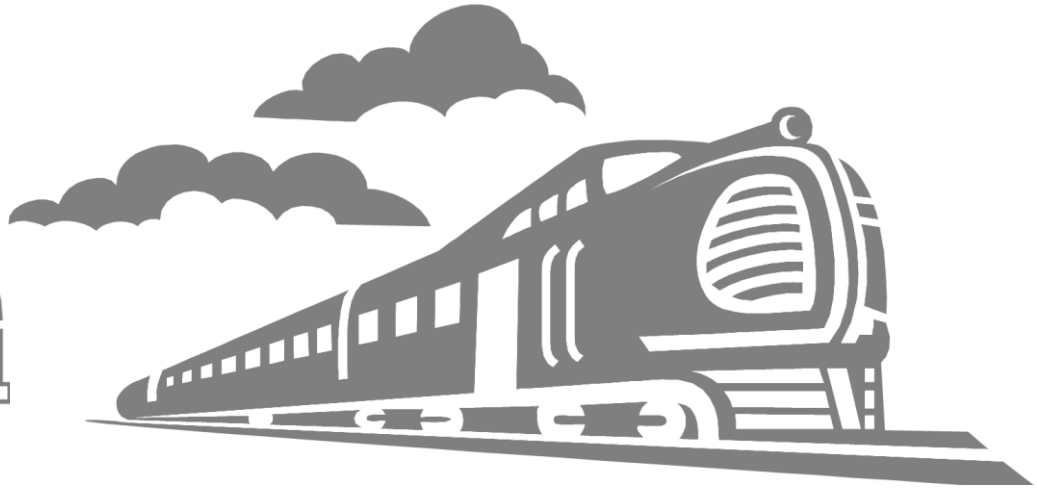
TAR

- Nepal is a member of Trans Asian Railways (TAR) since 2006. Due to lack of rail system and any immediate plans (other than the study and Initial Construction of under consideration link) to create rail linkages at present, it will not be in a position to avail desired advantage of the TAR.

OPPORTUNITIES

Railways is Environmentally more Friendly than Roads

CLIMATE CHANGE



Opportunities

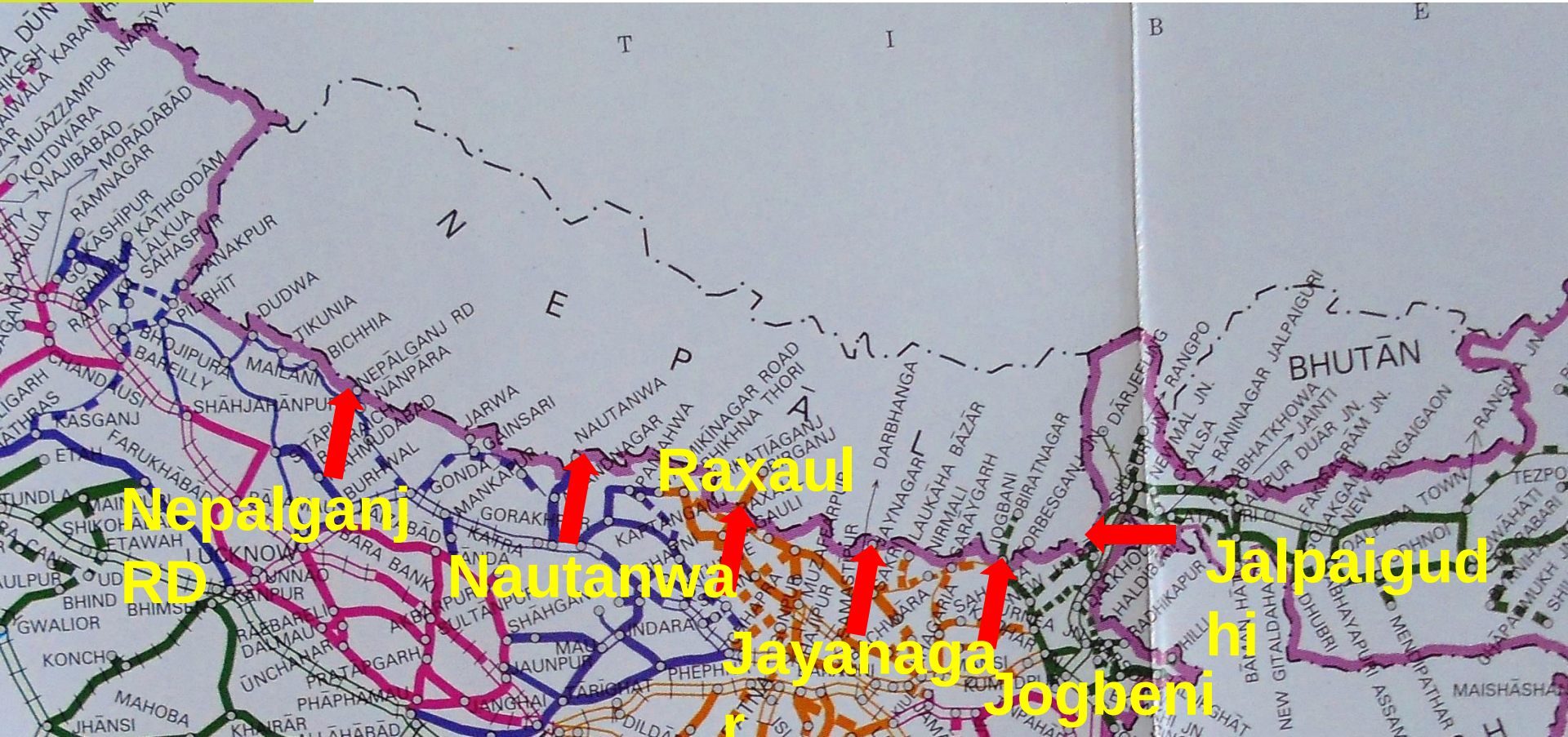
Use of Deplomacy

- Neighboring nations are willing to cooperate us on railway development – We should be able to grab the offer
- RSA and MOU on Technical cooperation in Railway sector with India – It is now time to gain from
- Annual intergovernmental meeting with both the neighbors- we have to put our problems and plan

Opportunities

Neighboring Countries

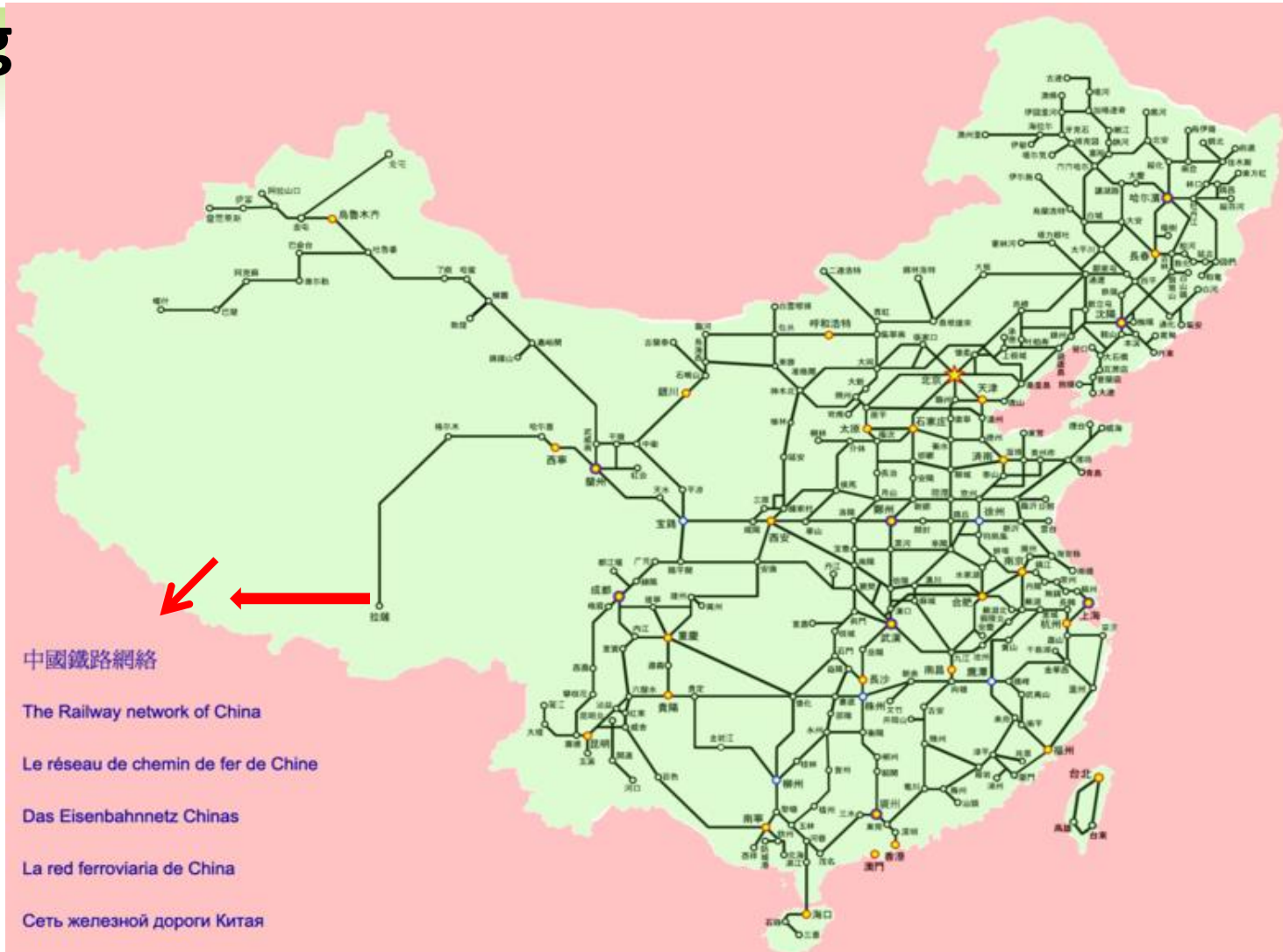
INDIA



Opportunities

Neighboring Countries

CHINA



Opportunities

Use of Deplomacy

- Developed countries have surplus technocrats, technology, construction materials and equipments at present – We should be able to harness those resources
- Tunneling on mountains – It is now common to construct Railway tunnels on mountains

OPPORTUNITIES

USE OF IT

- **People – Smart ticketing (paperless travel) can be done using mobile technologies**
- **Goods – Big Data can help in moving goods in the most efficient and cheapest way**
- **Maintenance/Operation – Tracks and other subsystems can be monitored to deliver a safe mode of travel**

OPPORTUNITIES

Having low nos. of units of Rolling Stocks and Track than Road use of IT is easy in Railway System

USE OF IT

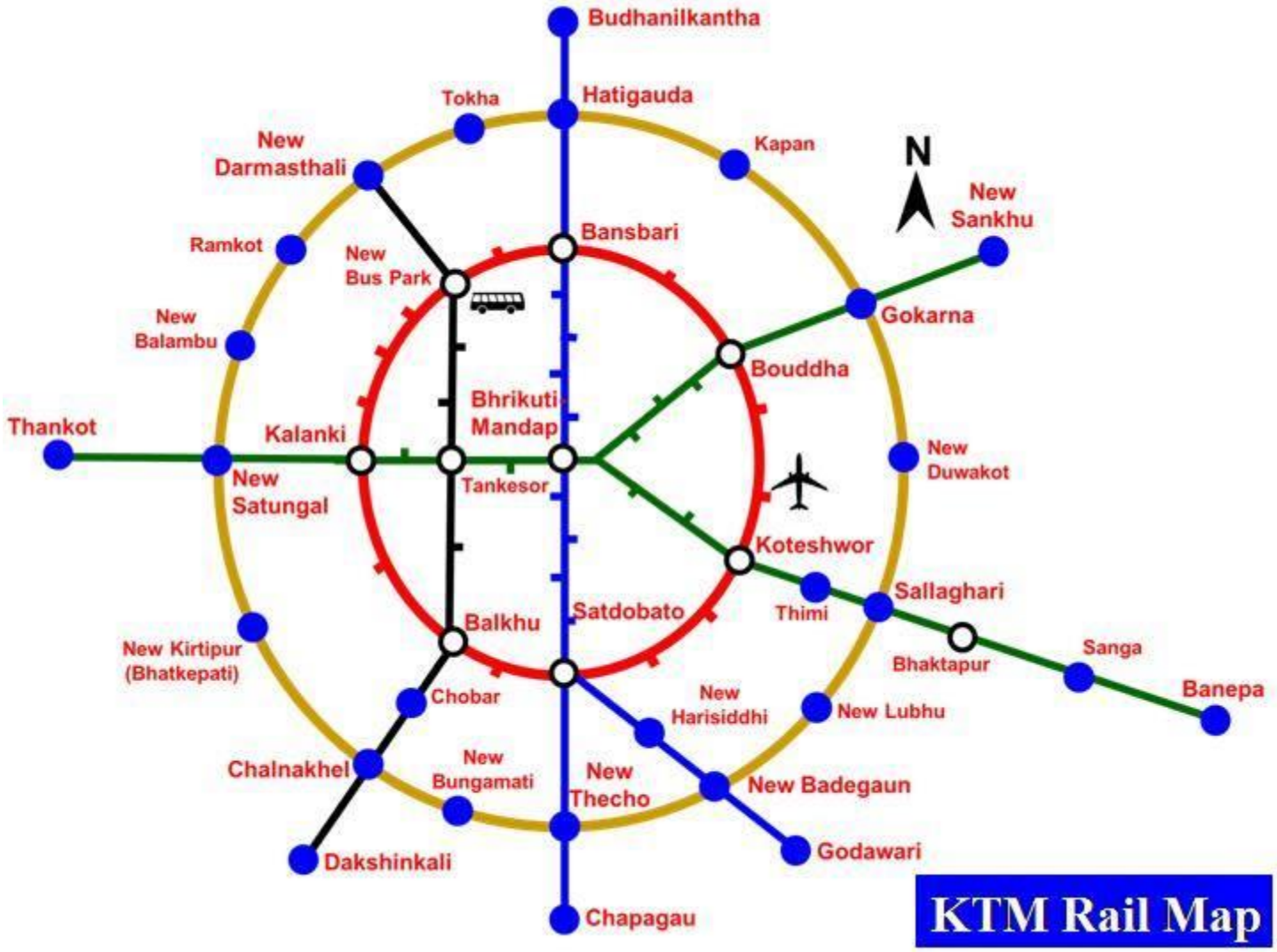
- **IT and digital technologies have made transportation through Railways cheaper and faster**
- **Digital railways will help reduce operational expenditure and the safety of passengers and freight**
- **Smart Railway**

Final Route Plan, Kathmandu Metro Rail

Total Route Length	77.28 km
Number of Line	5
Number of Station	57
Number of Depot	5

ITEM	Location	Route Length (km)	Number of stations
Line 1	Satdobato ~ Ratana park~Narayan Gopal chok	12.10	11 (5+6)
Line 2	Kalanki~ Kalimati ~New Baneshwar ~ Airport	11.15	9 (5+4)
Line 3	Koteshwor ~Chabahil ~Kalanki ~Satdobato ~Koteshwor	28.53	17 (9+8)
Line 4	Swaymbunath ~ Dilli Bajar ~ Chabahil ~ Bouddha	11.70	10 (6+4)
Line 5	Dhobighat~ Singh Darbar ~Naksal~Gongabu	13.80	10 (4+6)

Greater Kathmandu Rail Map suggested by an independent study group



Recent Developments about Railways in Nepal

- Study Cross country Railway line connecting China and India is ongoing
- FLS of 141 Km of Raxaul Kathmandu BG Electrified Railway has been completed by Government of India. Report yet to be submitted to GON
- Feasibility Study of 73 Km Kerung Kathmandu Railway is undergoing by PRC.

Plans of government

- The Ministry of Physical Infrastructure and Transport has set a target to develop 348 kilometres of railway tracks in Nepal in current five years plan. Progress is 52 Km only !
- No further expenditure on railways except committed works will be done in the next fiscal year 2080/81 due to the shortage of budget

Future plans of government contd.

- Construction of 77 km long metro rail in the Kathmandu valley
- Construction of cross border links with India at five different locations.

Challenges for the railway development in Nepal

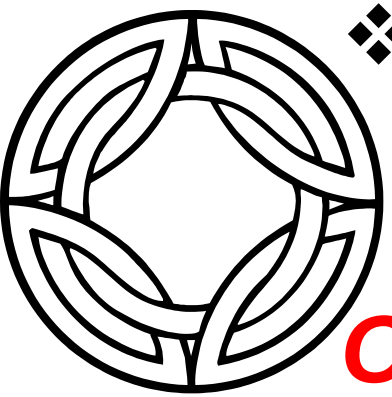
- Lack of experience in Railway development and management
- Lack of funding for railway construction, operation and maintenance
- Infra structure development in rugged and fragile topography
- Political instabilities and prolonged transition phase

PROBLEMS

- **Budget**
  - **Very Low Allocation of Budget**
  - **925 km with total 1250 arab) @ 10 years 125 arab/year**
    For civil engineering works~ 100 arab/year
- ***Coordination***
  - ***EIA and Forest***
  - ***Land Compensation /House***
- ***Local Construction Material***
- ***Aggradation***
- ***Lack of Technical Human Resources***

CONCLUSION

- Rail provide Long distance transportation facilities in cheaper cost
- Enhance the strength of Country
- Road provide short distance and door to door transportation facilities



Combination of Rail, Road & Air transportation will bring sustainable development in transportation sub-sector.

Thank You

Views expressed in this presentations are my personal views not of Department of Railways