

# Terrain Study

5 Corps AOR



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

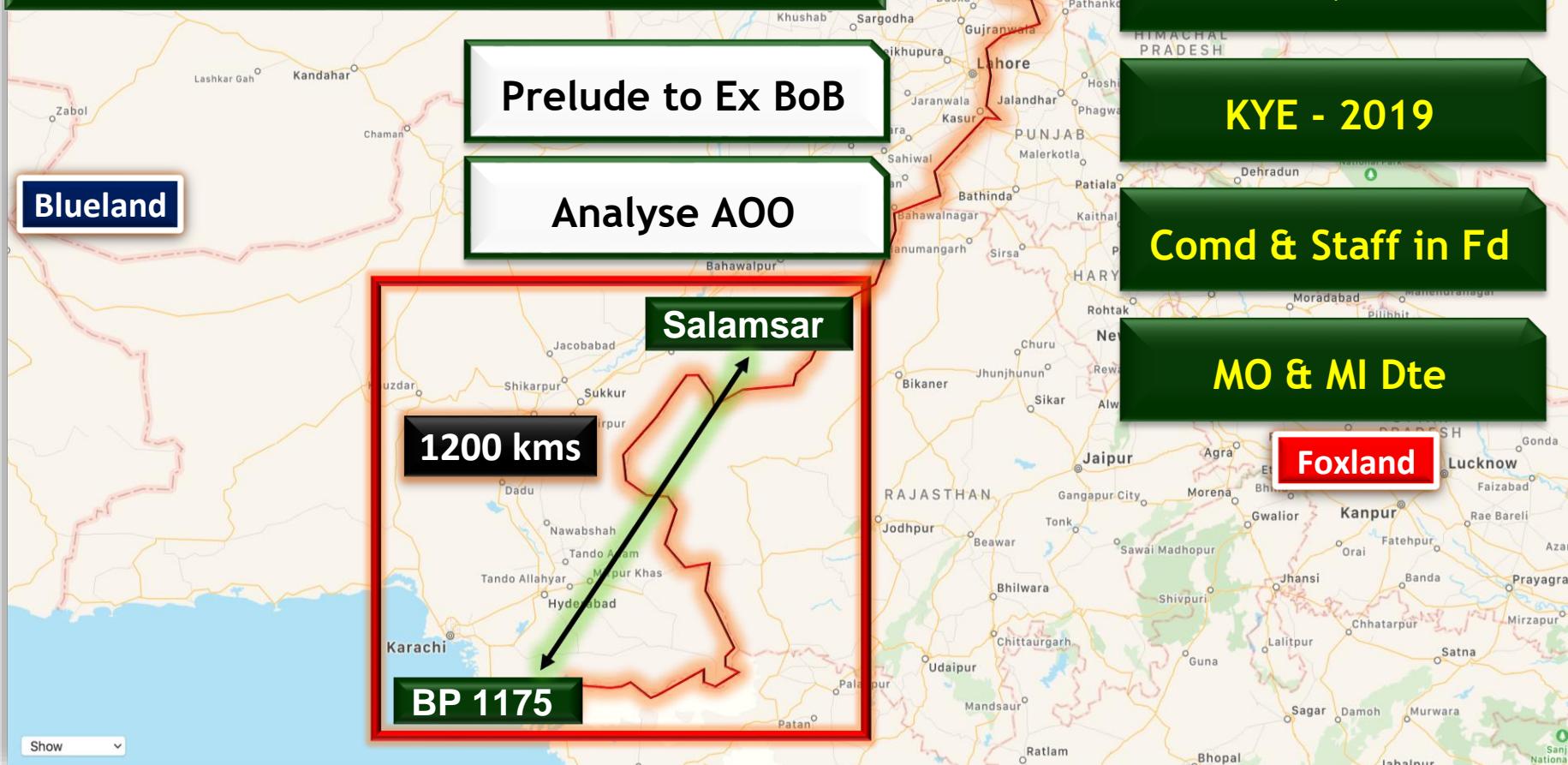
# Terrain Study

5 Corps AOR



# Intro

Only Corps where **tri-svc appl** is likely due  
to presence of **coast and creeks**



# Aim

To analyse the terrain of 5 Corps AOR; its significance in context of past Indo-Pak Wars & impact of recent re-lochs in FL SC forces on the conduct of ops to build understanding of participants

# Seq

PART -I



Terrain Analysis

Lt Col Sardar  
Aamer

PART -II



History of Indo-Pak Wars

Lt Col Abdul  
Rehman

PART -III



Maj Concls from Z of Op

Lt Col  
Khalfan

PART -IV



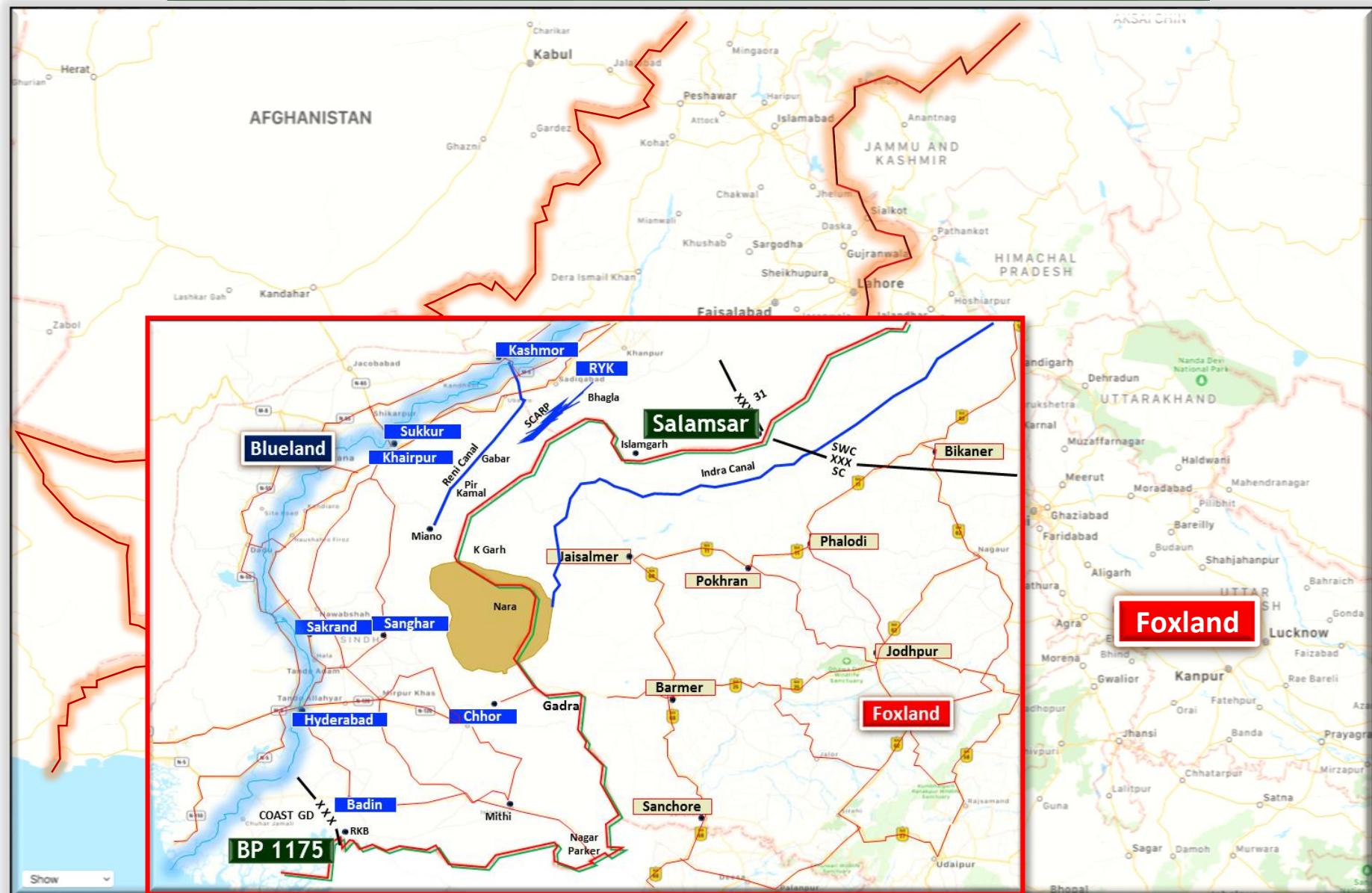
Re - locs in FL SC & Impact on BL ops

Lt Col Ali

## PART - I

# Terrain Analysis

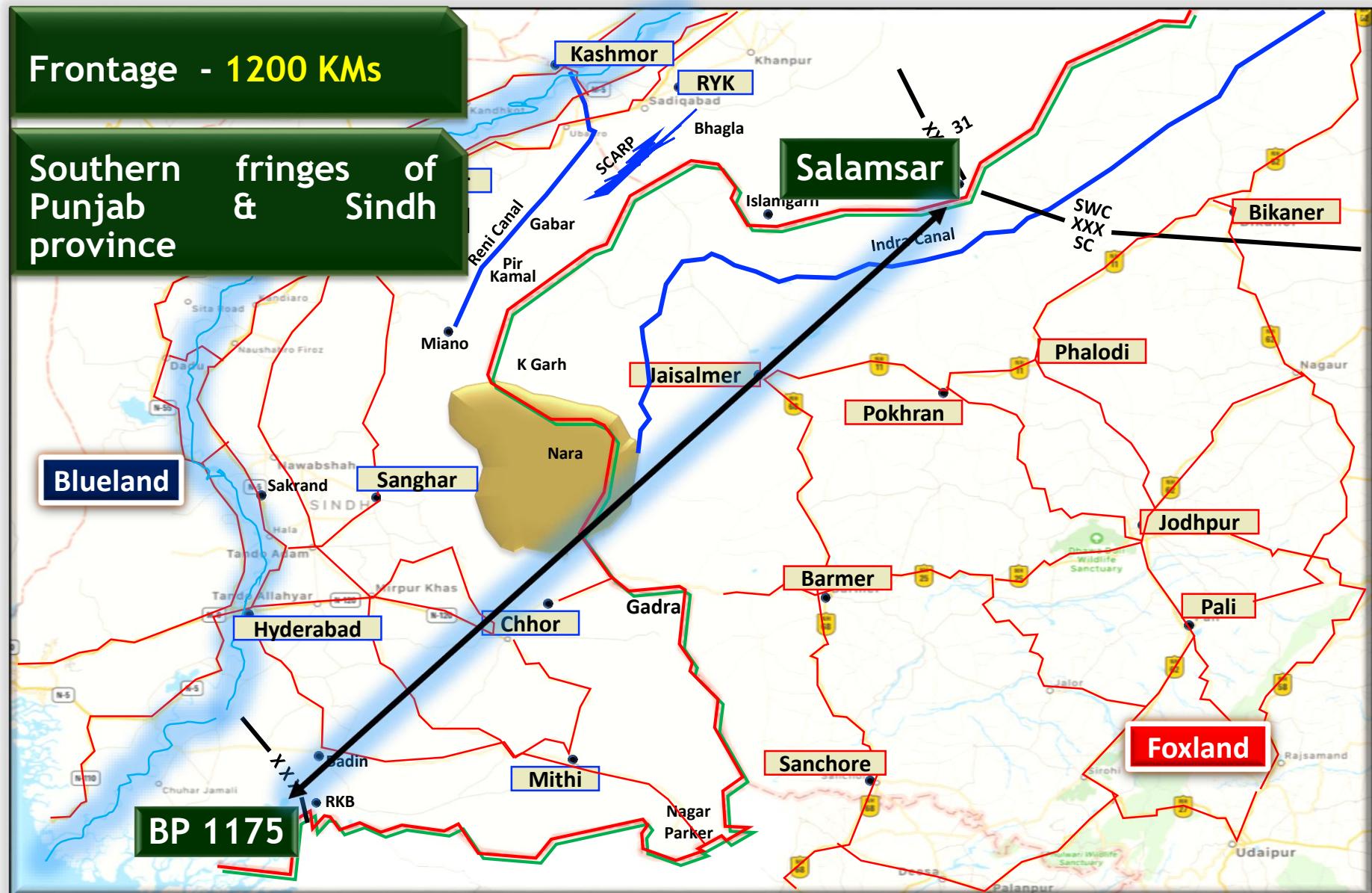
# Orientation - AOR



## Orientation - AOR

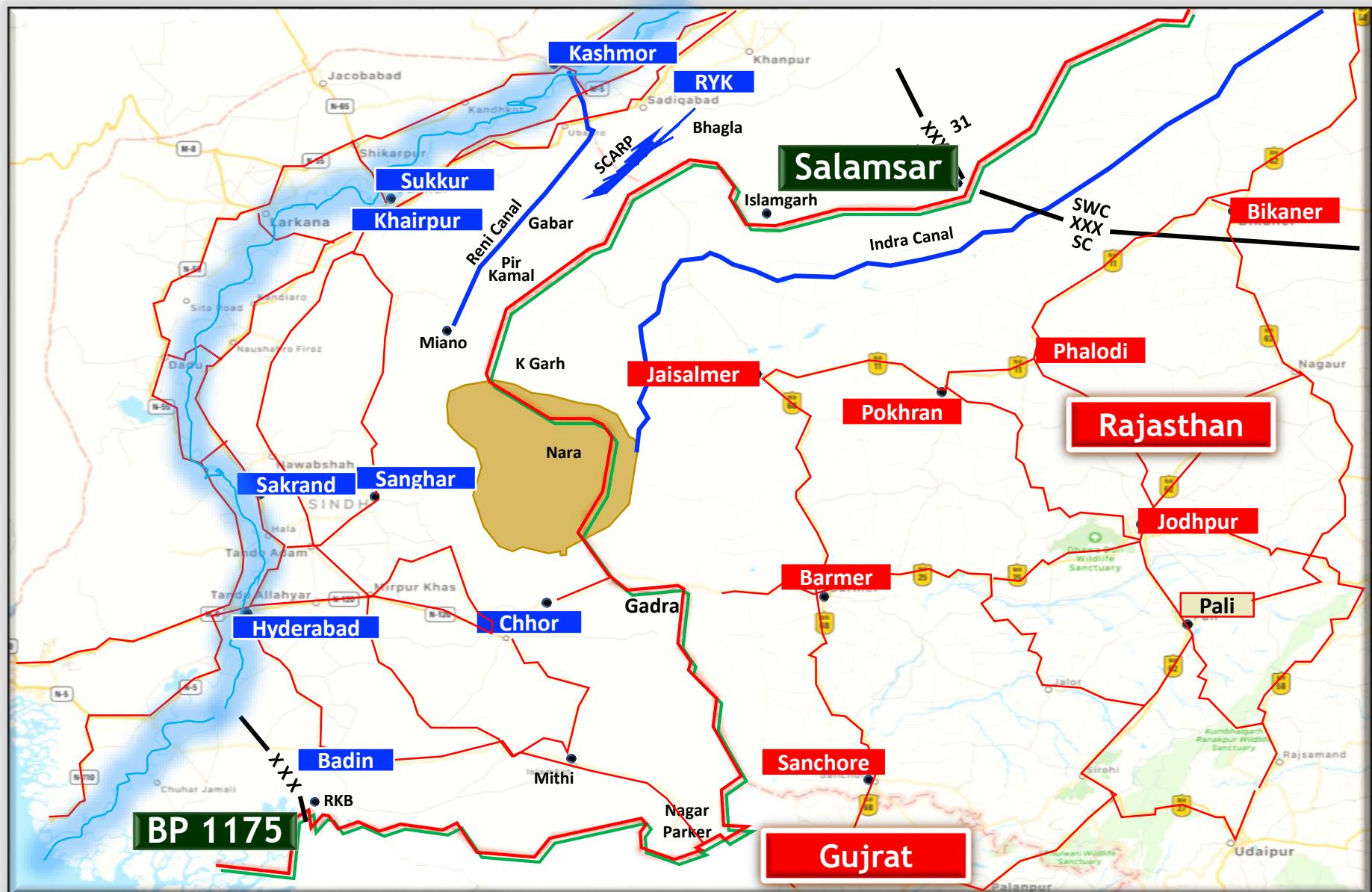
# Frontage - 1200 KMs

## Southern fringes of Punjab & Sindh province



# Orientation - AOR

10



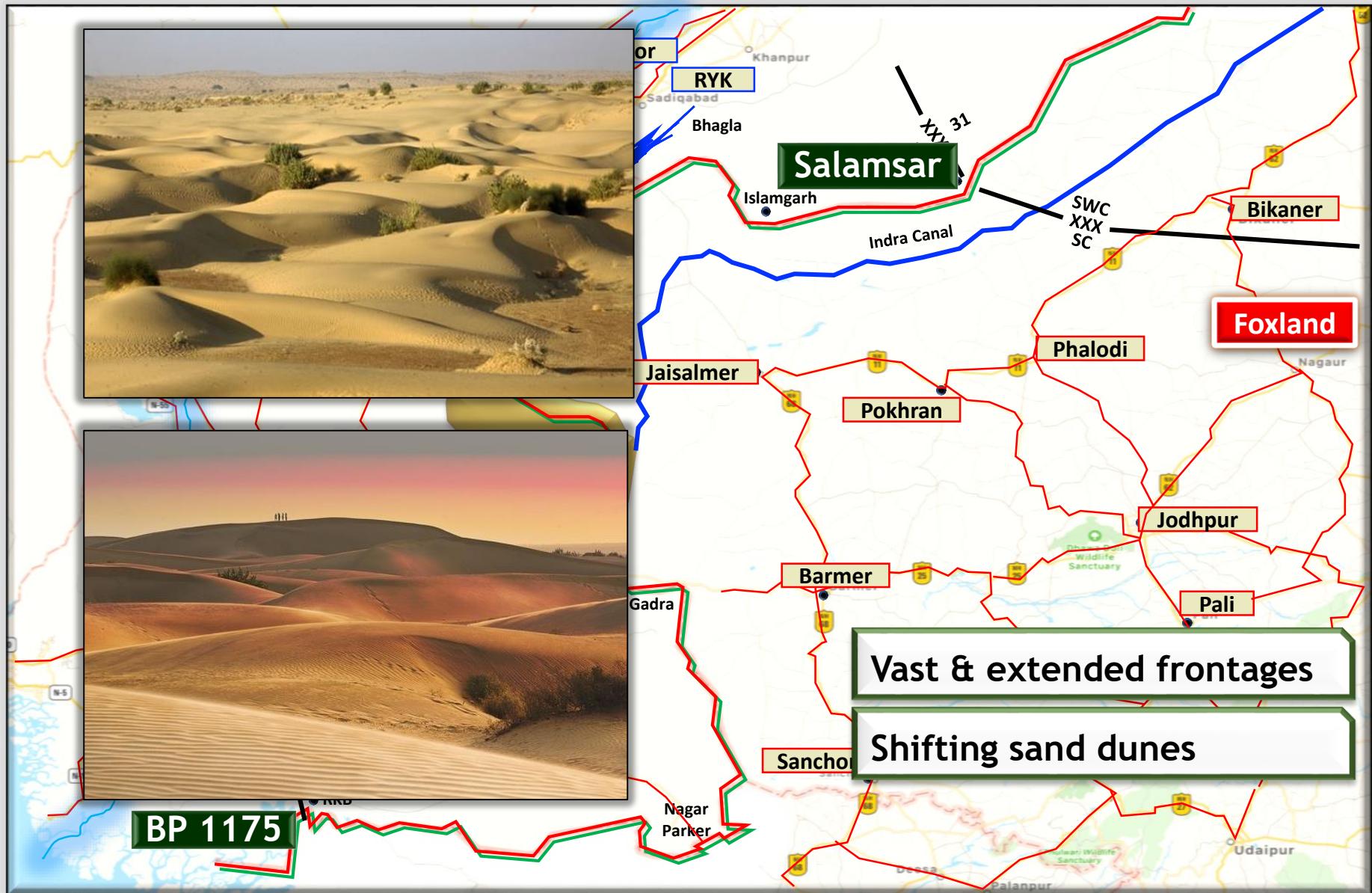
## Terrain Analysis

# War Hist

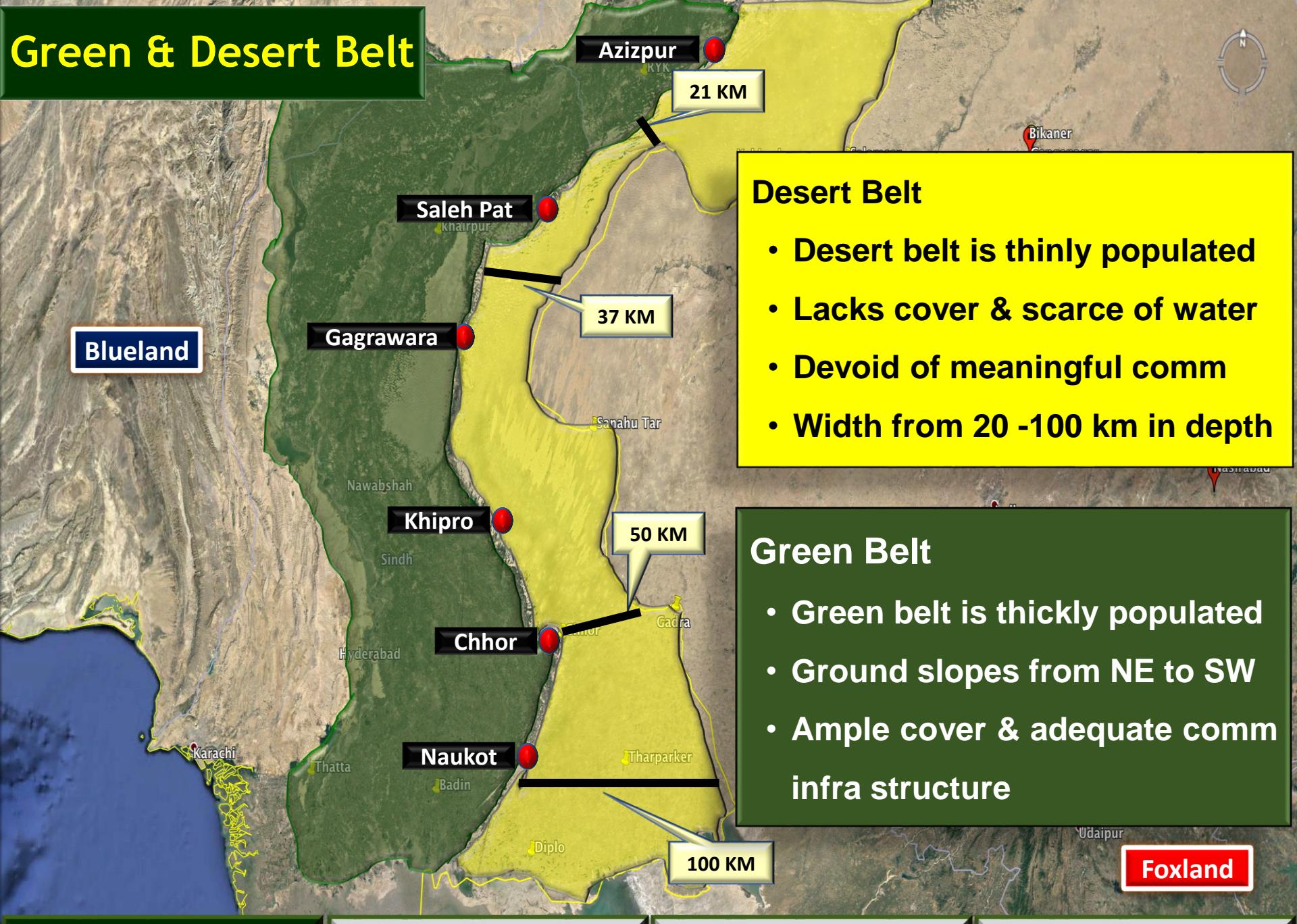
## Maj Concls

FL SC Re-loc

# Orientation - AOR

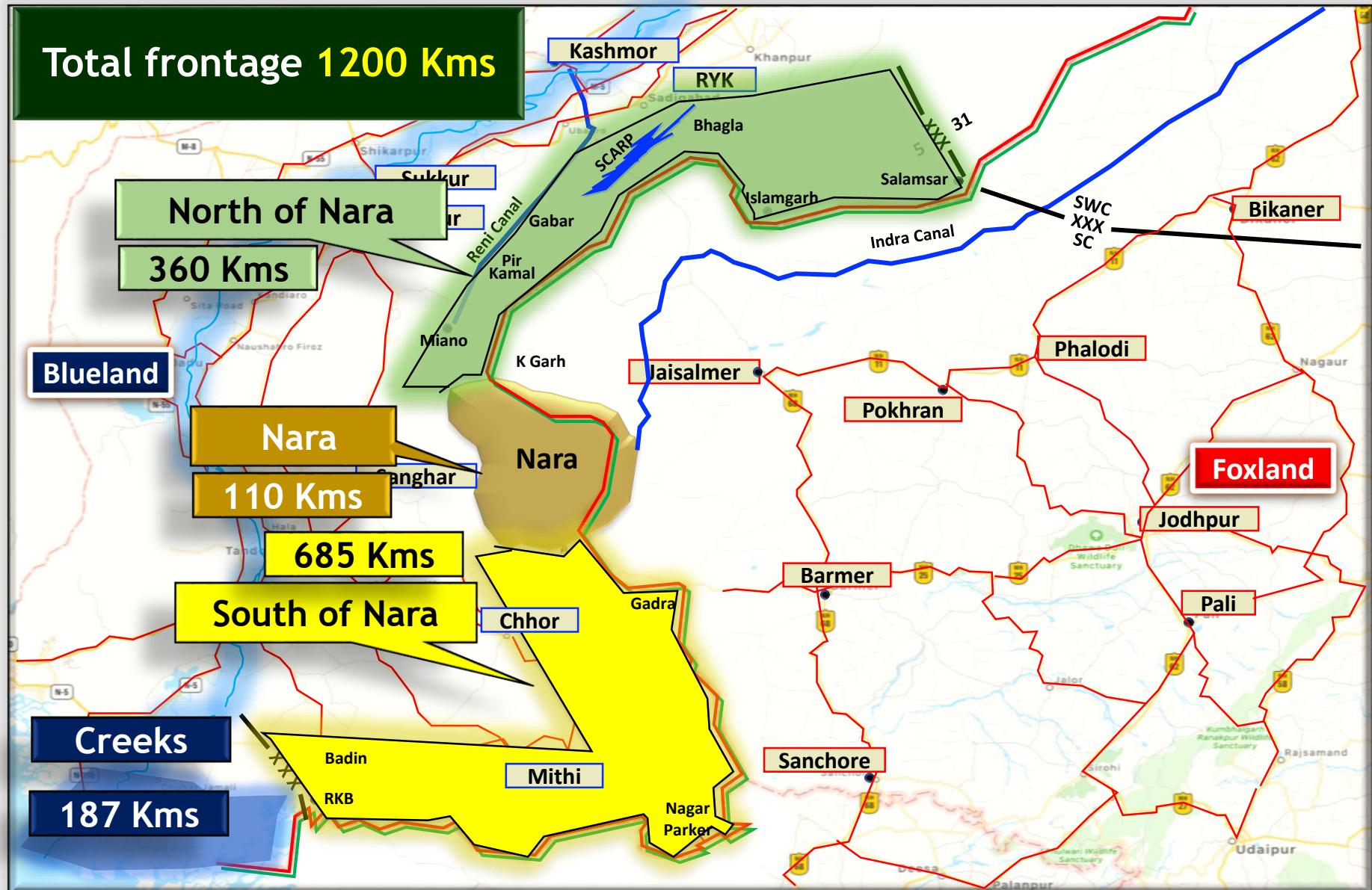


# Green & Desert Belt

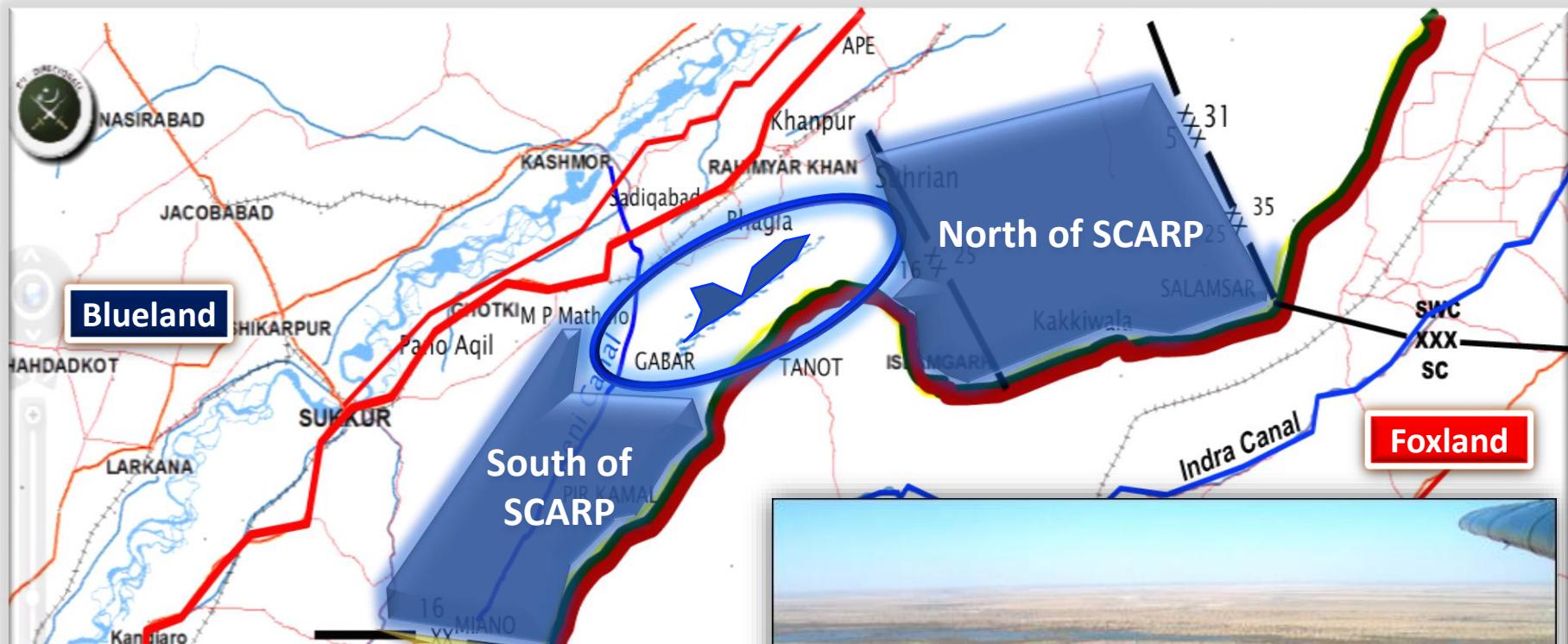


## Orientation - AOR

## Total frontage 1200 Kms



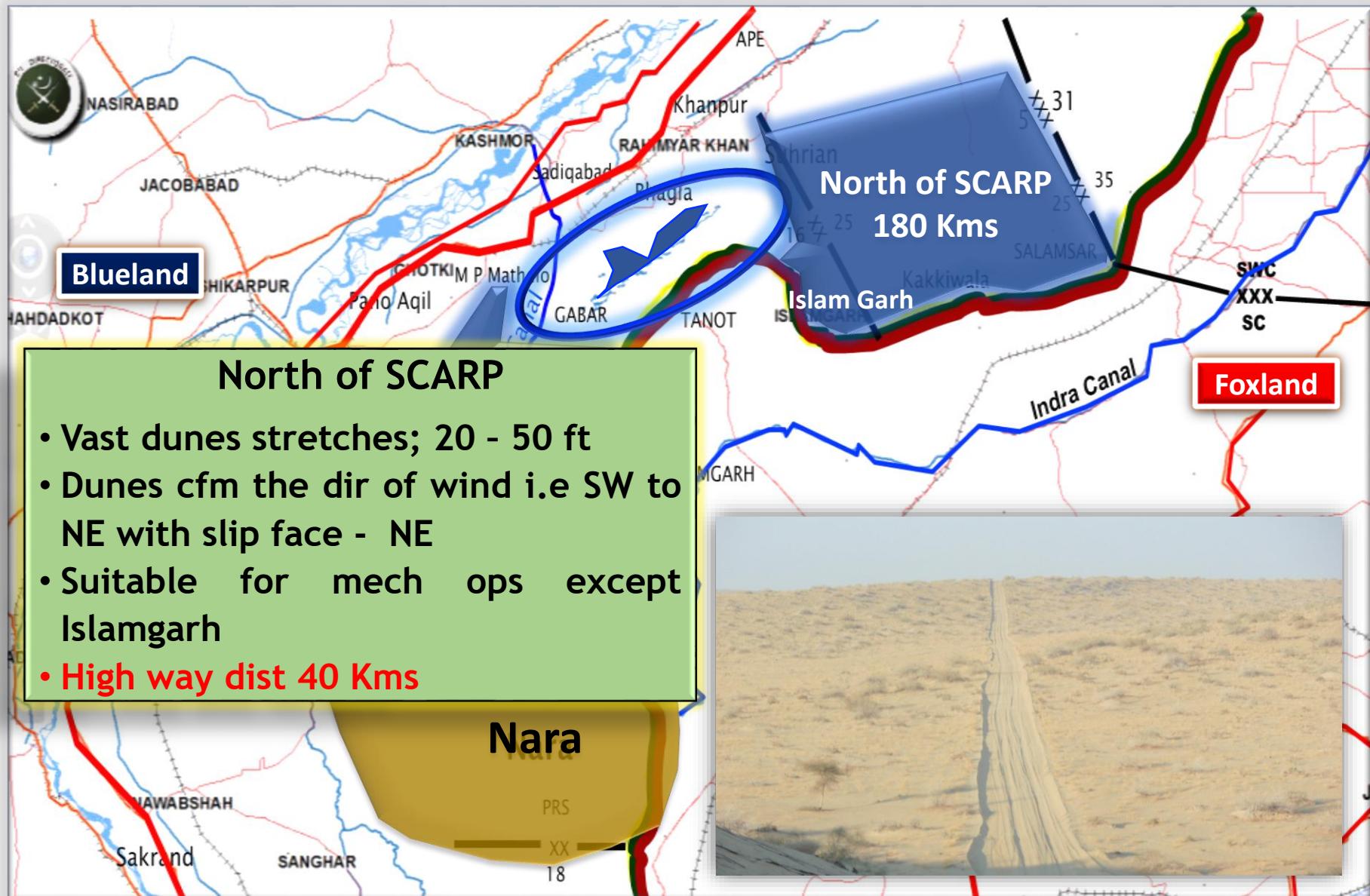
# North of Nara



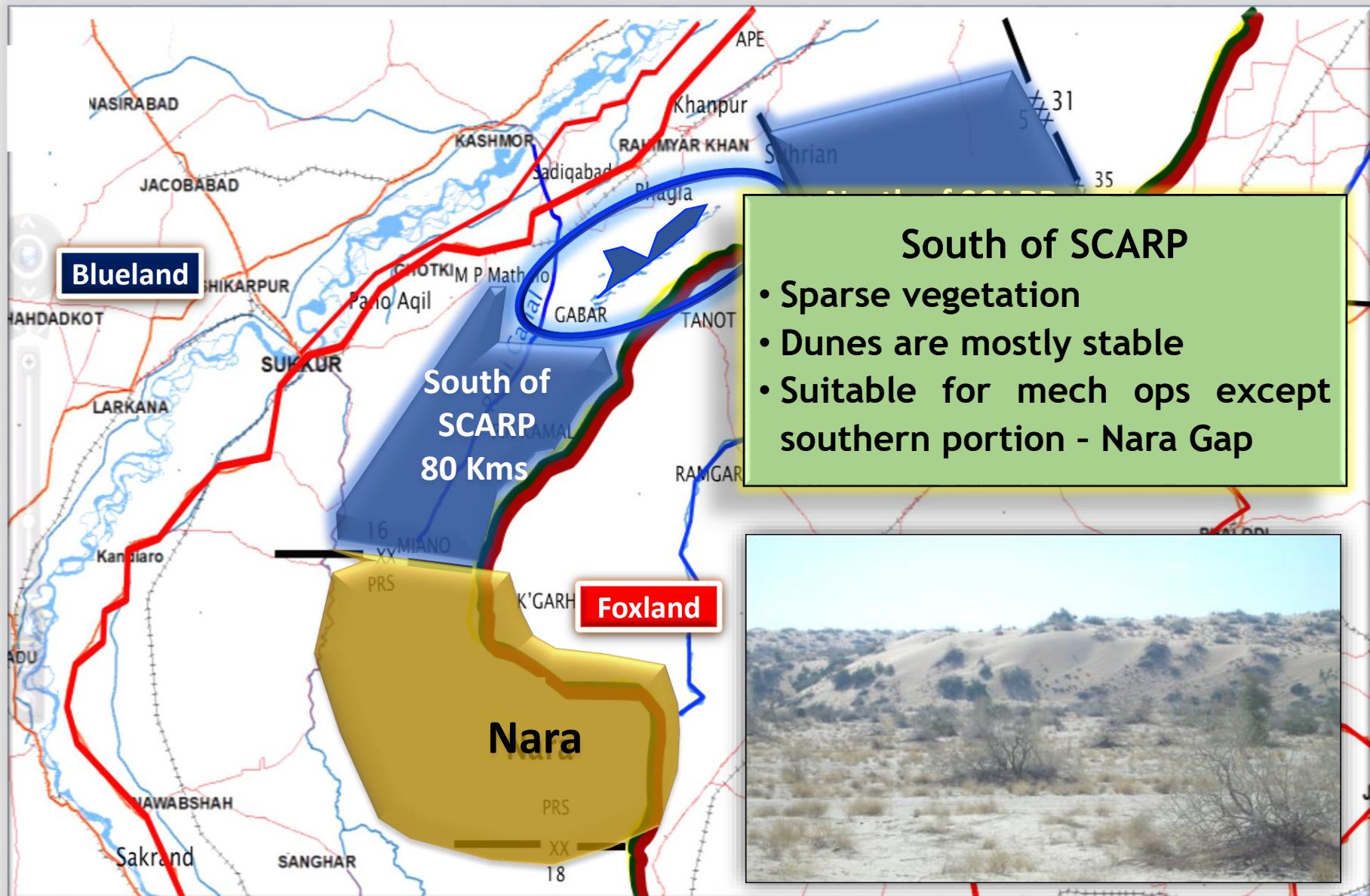
- Frontage – 360 kms
- SCARP divides area in two parts i.e. North & South of SCARP



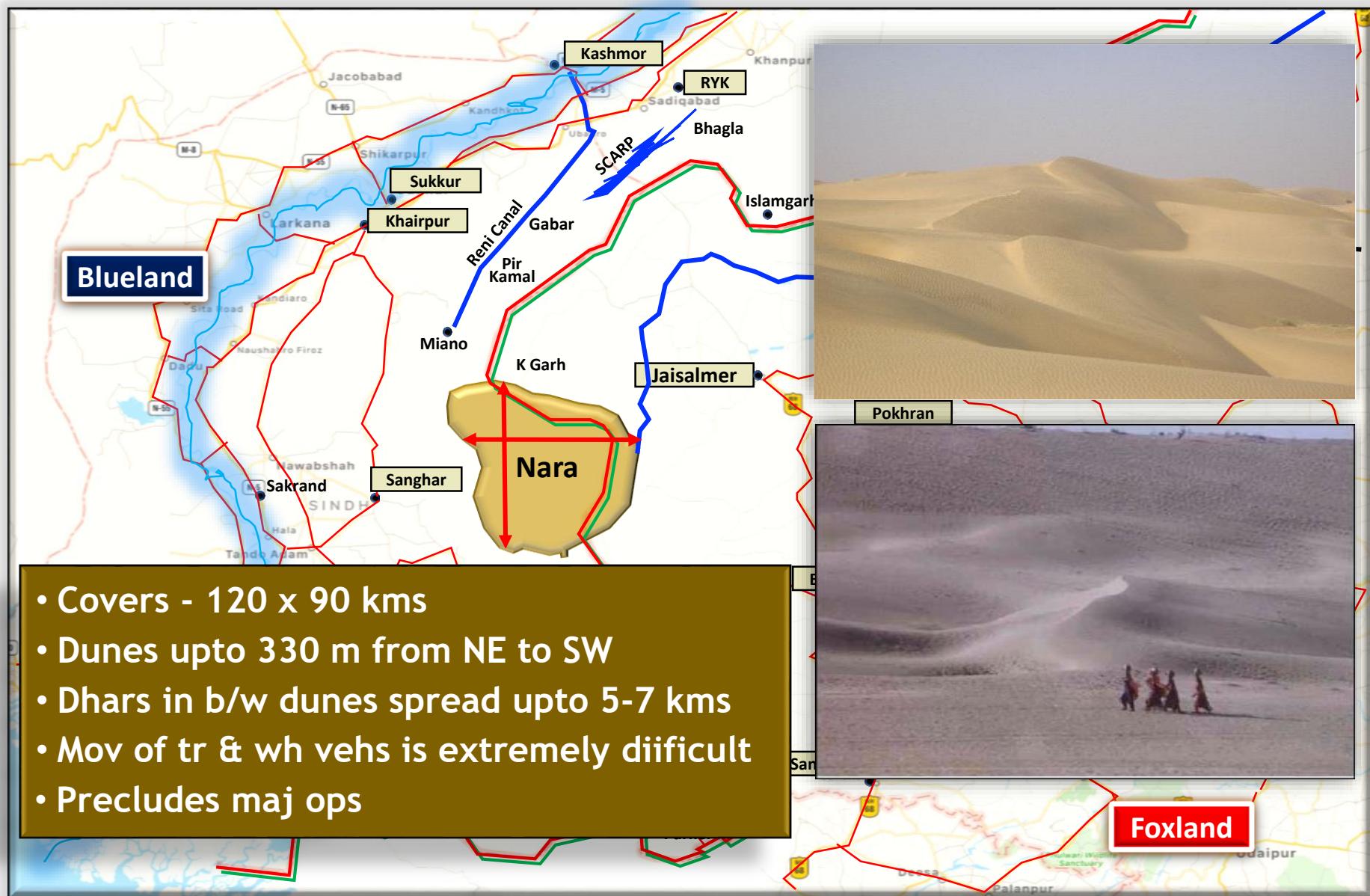
# North of Nara



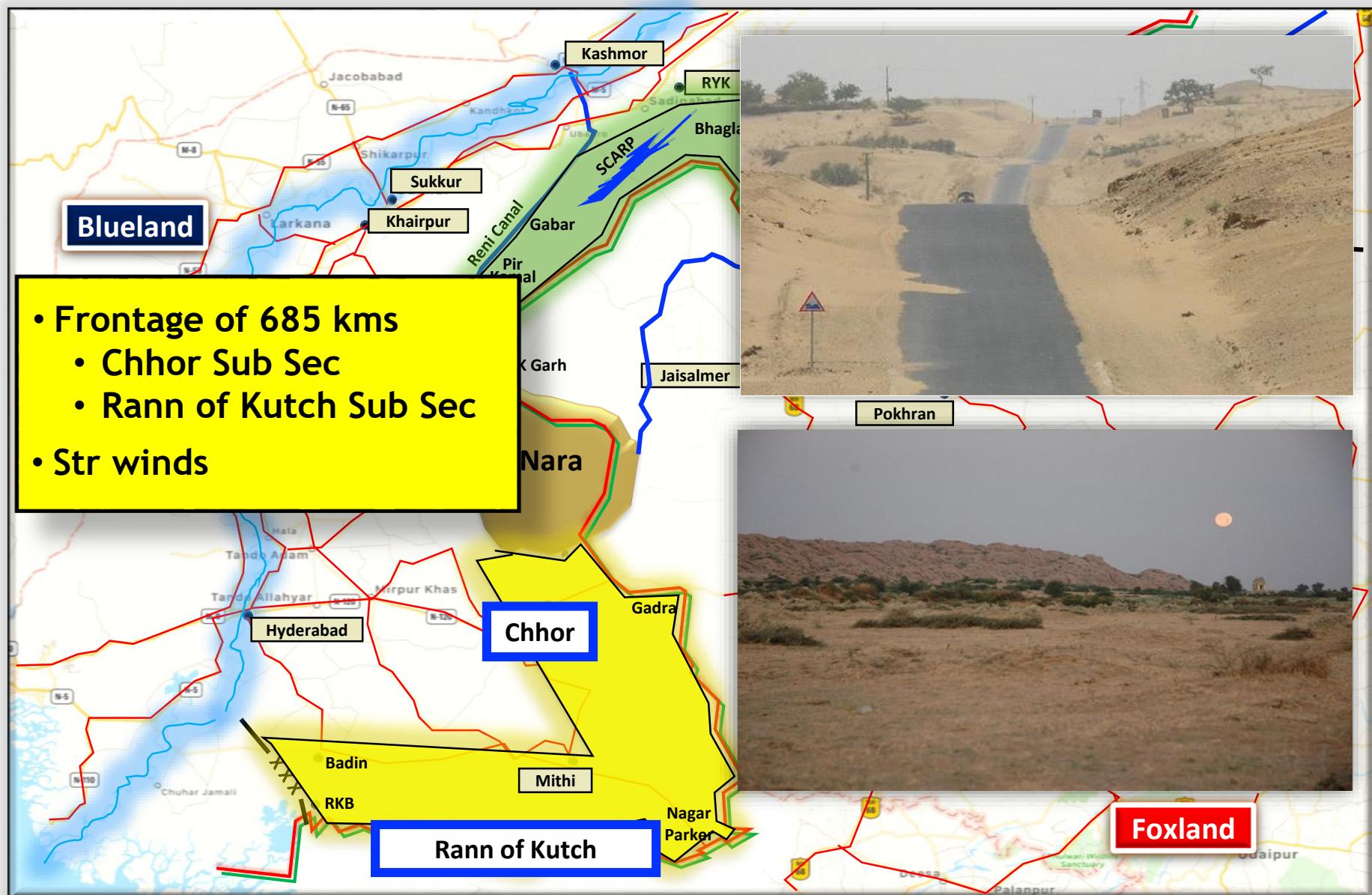
# North of Nara



# Nara



# South of Nara



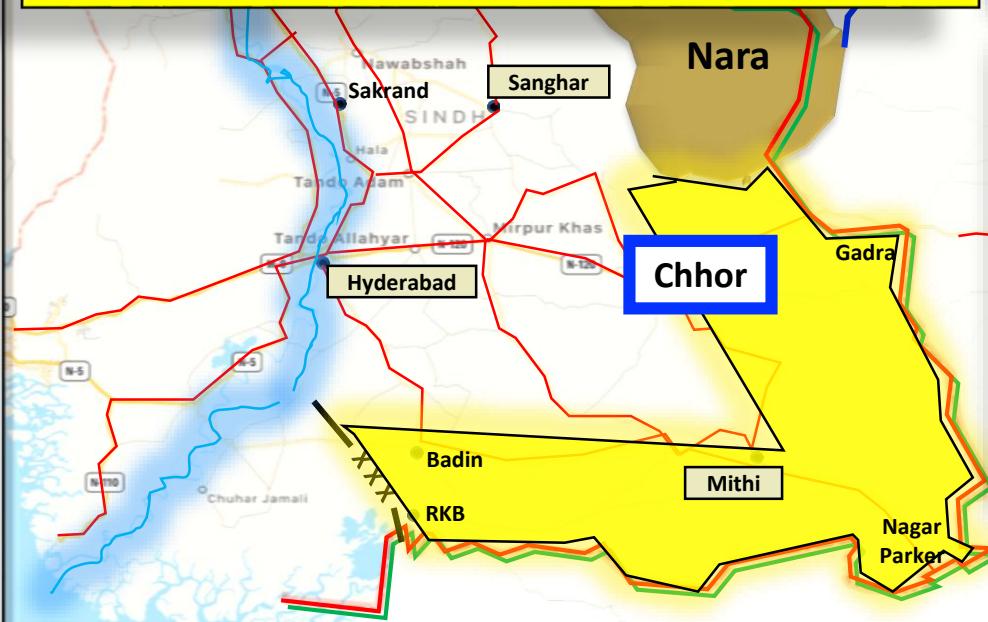
# South of Nara

Kashmor

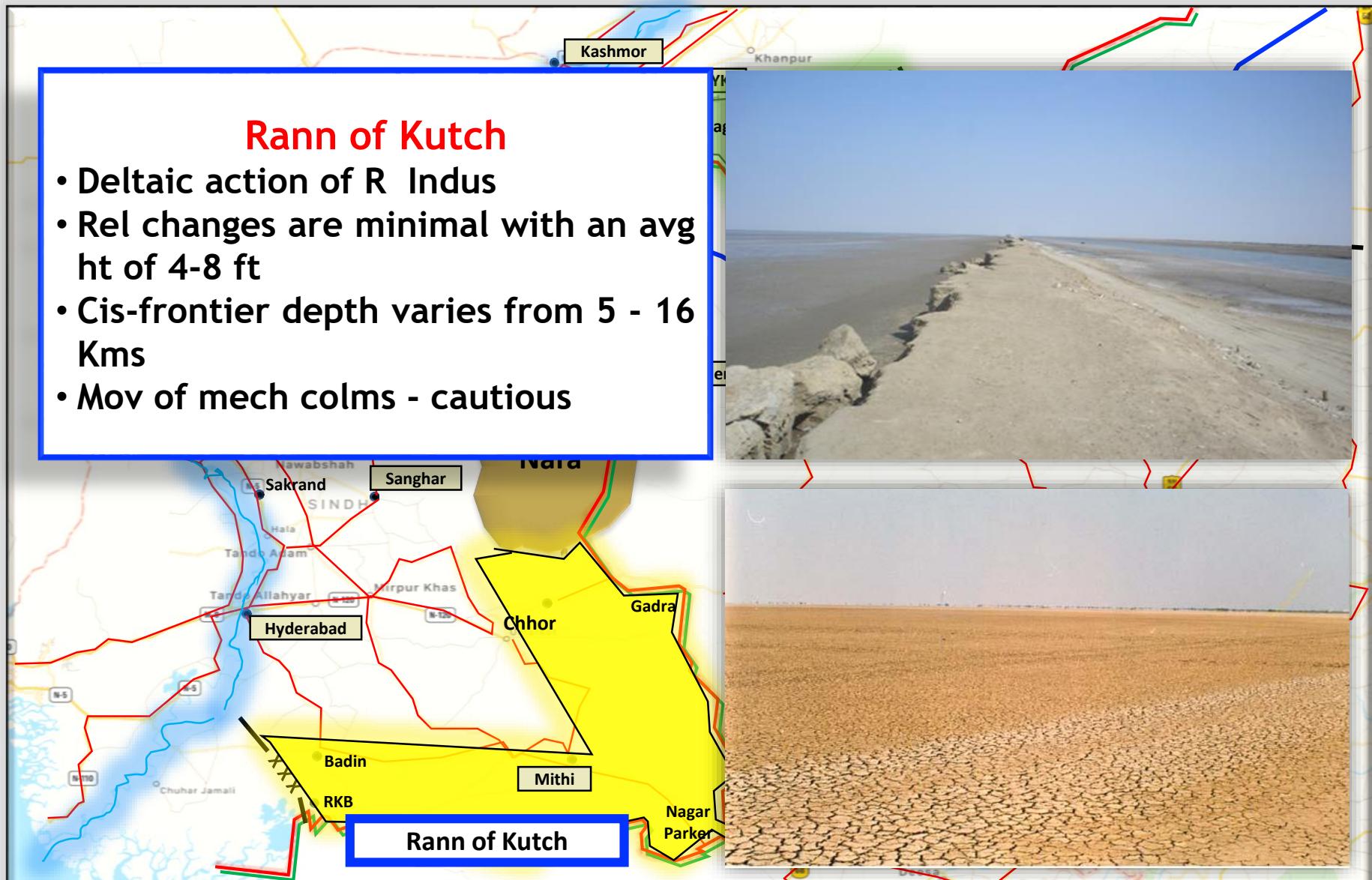
Khanpur

## Chhor Sub Sec

- Thar Desert- arid, desolate & relatively more populated than Cholistan
- Bhits run from SW to NE - 30-200 ft
- Firm dhars - suitable for mech ops
- Narrow dhars - compartmentation



# South of Nara

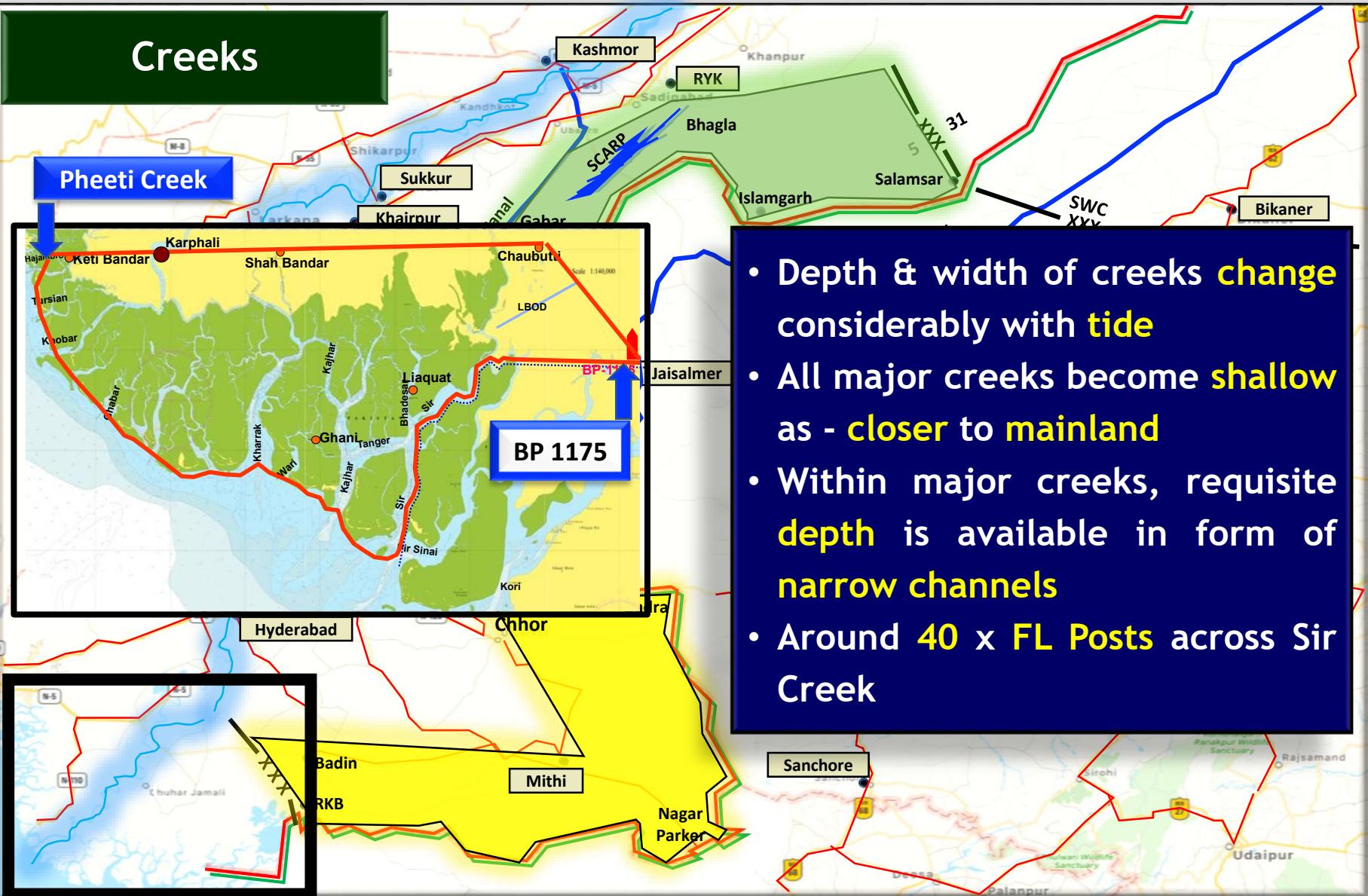


## Rann of Kutch

- Deltaic action of R Indus
- Rel changes are minimal with an avg ht of 4-8 ft
- Cis-frontier depth varies from 5 - 16 Kms
- Mov of mech colms - cautious

# South of Nara

## Creeks



# Salients

**Kishan Garh (54x24 kms)**  
With its base at Ramgarh, this salient provides an ideal JOP against RYK

**Islam Garh (48 x 18 kms)**

- Salient juts into base of Ramgarh Salient from N
- Places BL in posn of adv - threatens Kishangarh Salient and FL base of op against RYK

**KKP (58x20 kms)**  
In Chhor sec - reduces distance to Green Belt

**Shah Garh (82x38 kms)**

- Bulges into Nara Gap
- Extremely difficult

**Nagar Parker(50x25)**

- Loc in the extreme SE
- Due to its distance & difficulty in access, it imposes caution

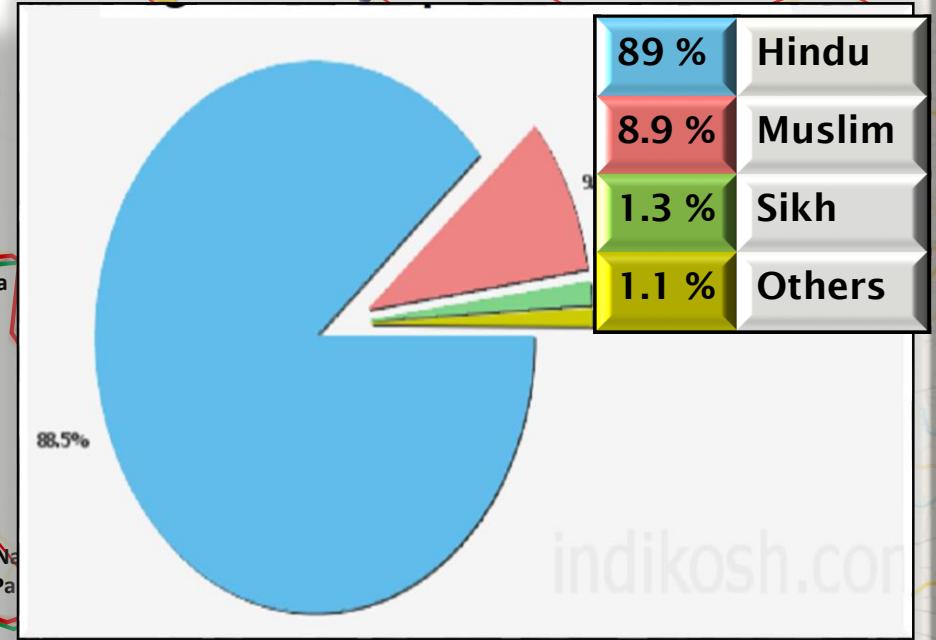
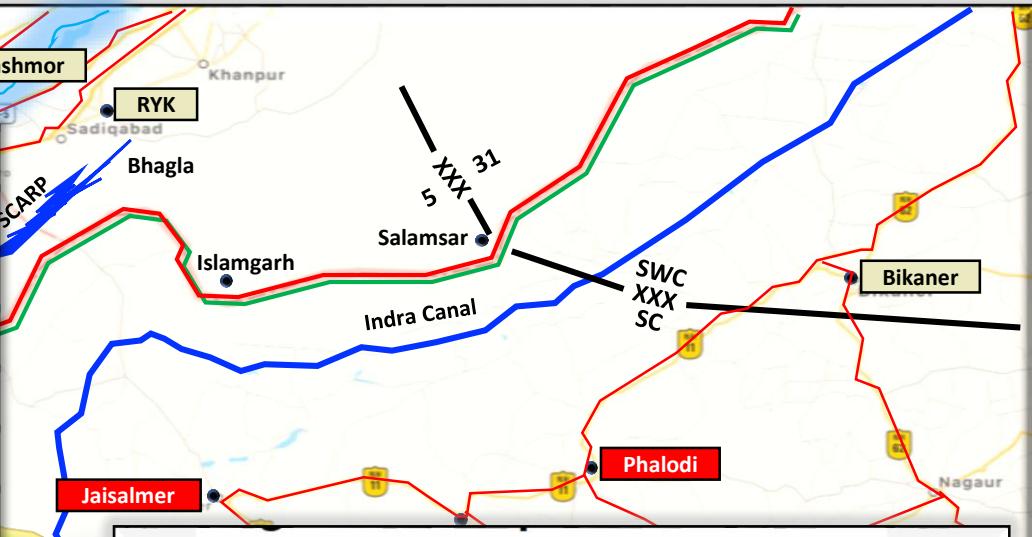
**Gadra (45x25 kms)**

- Dominates & dir threatens en L of C to KKP Salient
- No offn can be dev by the en on KKP axis

# Psycho -Social & Eco Significance

## DEMOGRAPHY

MPK	Muslims	51.27 %
Mithi	Hindu	39.33 %
Badin	Muslims	59 %
Thar Parker	Hindu	23 %
Sanghar	Muslims	68 %
	Hindu	32 %
	Muslims	59 %
	Hindu	41 %
	Muslims	79 %
	Hindu	19 %



Terrain Analysis

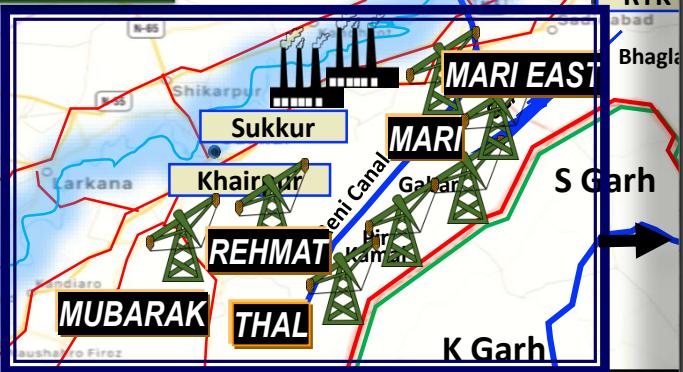
War Hist

Maj Concls

FL SC Re-loc

# Socio - Eco Potential

## HYDROCARBONS

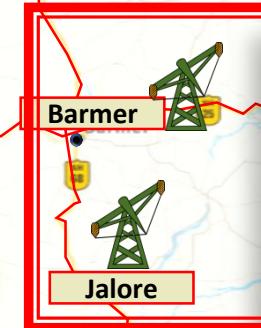


- 15 % of national gas res; within 0 - 25 kms from IB
- Pak's 2<sup>nd</sup> largest gas & 40% of national res within 25 - 60 km
- Pak's 3<sup>rd</sup> largest gas res (Qadirpur) falls within 60-90 km
- 65 % Cty fertilizer

## Thar Coal

- 175 Bn tons res
- Capacity - 100,000 MW

Granite - 15864 Mn Tons

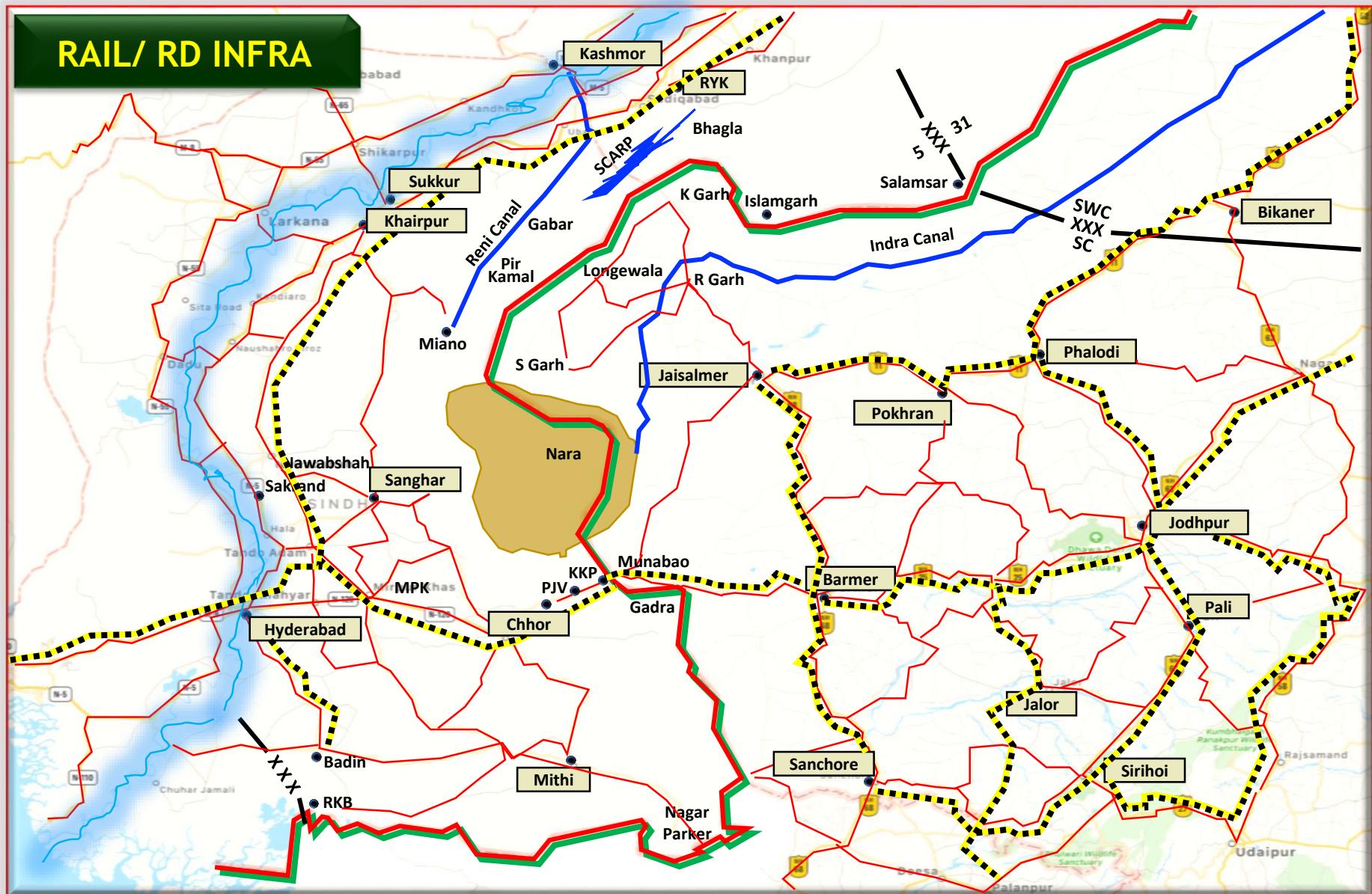


Rajasthan - out of 150,000 sq km only 30,000 sq km under exploration till date

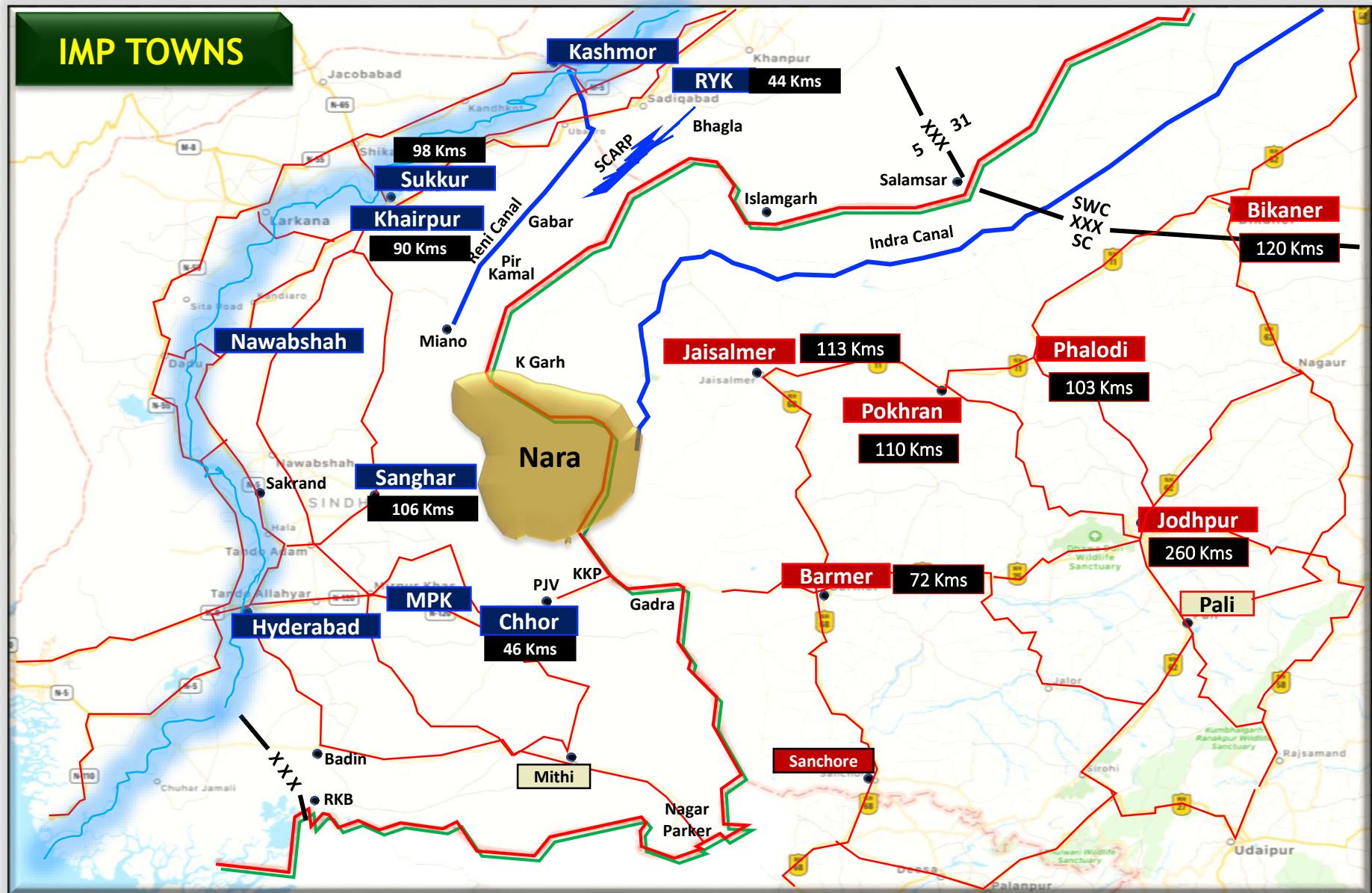
Sources:  
Business Week - India & OGDCL - Pakistan

# Comm Infra

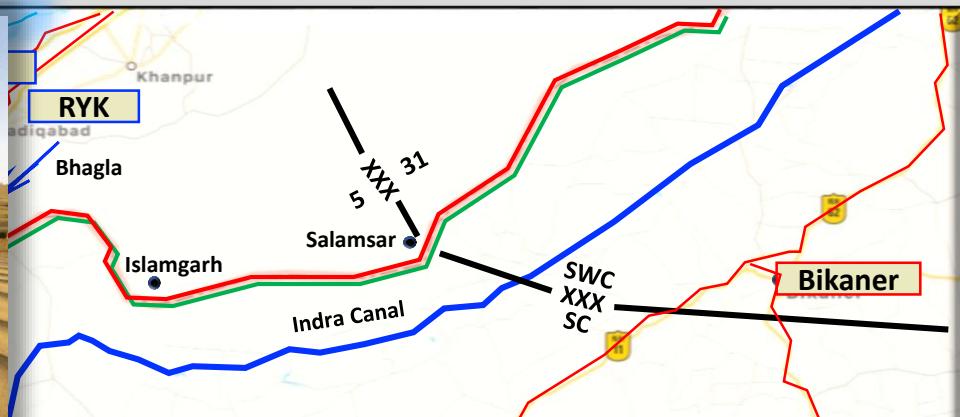
## RAIL/ RD INFRA



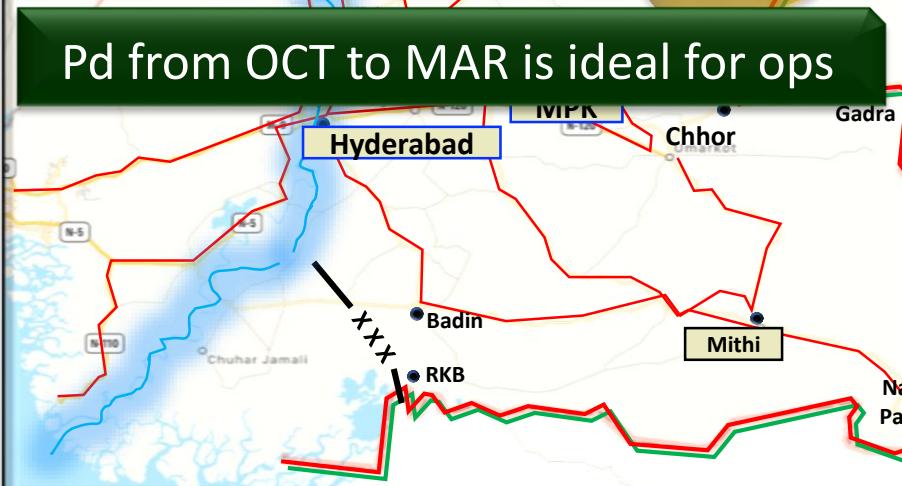
# Socio - Eco Significance



# Climate



Temp		
Sec	Summers (Apr – Oct)	Winters (Nov – Mar)
Green belt	28 – 50 C	6 – 13 C
Desert Belt	33 – 53 C	6 – 28 C
Winds		
Green belt	SW to NE	Effs Vis
Desert Belt		
Precipitation		
Green belt	120 – 150 mm Annual	
Desert belt	100- 235 mm Annual	



Terrain Analysis

War Hist

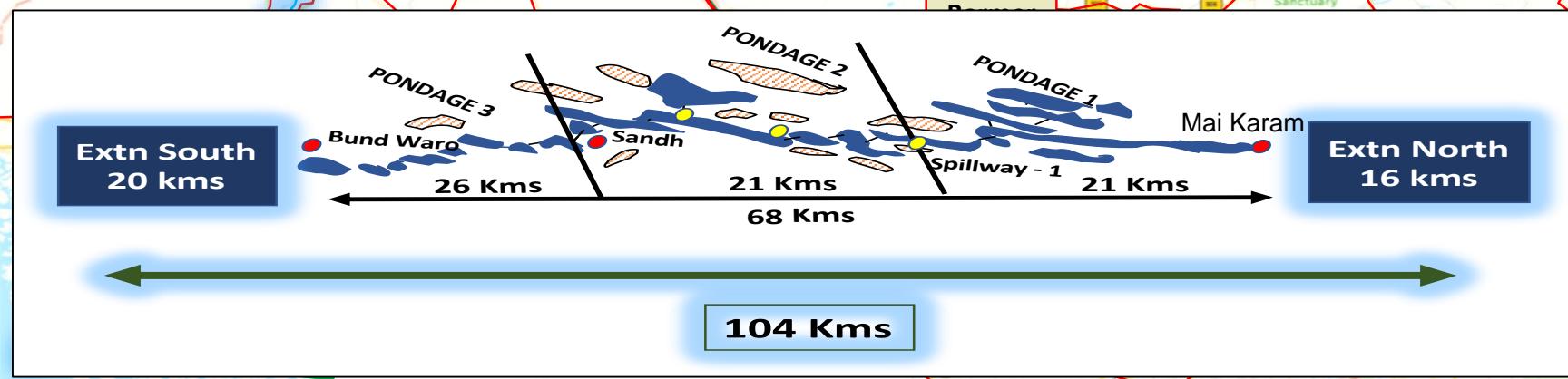
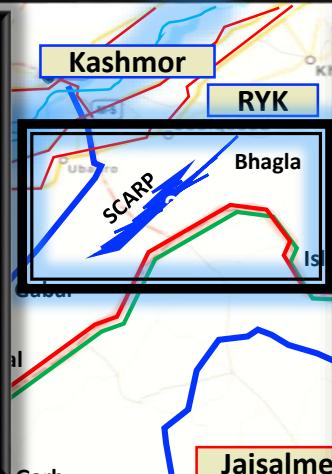
Maj Concls

FL SC Re-loc

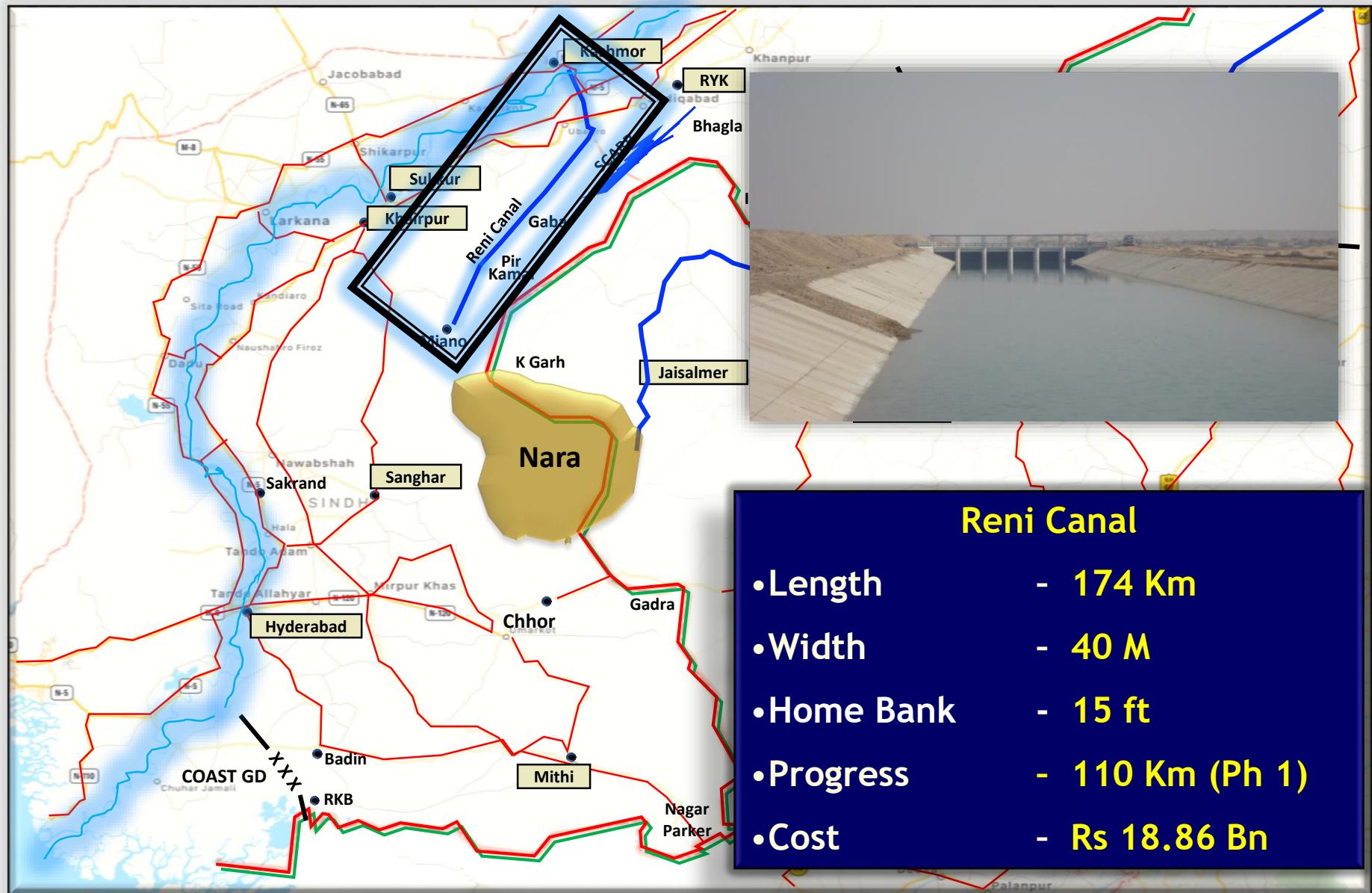
# Obs

## SCARP VI

- Commenced in 1981 - WB
- Frontage - 104 KMs
- Width 0.3 - 5 kms
- Depth 3 - 18 Ft
- Handed over - 1992
- Complete Obs



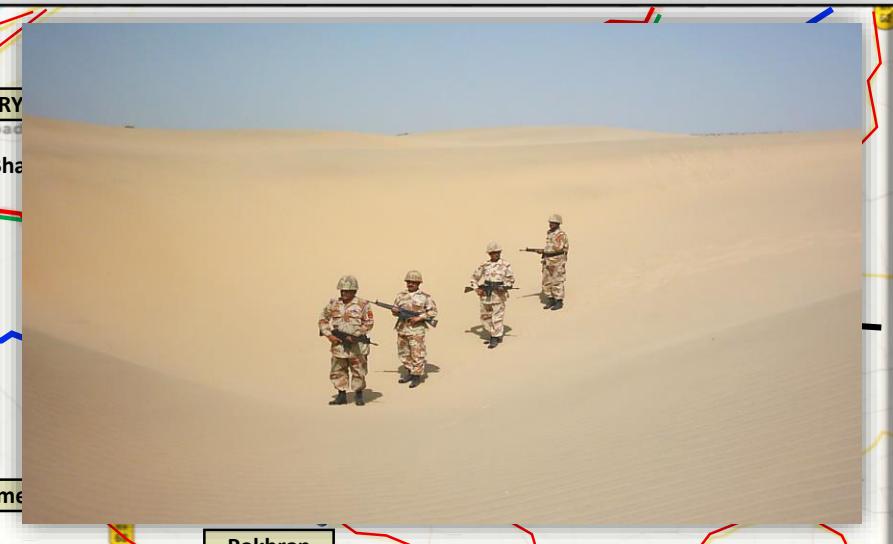
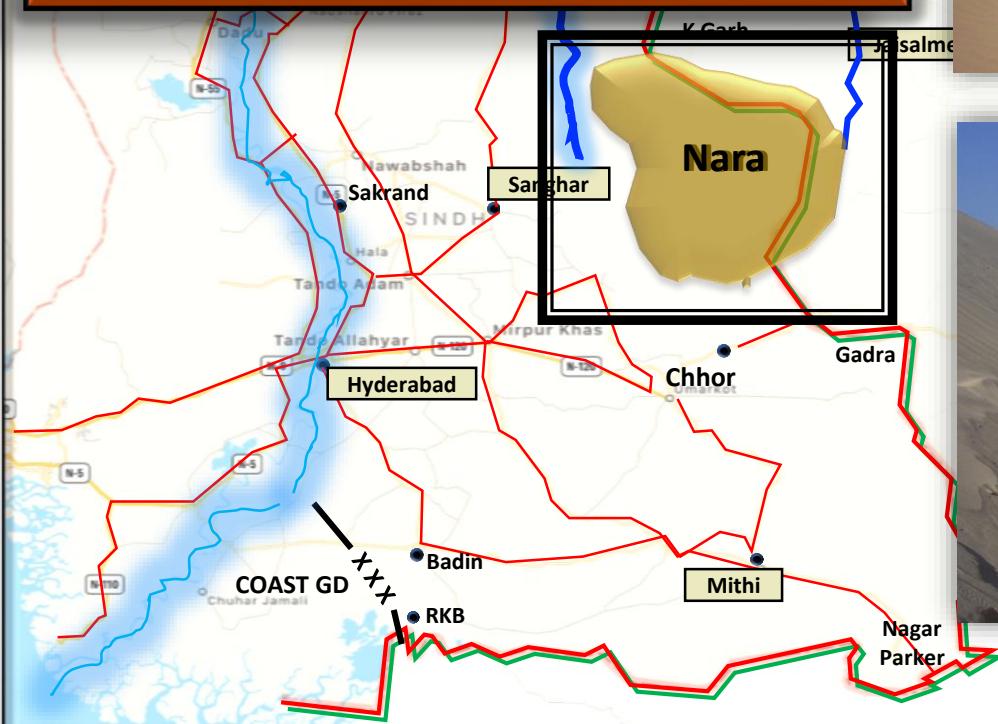
# Obs



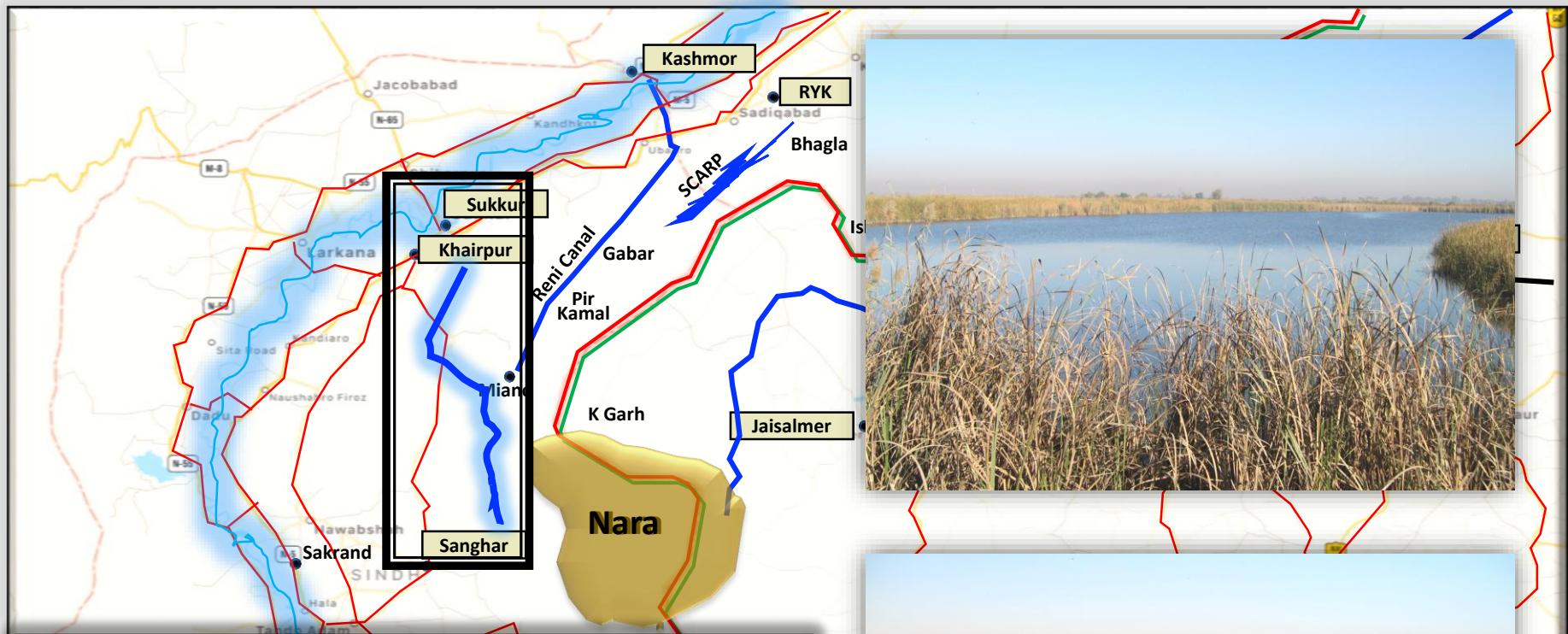
# Obs

## NARA Gap

- Cont of Cholistan & Thar
- Area - 120 x 90 Kms
- Shifting sand dunes varying in ht b/w 50 - 330 ft
- Loose sand - slow go



# Obs

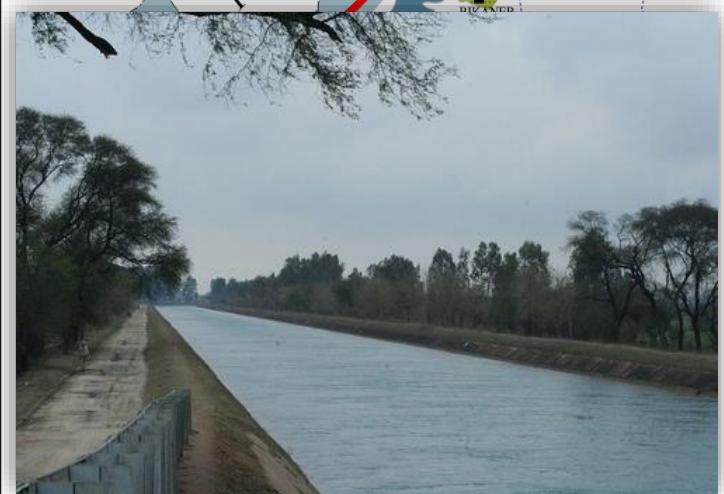
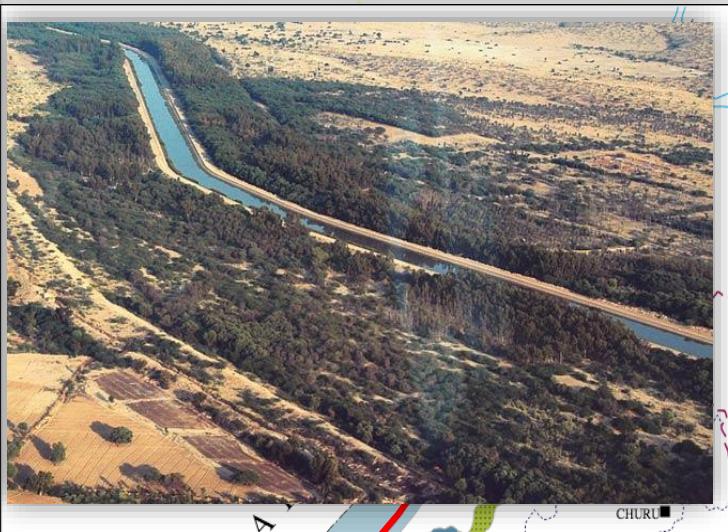


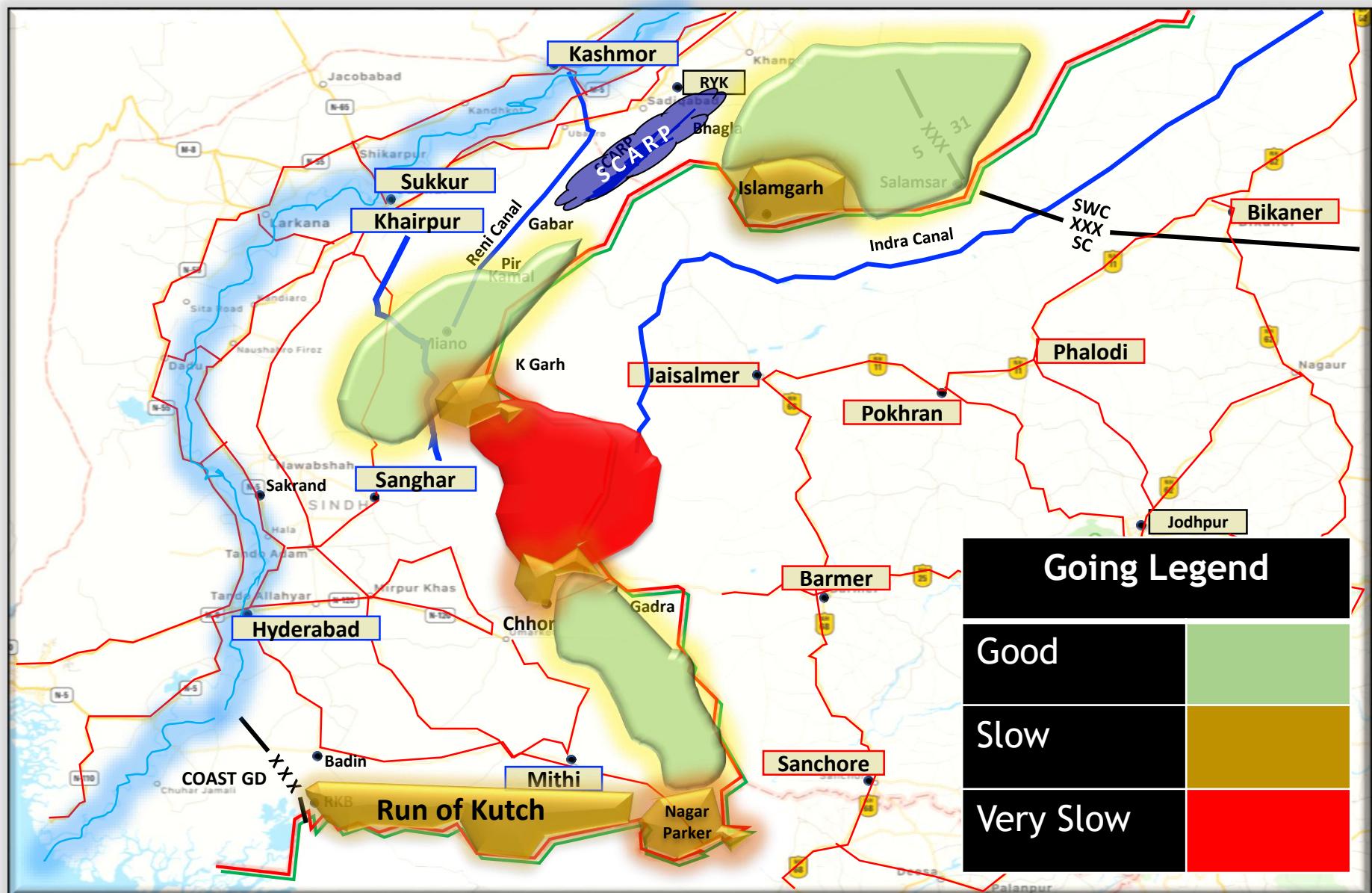
## Nara Canal

- Length **364 Kms**
- Feeder canal / **Sukkur Barrage**
- Area 20 kms east of Nara Canal - **littered with Saline lakes**
- 2-6 kms in length; 300-700 ms wide
- Complete obs



# Obs

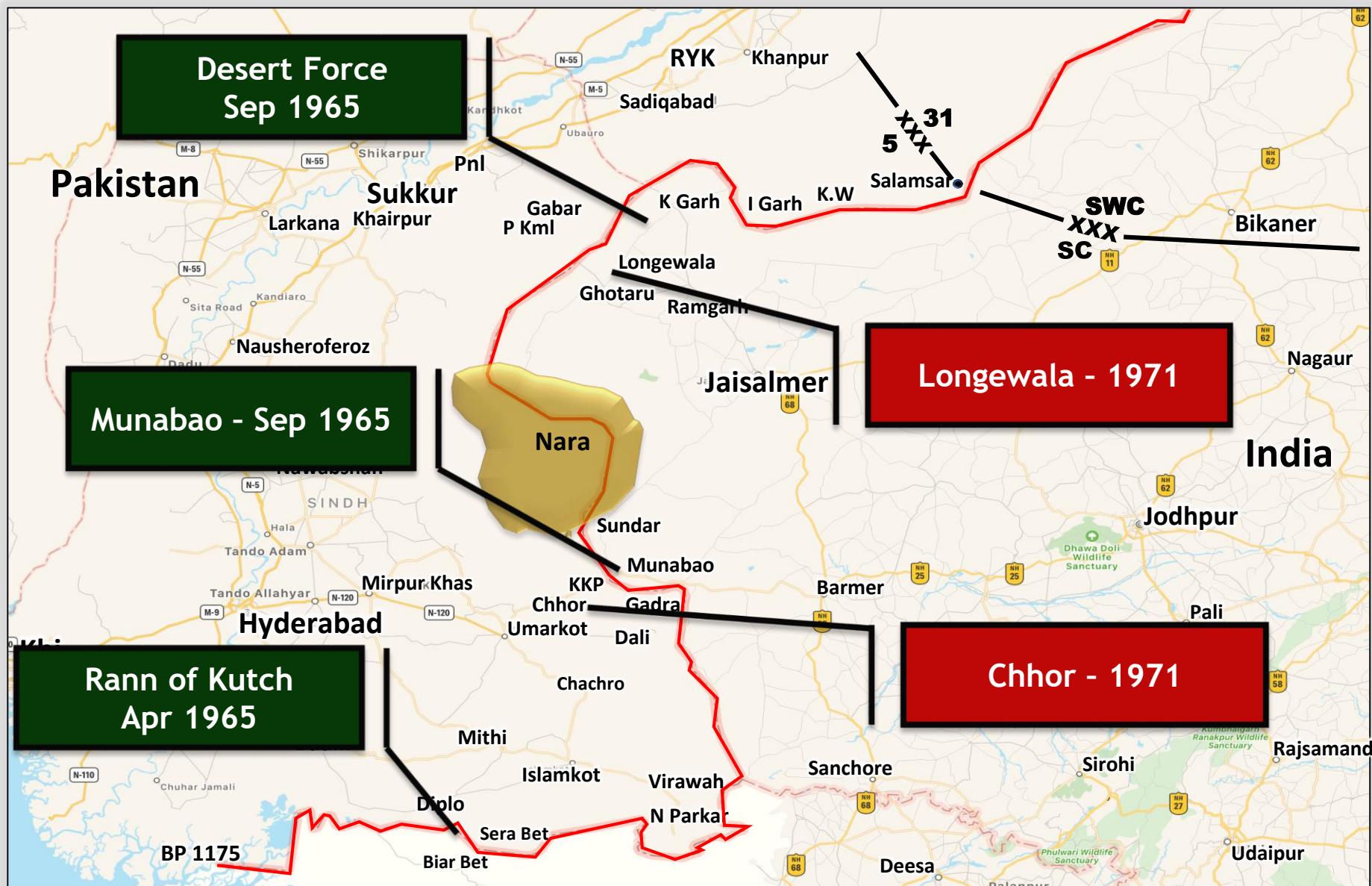




## PART - II

# War Hist

# War Hist



# Rann of Kutch - Apr 1965



# Rann of Kutch - Apr 1965

PAKISTAN

24

Runn of kutch

Kuchchh



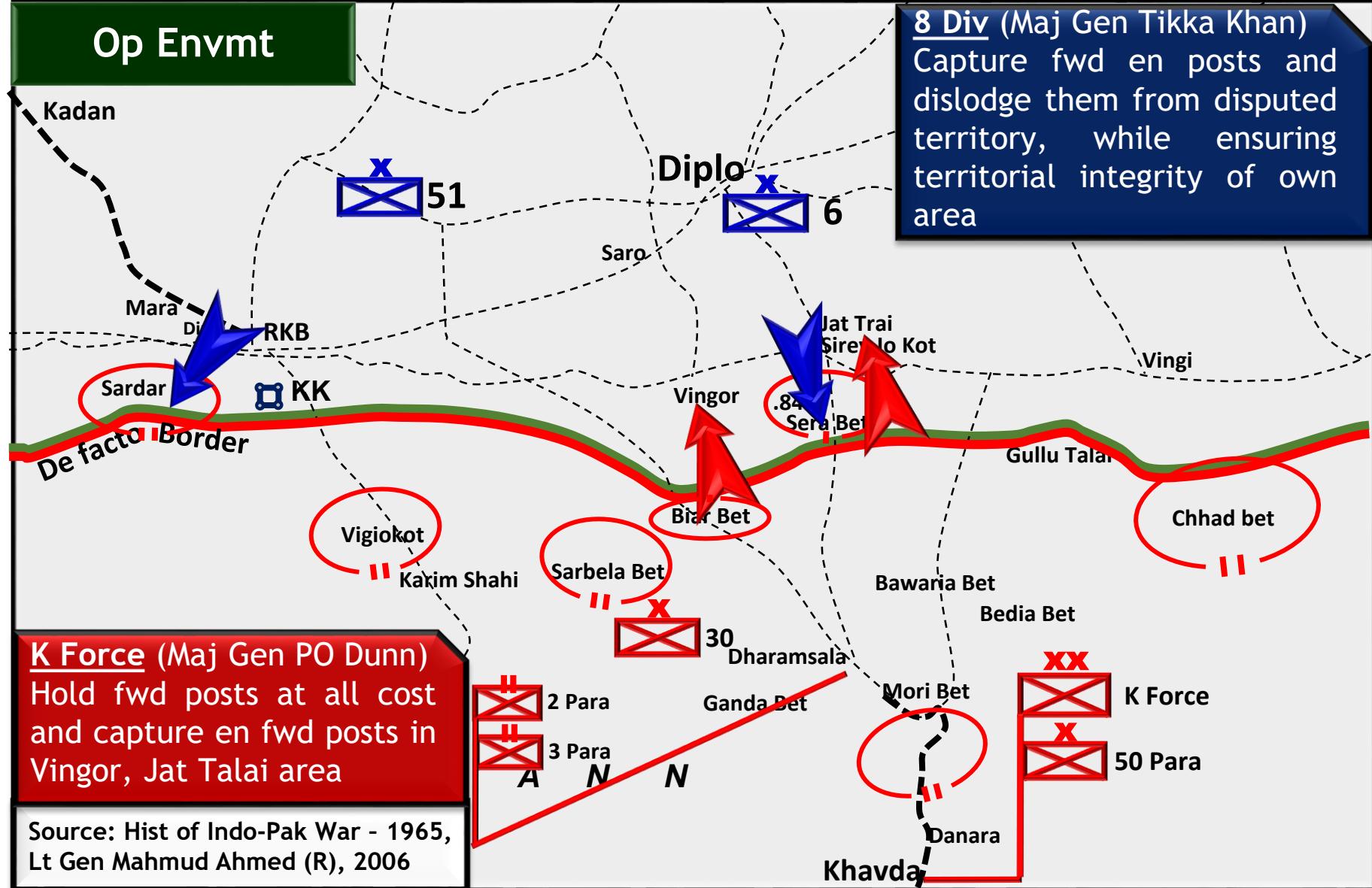
- Lies at 24<sup>th</sup> Parallel in SE of Pakistan
- Disputed territory - long before partition
- Northern 3500 sq miles of Great Rann was disputed b/w Pakistan and India



Source: Frontier of Pakistan, Mujtaba Rizvi, 1971

# Rann of Kutch - Apr 1965

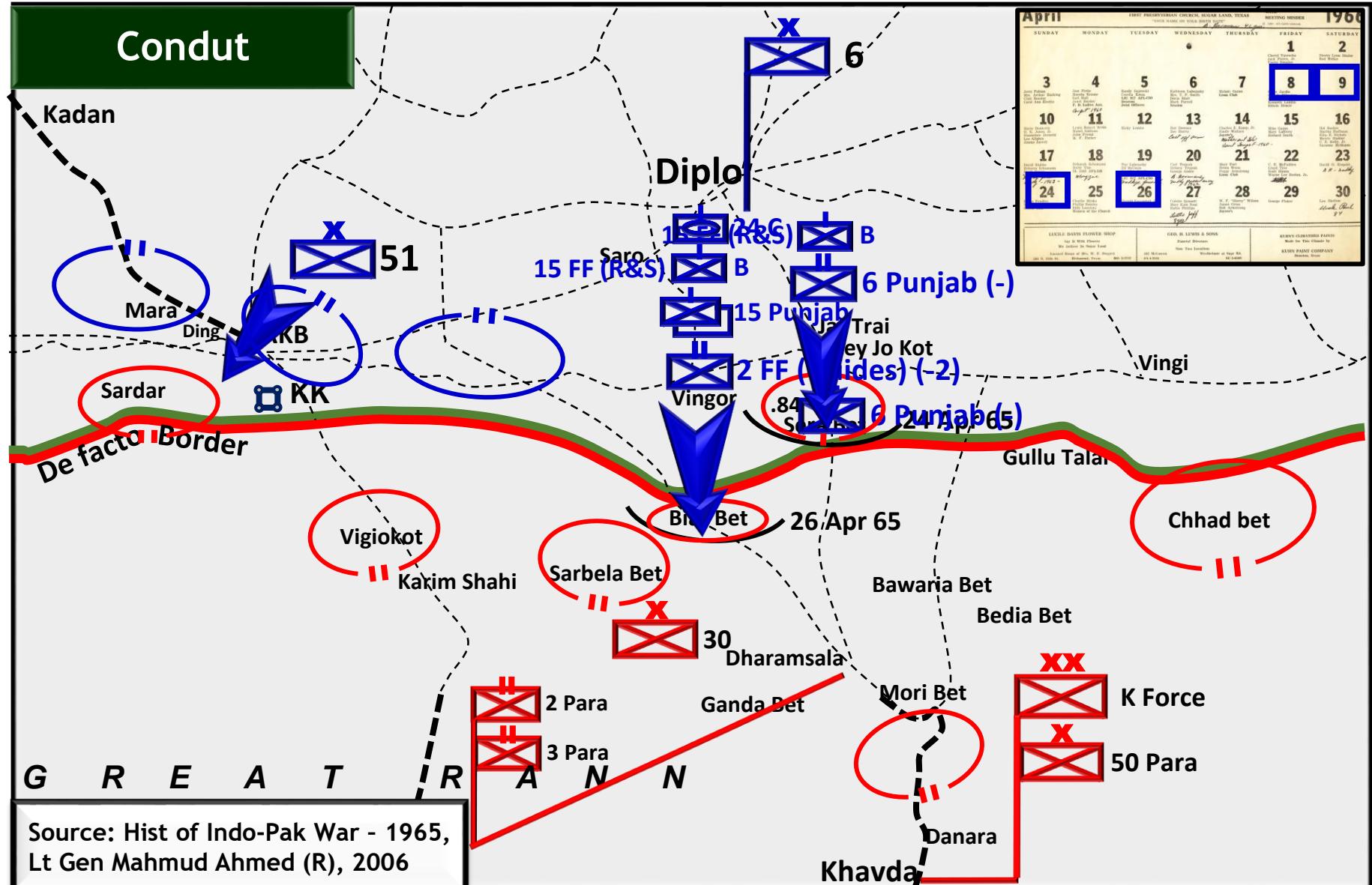
Op Envmt



# Rann of Kutch - Apr 1965

89

# Conduit



**Source: Hist of Indo-Pak War - 1965,  
Lt Gen Mahmud Ahmed (R), 2006**

# Terrain Analysis

## War Hist

## Maj Concls

FL SC Re-loc

# Rann of Kutch - Apr 1965

## Kutch Agreement

Kadan

Arbitral Tribunal - Resoln of dispute

Chairman

Gunnar Lagergren

(President of court of appeal of Sweden)

Pakistani Rep

Nasrollah Entezam (UN Ambassador of Iran)

Indian Rep

Ales Be-er (Judge from Yugoslavia)

350 sq miles incl Chaad Bet & Sardar area

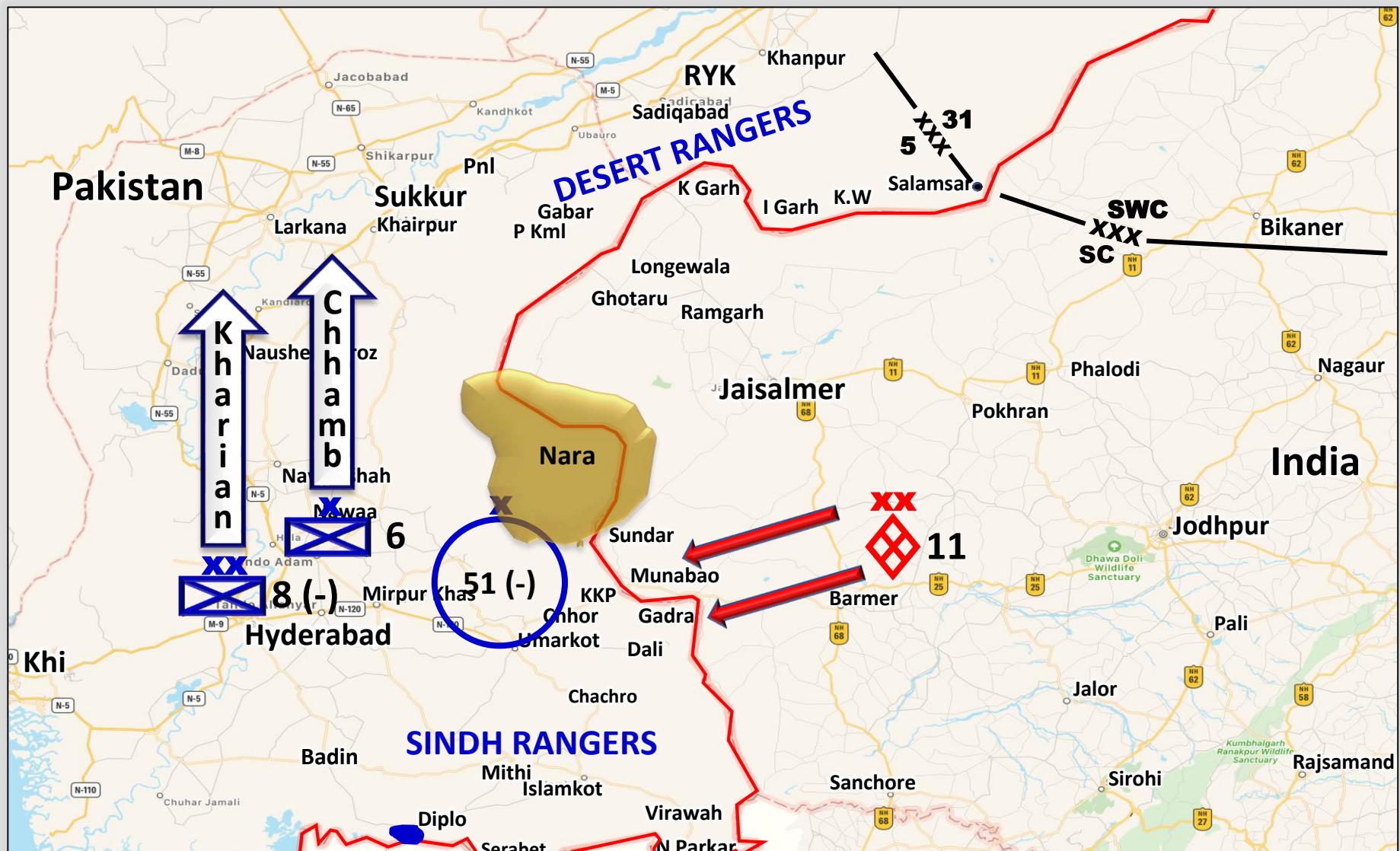
G R E A T / R A N N

Source: Hist of Indo-Pak War - 1965,  
Lt Gen Mahmud Ahmed (R), 2006

Danara  
Khavda

# Chhor Sec - 1965

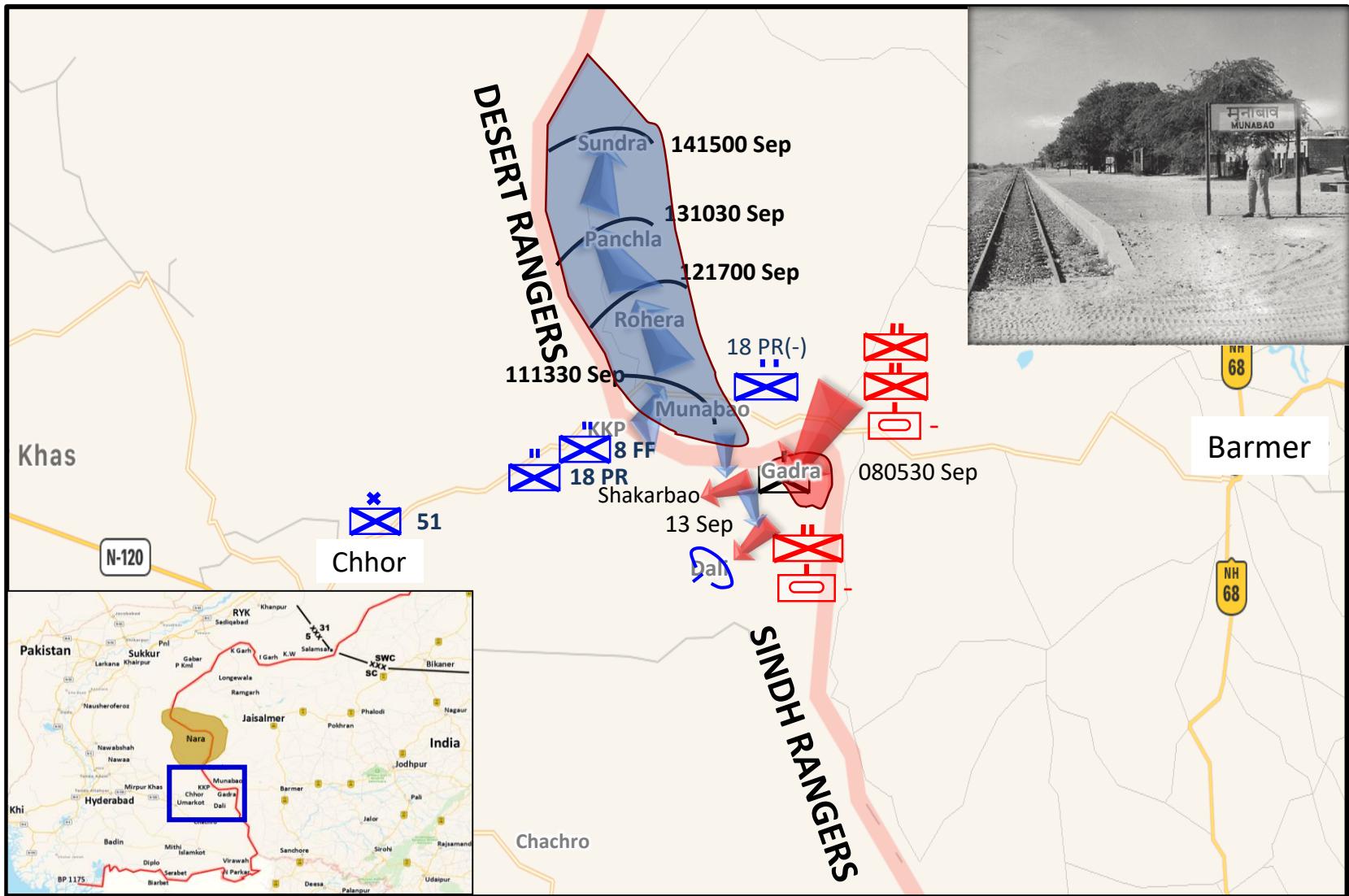
# Chhor Sec - 1965



Source: Lt Gen K M Azhar Khan (R) (Comd 51 Bde in 1965 War) interview to PTV aval on Youtube

# Chhor Sec - 1965

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Source: Hist of Indo-Pak War - 1965, Lt Gen Mahmud Ahmed (R), 2006

Terrain Analysis

War Hist

Maj Concls

FL SC Re-loc

# Raiders of the Desert - 1965

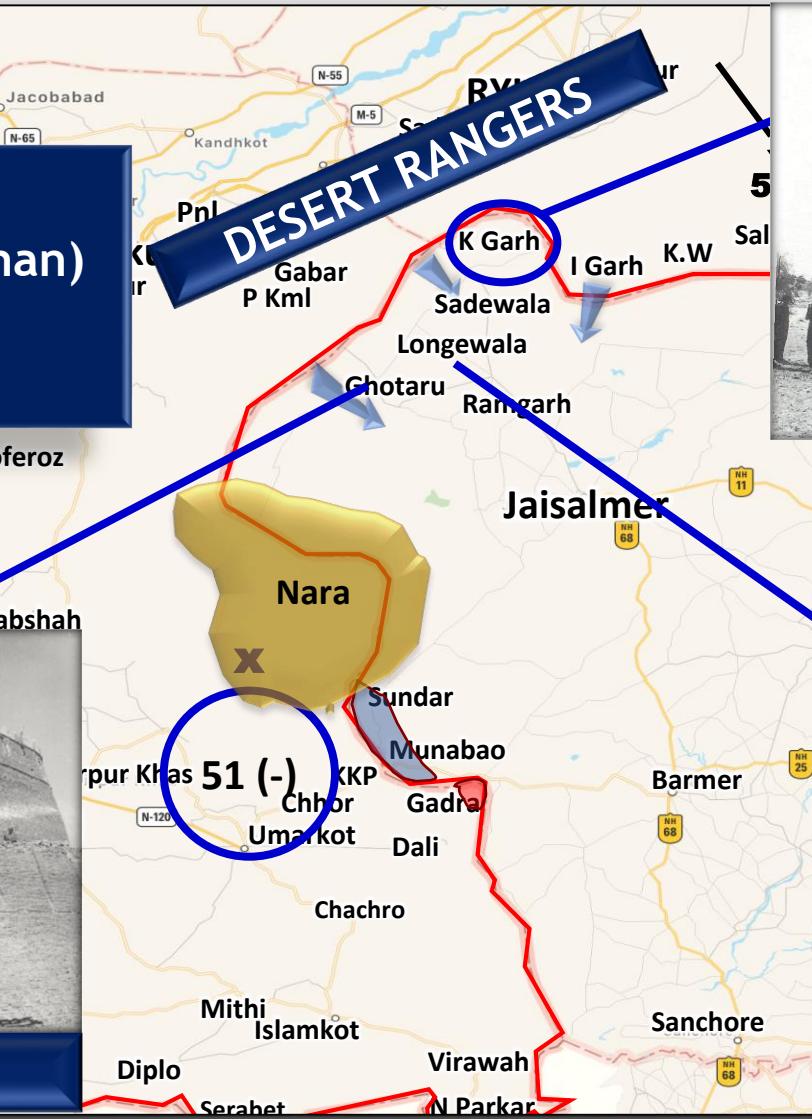
## Desert Force

Pak Rangers West  
 (Brig Khudadad Khan)  
 Hur Hordes and  
 Rangers

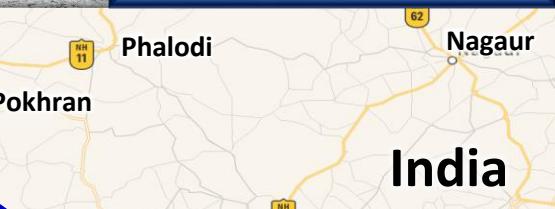


Ghotaru Fort

DESERT RANGERS



Kishangarh Fort



India

Longewala Post

Source: ISPR, Indo-Pak War-1965 A Flashback

# 1971 War

# 1971 War

Op Envmt

Treaty of friendship b/w USSR & India

Stoppage of US Mil Aid

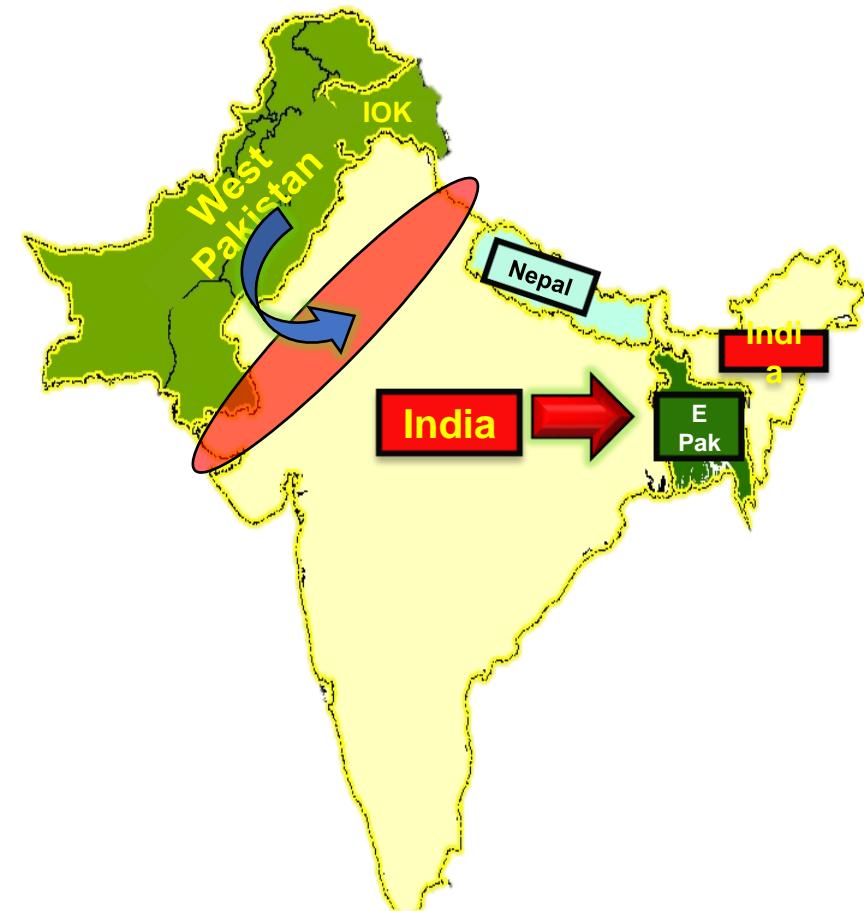
Indian inc arms procurement

Estb of 3 x new Corps by India

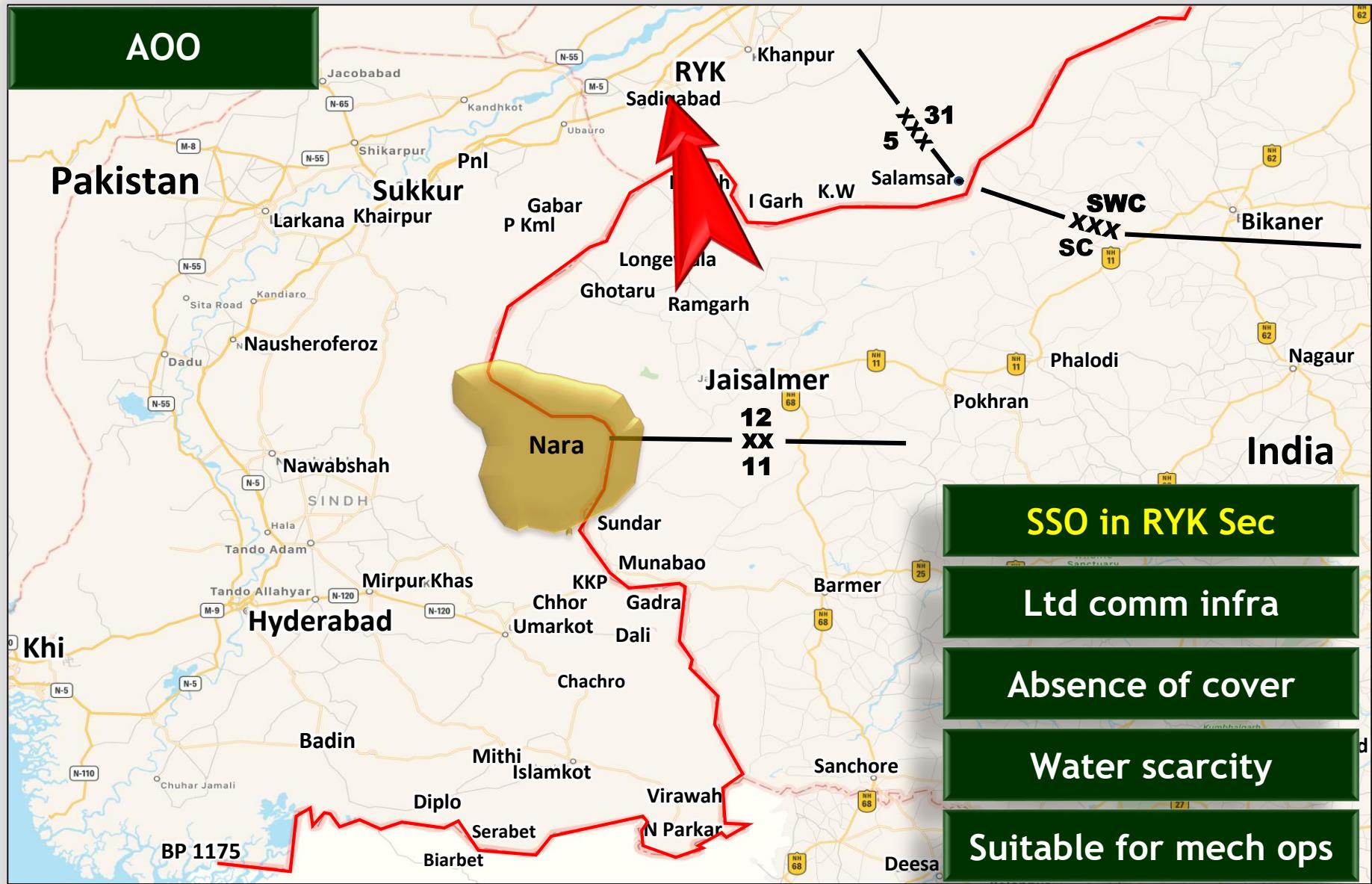
Main thrust - Eastern theatre

Intl opinion tilted in favour of India

Own Concept of Ops - territorial integrity while capturing max sensitive Indian territory



# 1971 War



# 1971 War

## Opposing Forces

### 18 Div (Maj Gen B.M Mustafa)

- 51 Brigade (Brig Tariq Mir)
- 206 Brigade (Brig Jahanzeb Arbab)
- 55 Bde (Brig Anwar ul Haq)
- 8 Division Arty (Brig S.M. Aslam)
  - 2 x Fd Regts
  - 1 x Med Regt
  - 2 x Mor Btys
- 18 Division Troops (2 x ARs)

### SC (Lt Gen Gopal Gurunath Bewoor)

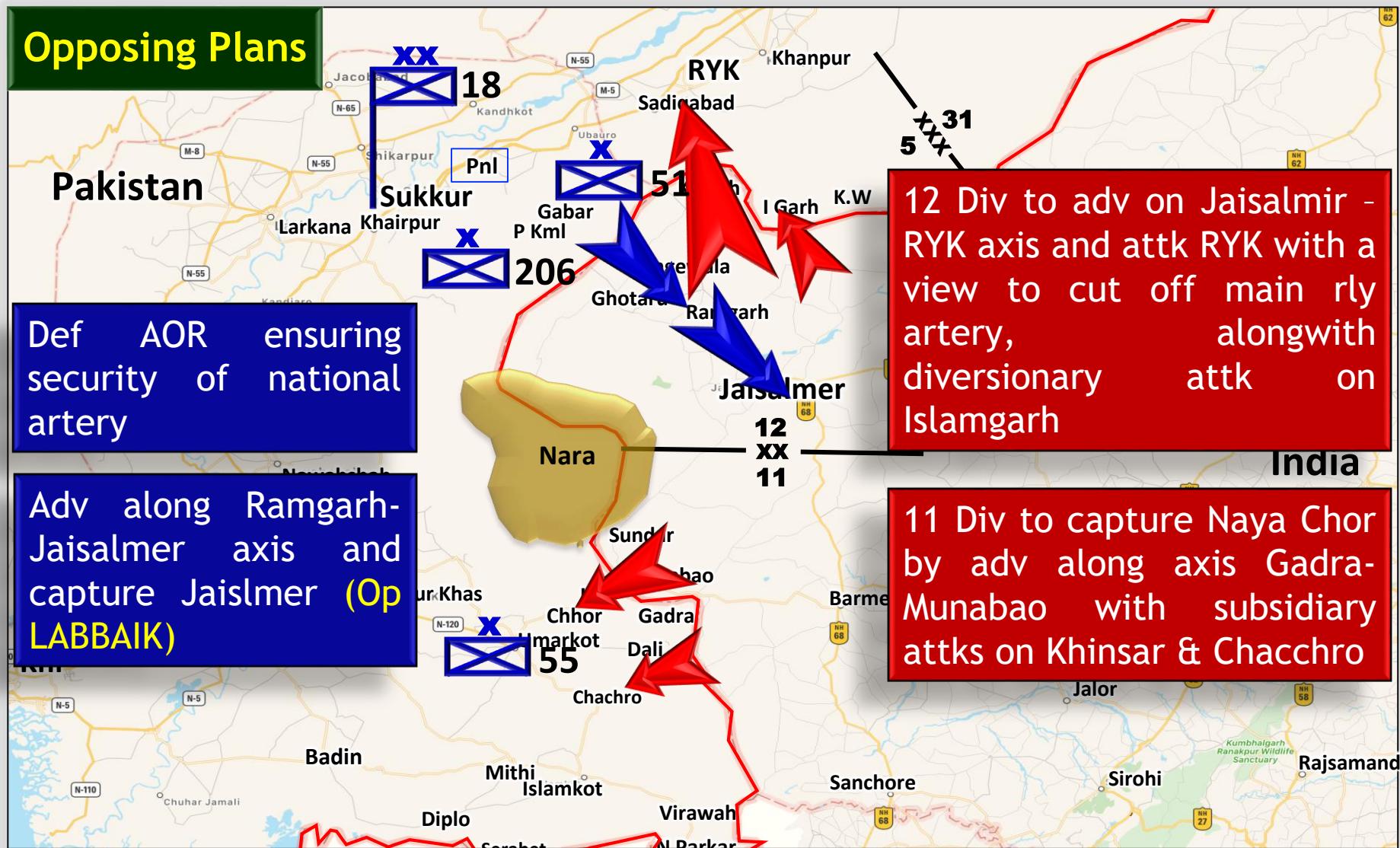
- 11 ID (Maj Gen R.D.R Anand)
- 12 ID (Maj. Gen. K. C. Khambhatta)
- 12 x BSF Bns
- 1 Para Cdo Bn
- Future
  - 54 ID
  - 54 IAB

## Opposing Forces

Type	En	Own	Ratio
Inf	7	3	2.3:1
Armr	4	2	2:1
Arty	3	1	3:1

# 1971 War

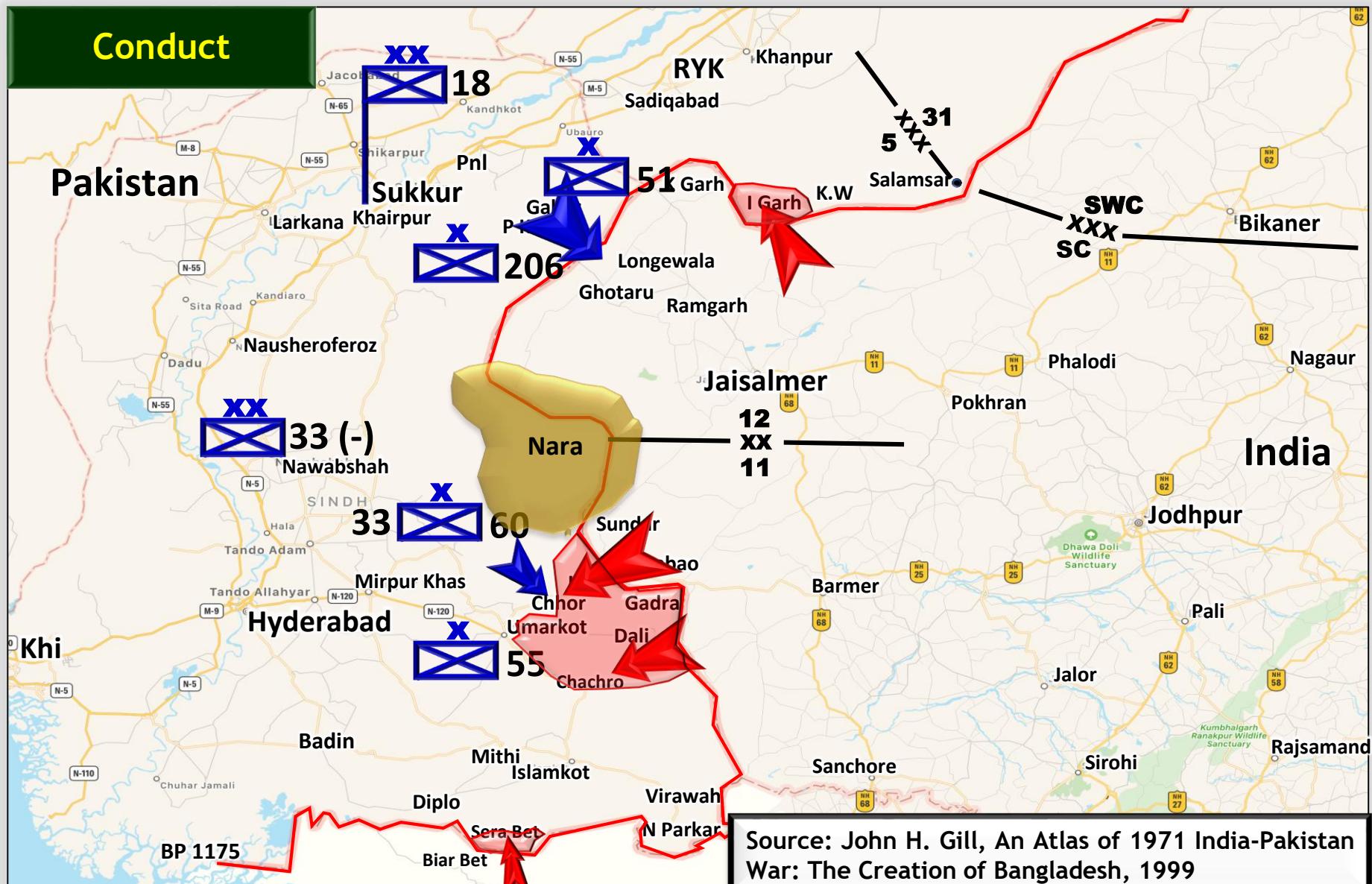
## Opposing Plans



Source: Maj Gen Z C Bakshi, Article "An Audacious Plan"

# 1971 War

Conduct



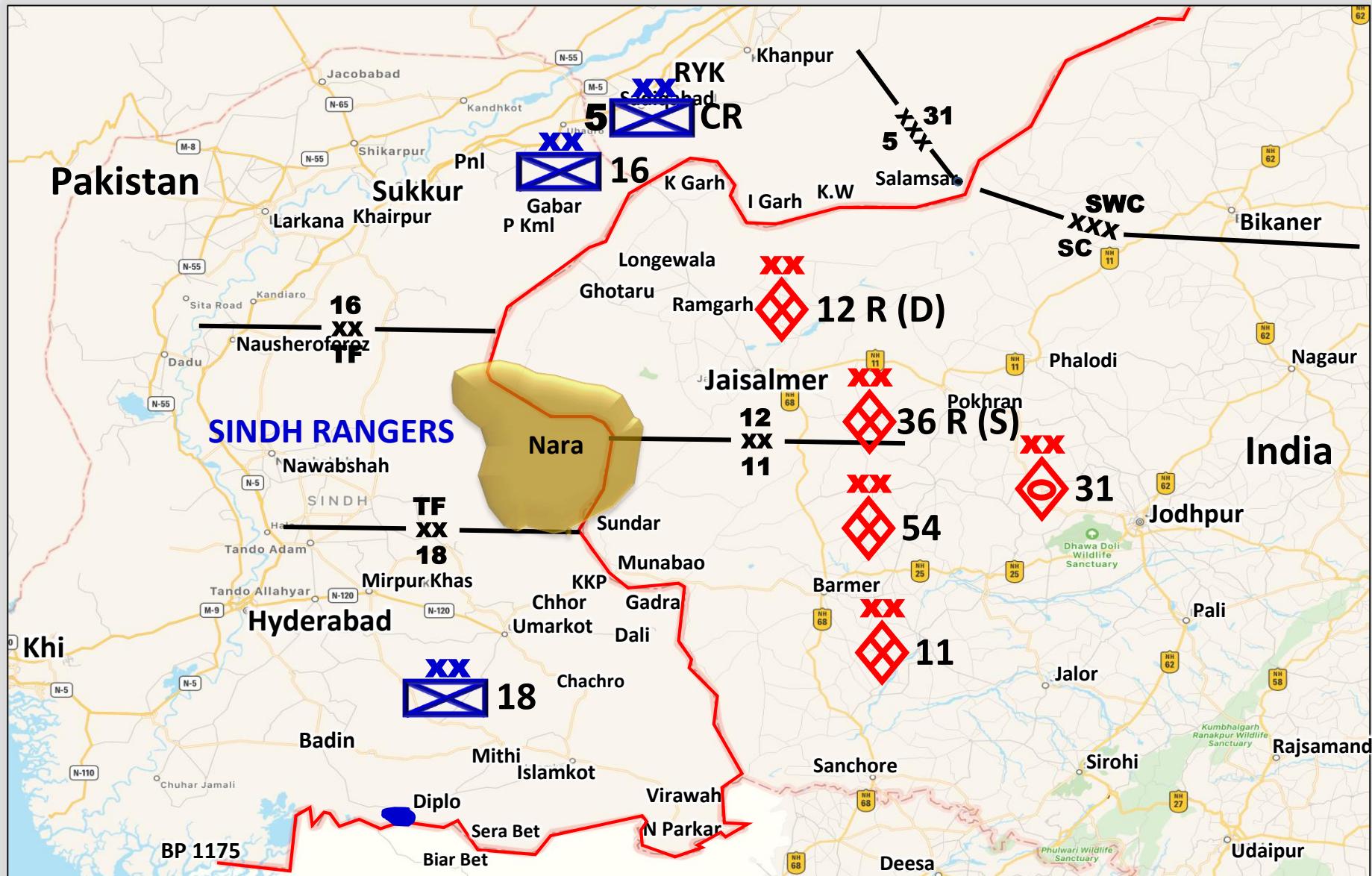
Terrain Analysis

War Hist

Maj Concls

FL SC Re-loc

# Escalation - 2001-02



## PART - III

# Concls from Z of Op

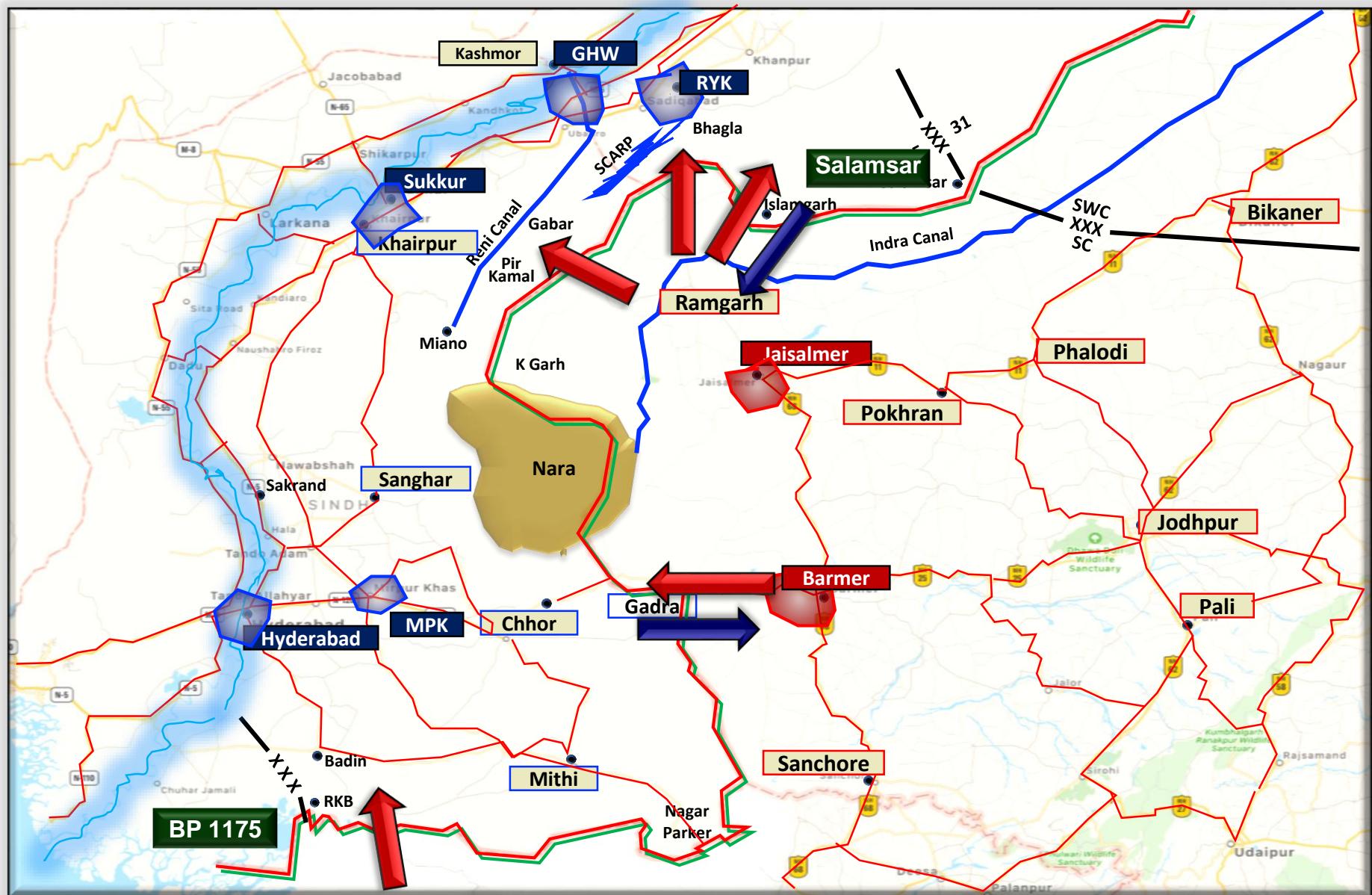
```
graph LR; A[Area of Op] --> B[Historical Context]; B --> C[Concls from Z of Op]
```

Area of Op

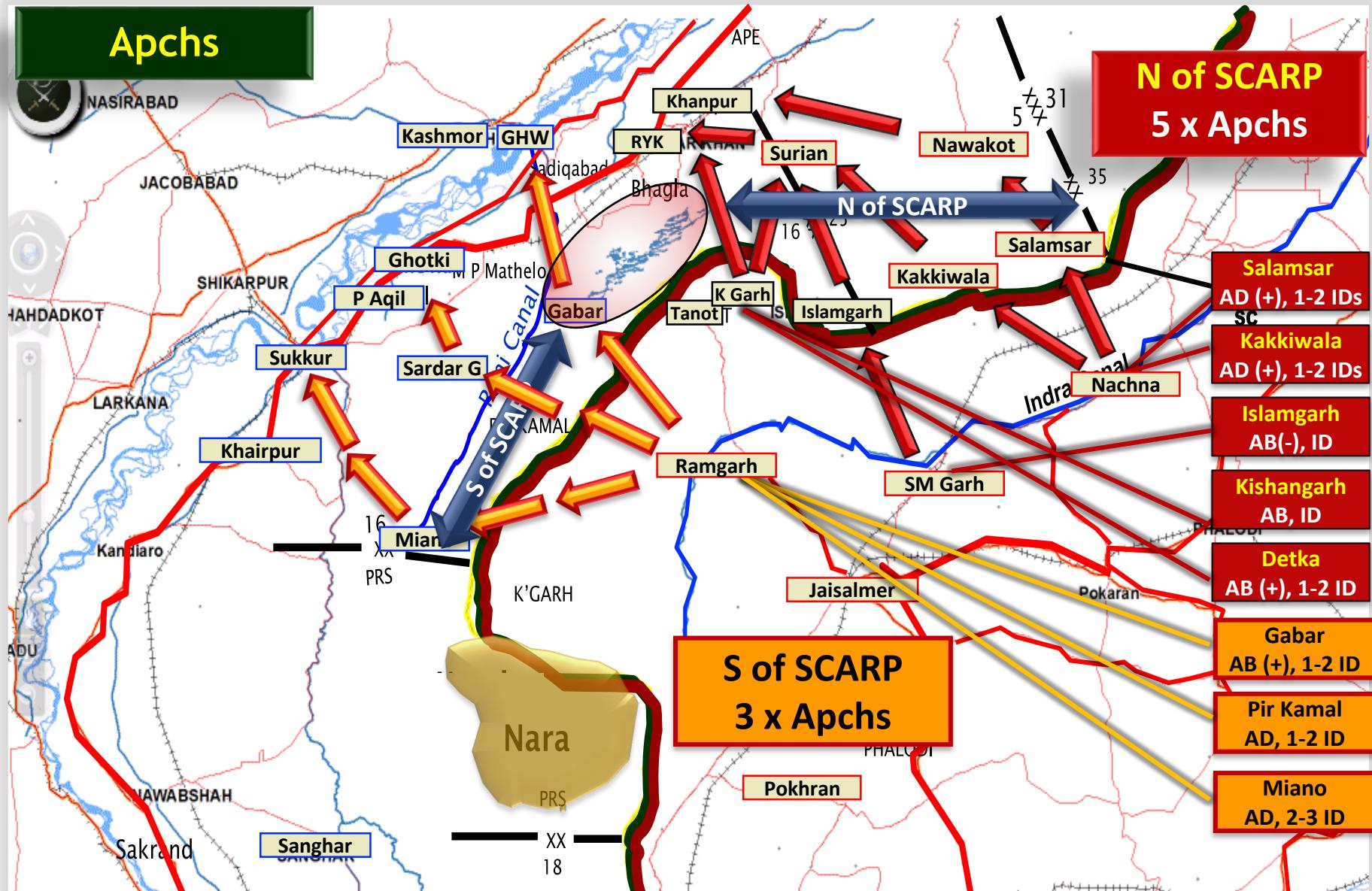
Historical  
Context

Concls from Z of Op

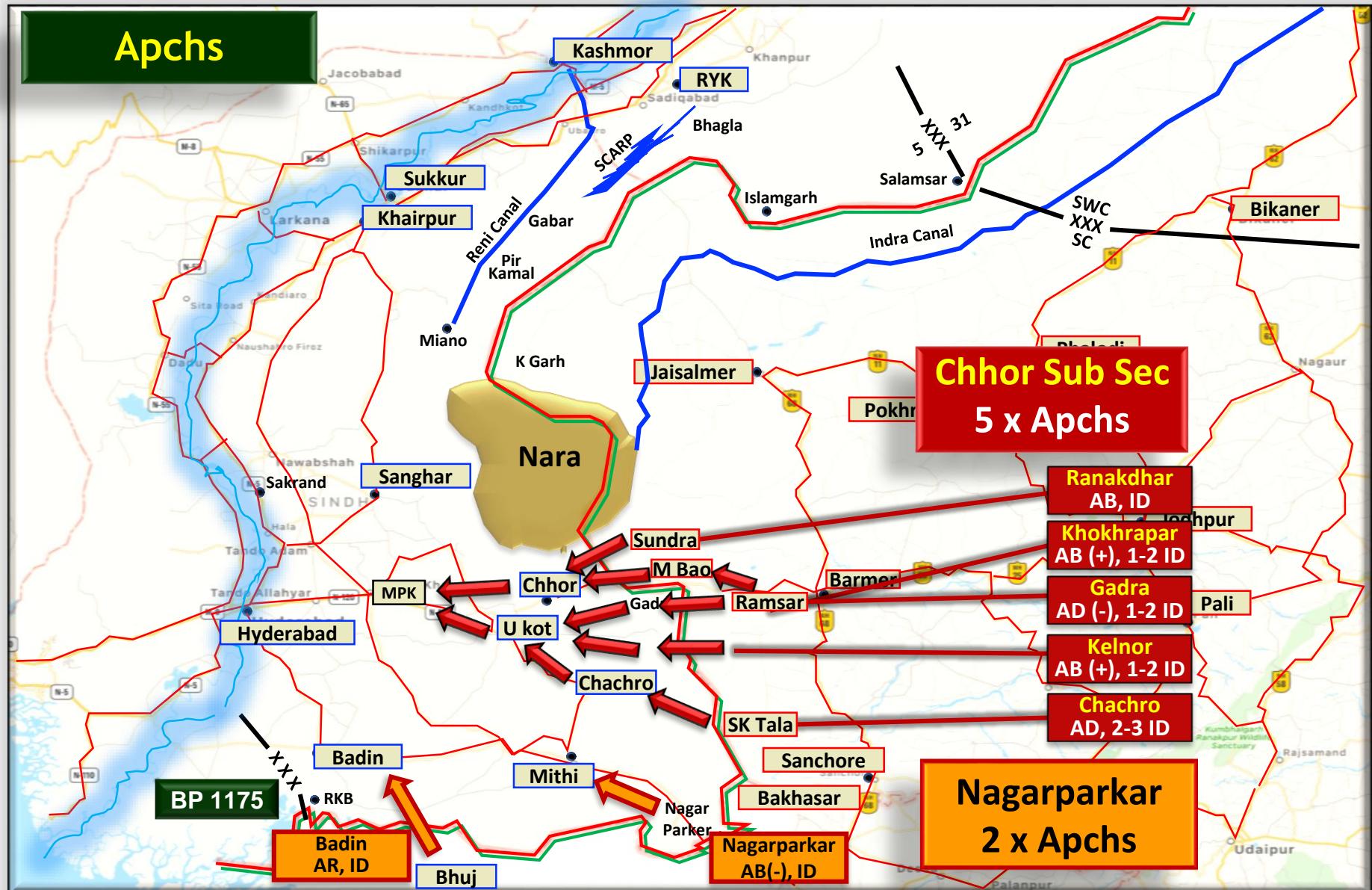
# Strat Objs / Dirs



# North of Nara



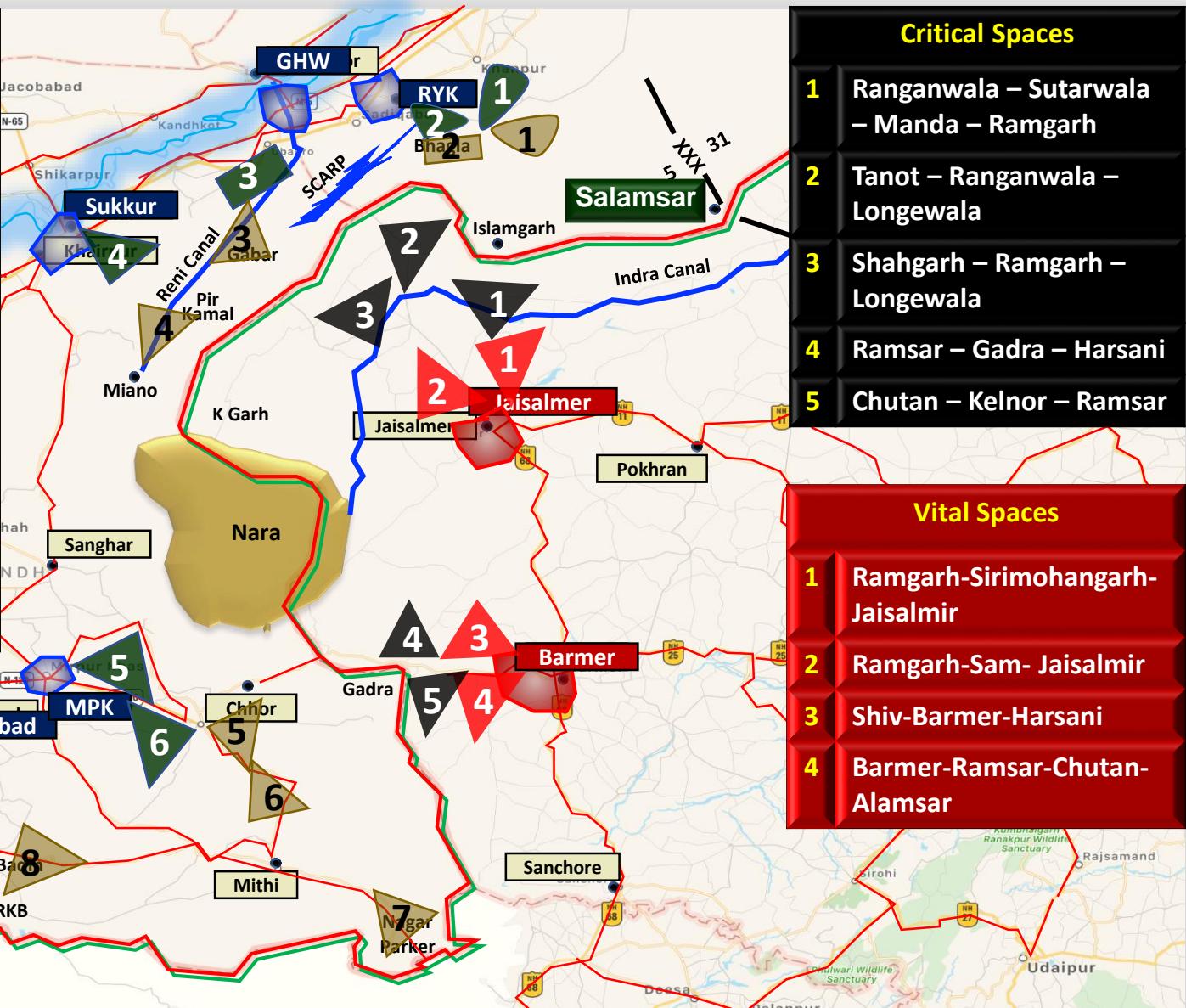
# South of Nara



# Vital / Critical Spaces

Critical Spaces	
1	Surian-N Kot-Bahuwala
2	Surian-Bahuwala-Detka-K wari
3	P Kamal-Chimanwaro-Gabbar
4	Pir Kamal – Miano – Chandanwaro Pat
5	Umarkot – Mangtar - Ratnaur
6	Kinsar – Ratnaur – Chachro
7	Nagarparker Salient
8	Badin – Diplo – Nawa Kot

Vital Spaces	
1	Kpur, Ch Toba, Surian
2	RYK - Shuriyan - K wari
3	Daharki - Dad L - MPM
4	Rohri - Salehpat - Sorah
5	Khipro – MPK - S Faqir
6	Konri - MPK - Umar Kot



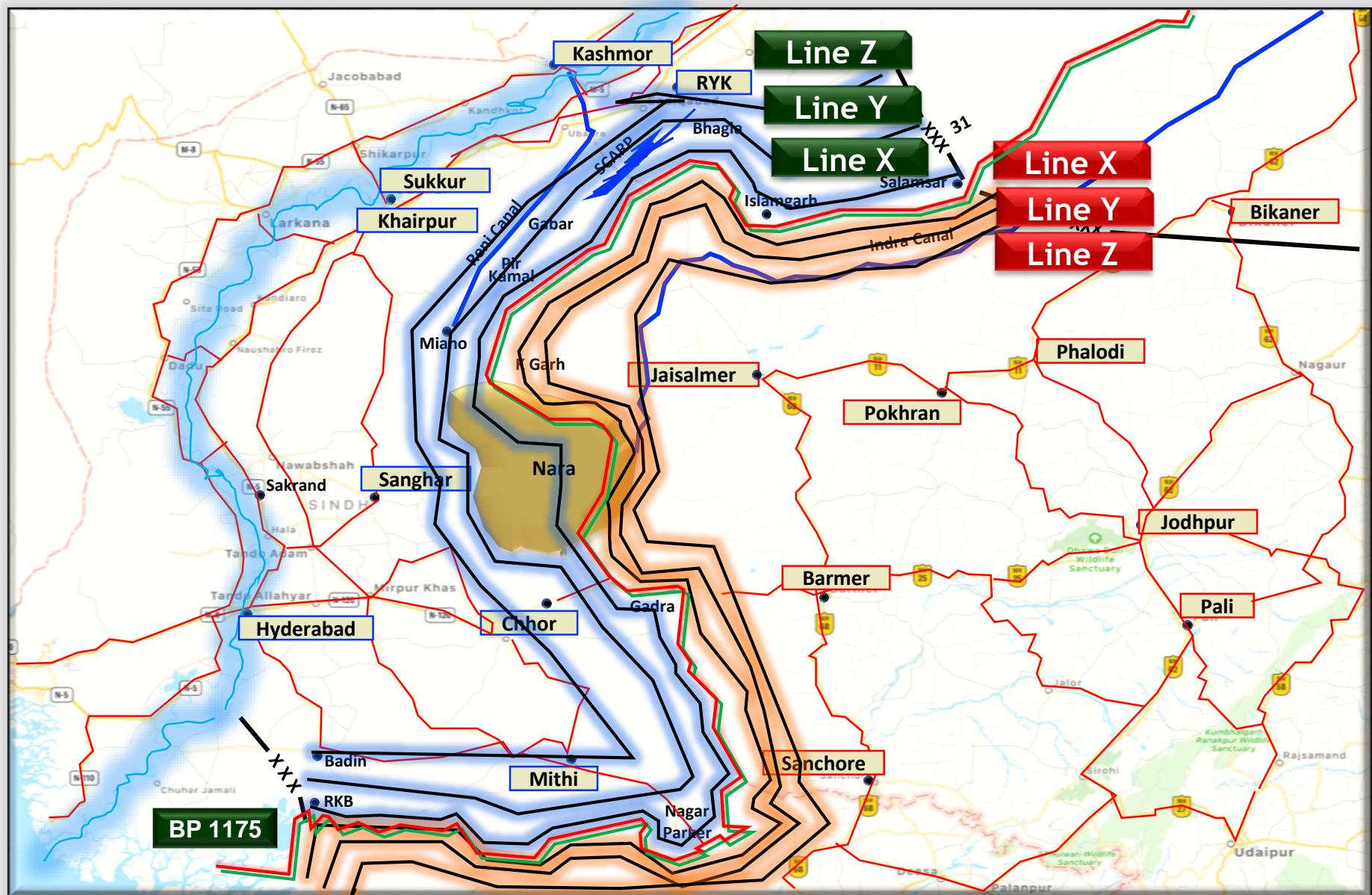
Terrain Analysis

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# Lines of Def



# Concl

Gen

Socio-eco & Pol

SSO

Compartmentation

Interior Lines

Mov & Assy

Vuln BOO

Demography

Zone  
Specific

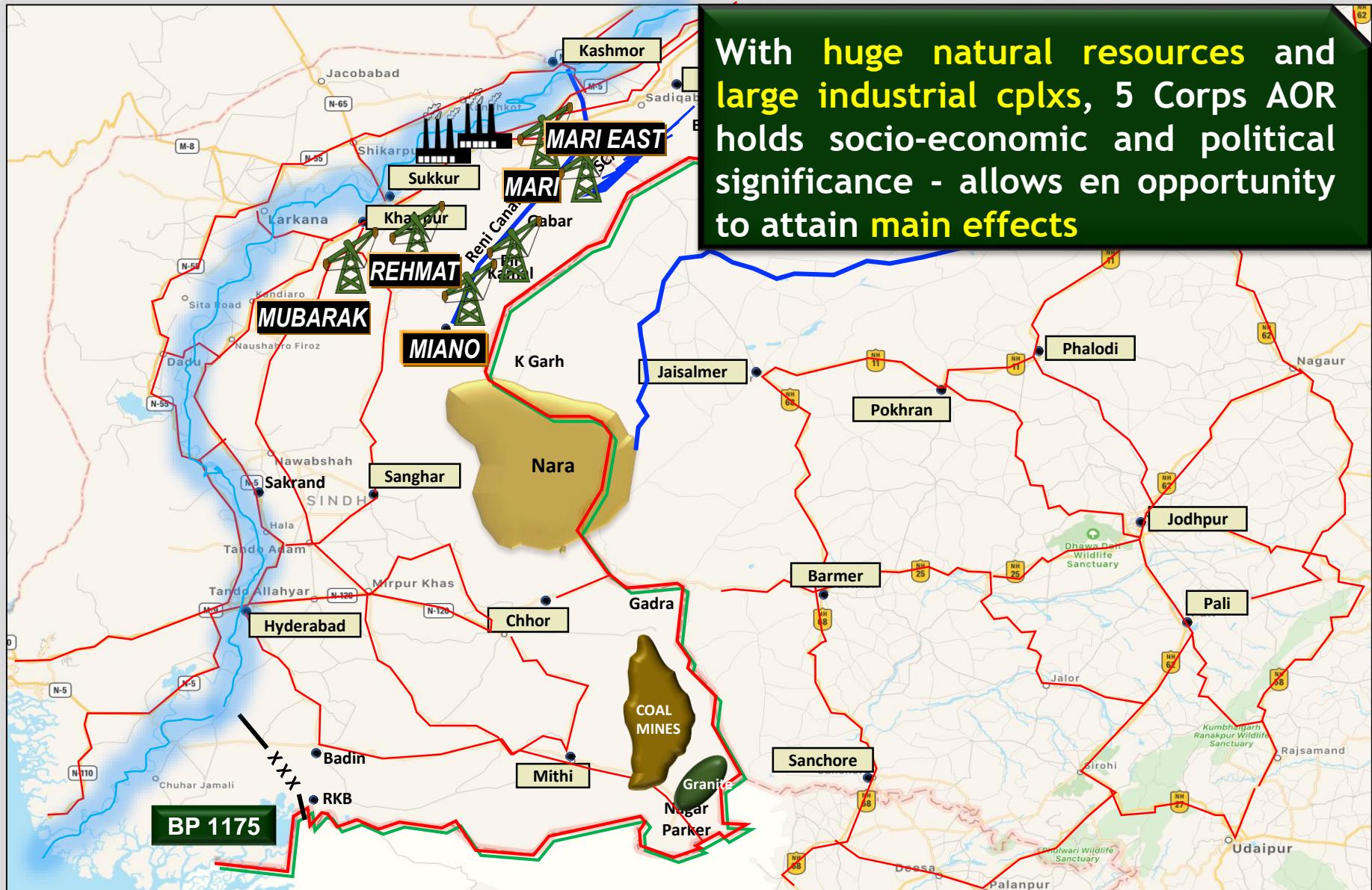
N of Nara

Nara Sec

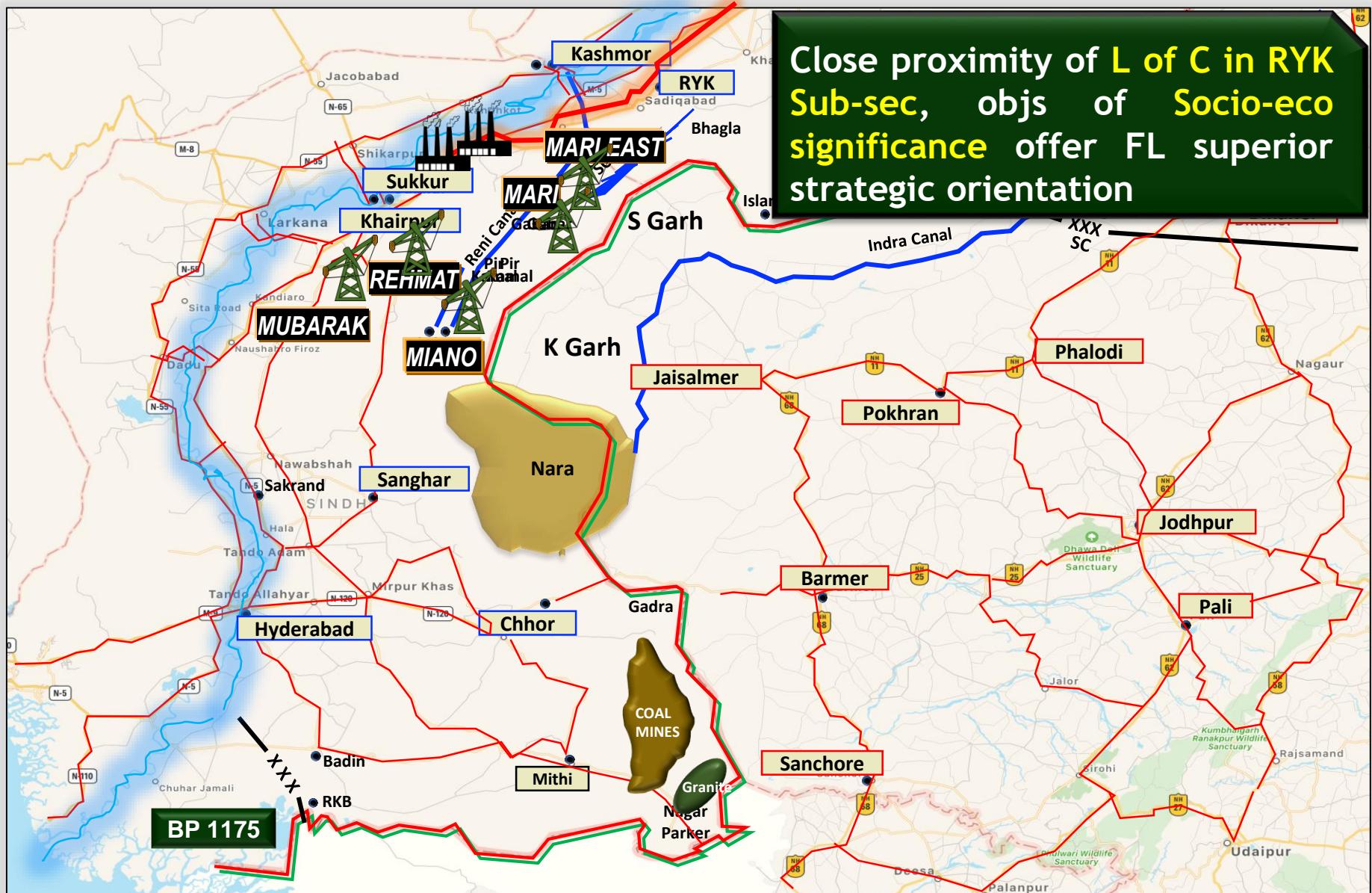
S of Nara

Creeks

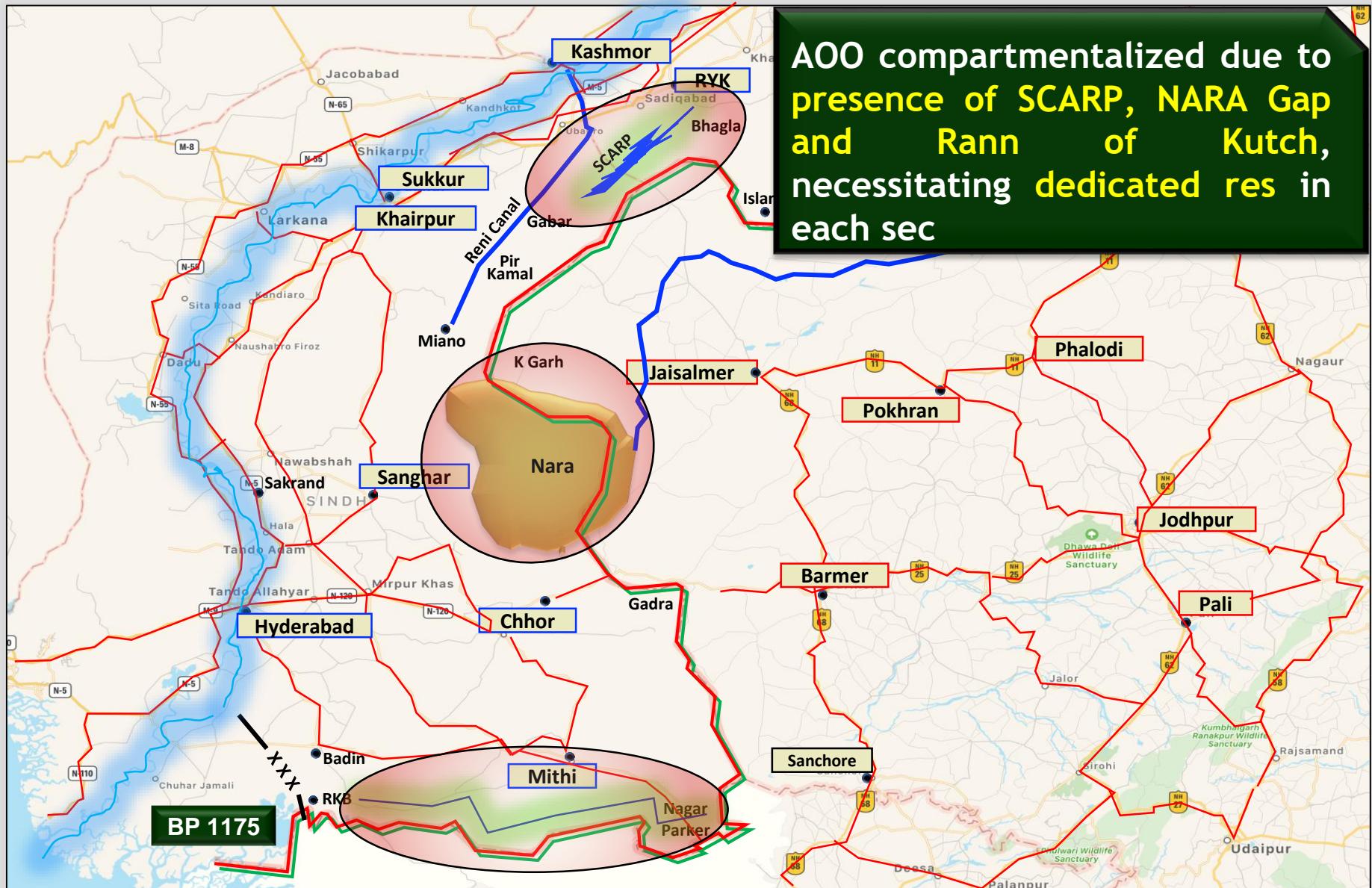
# Socio-eco and Pol Significance



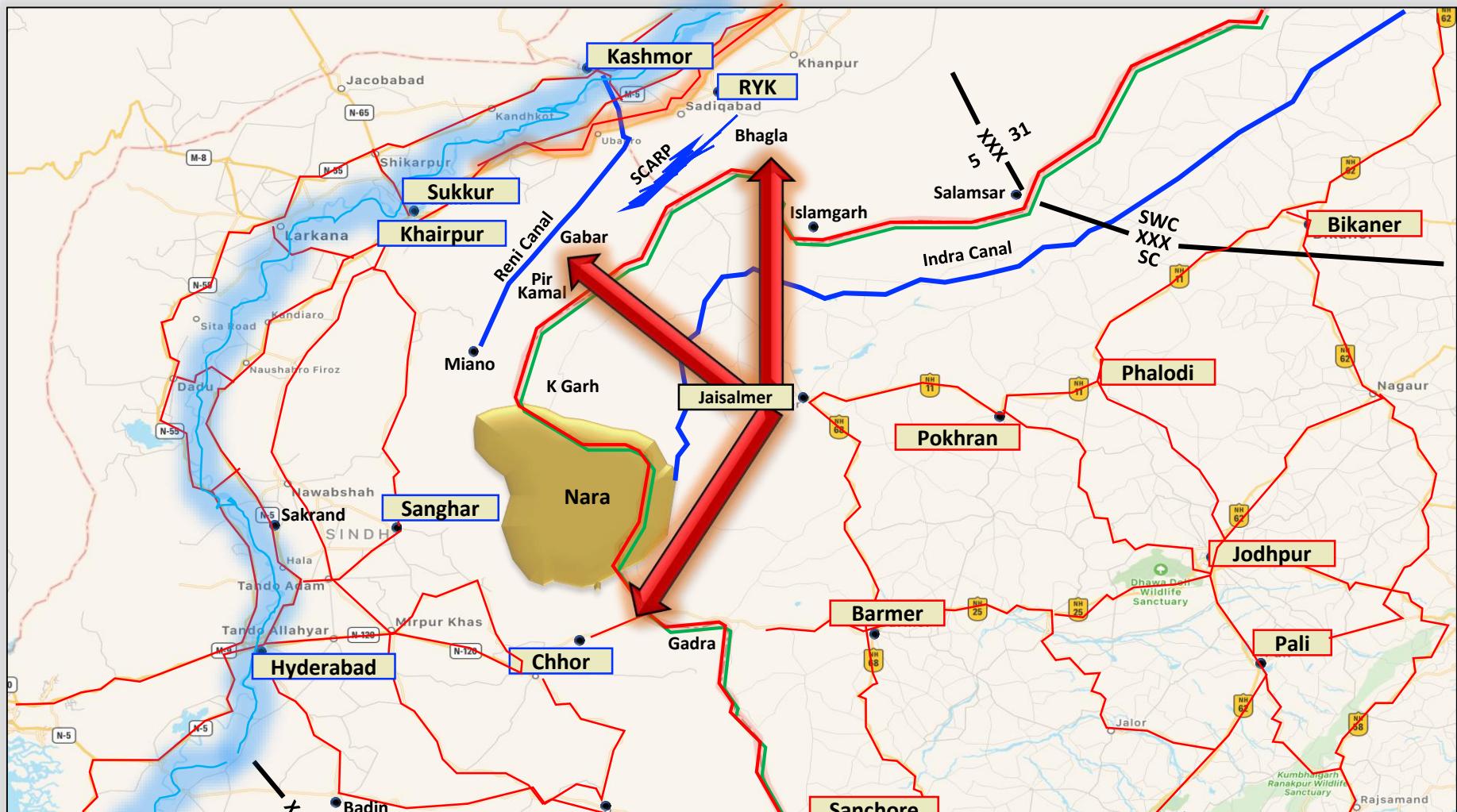
# Superior Strat Orientation



# Compartmentalization Eff

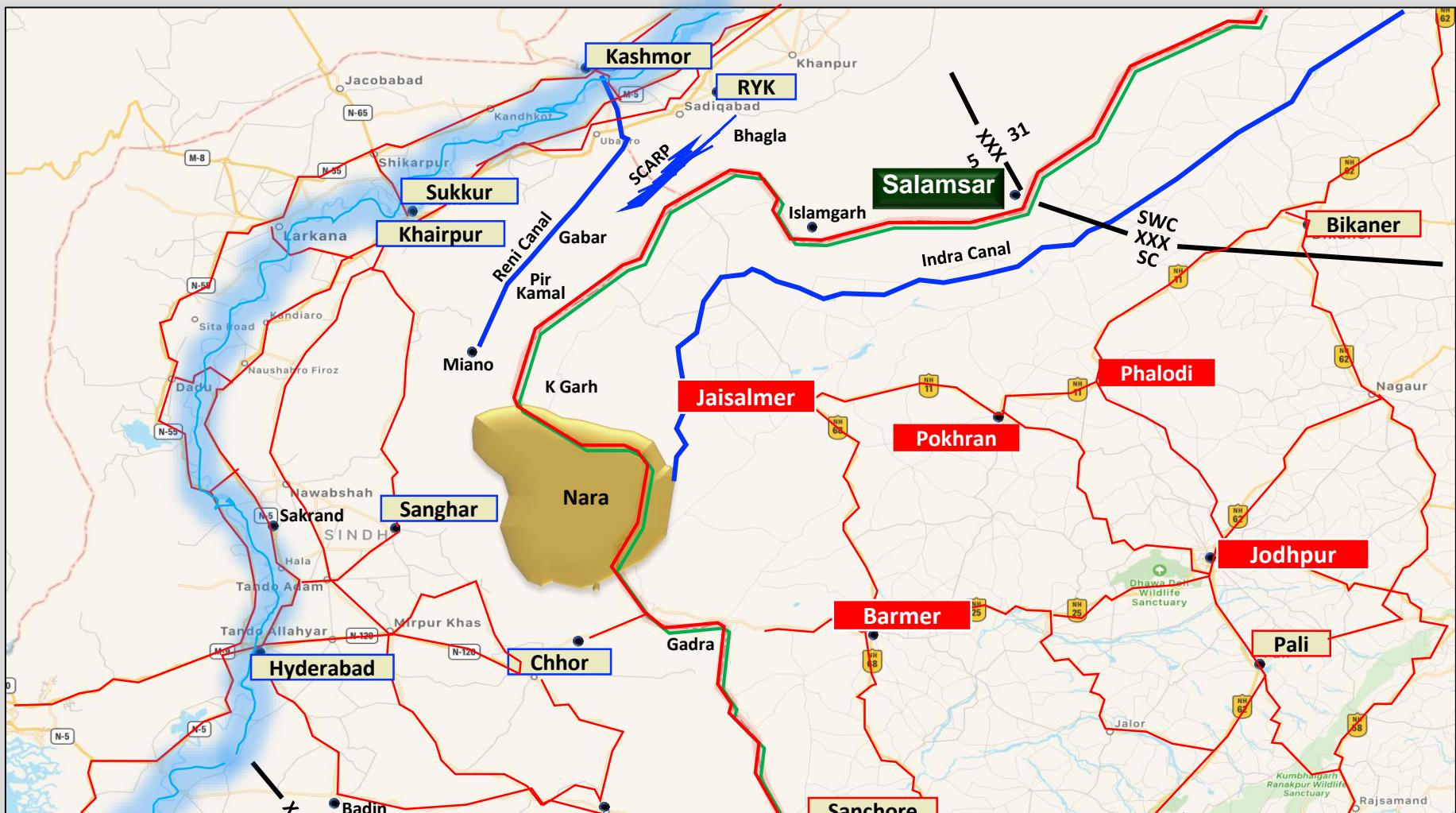


# Op on Interior Lines



FL enjoys the advantage of op on interior lines thus adding response challenges for 5 Corps

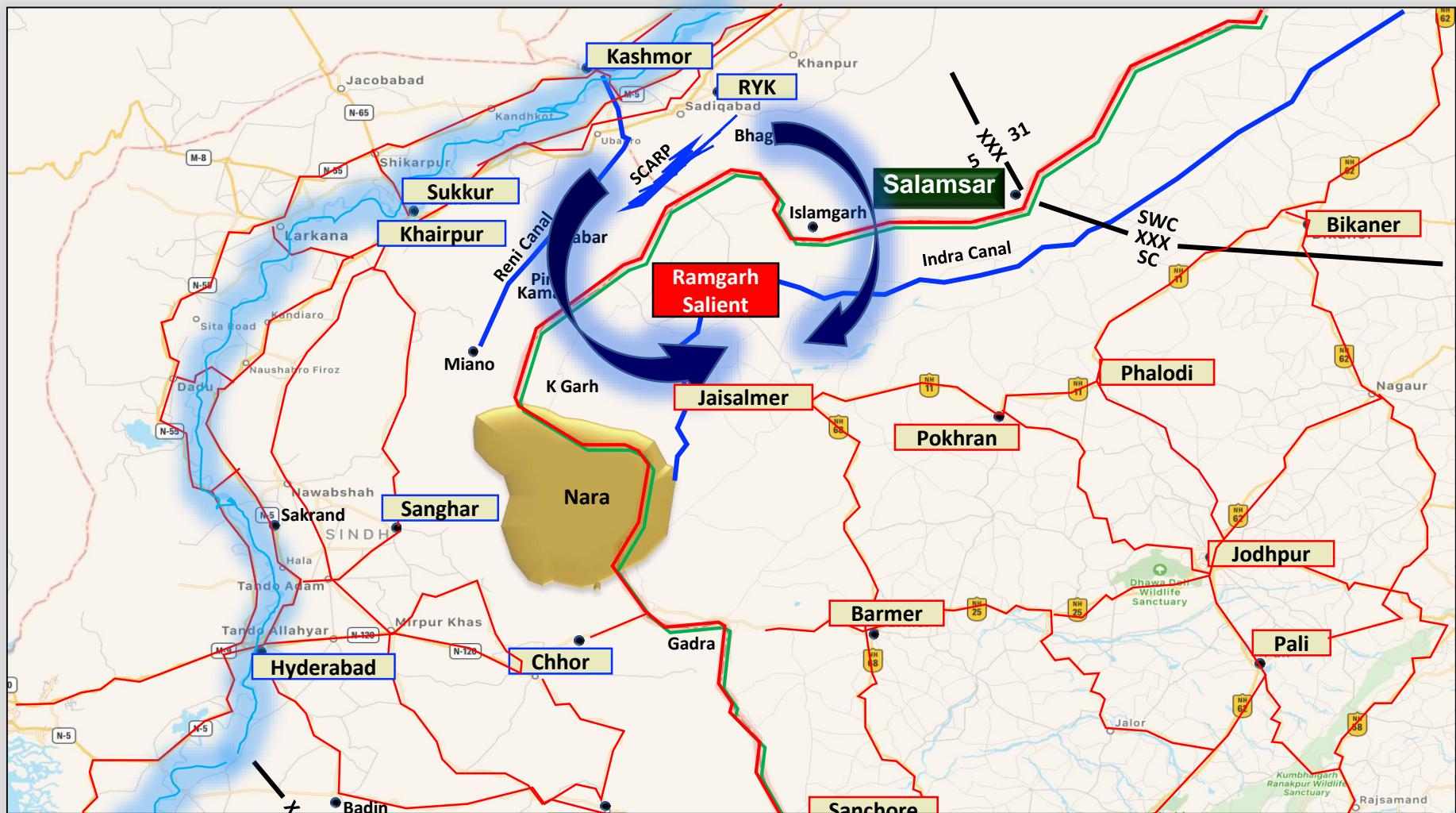
# Key Areas in Mov & Assy



Jaisalmer - Jodhpur - Barmer emerge as decision pts beyond which Cd/ Corps Hypotheses are cfm, having dir bg on response options of BL

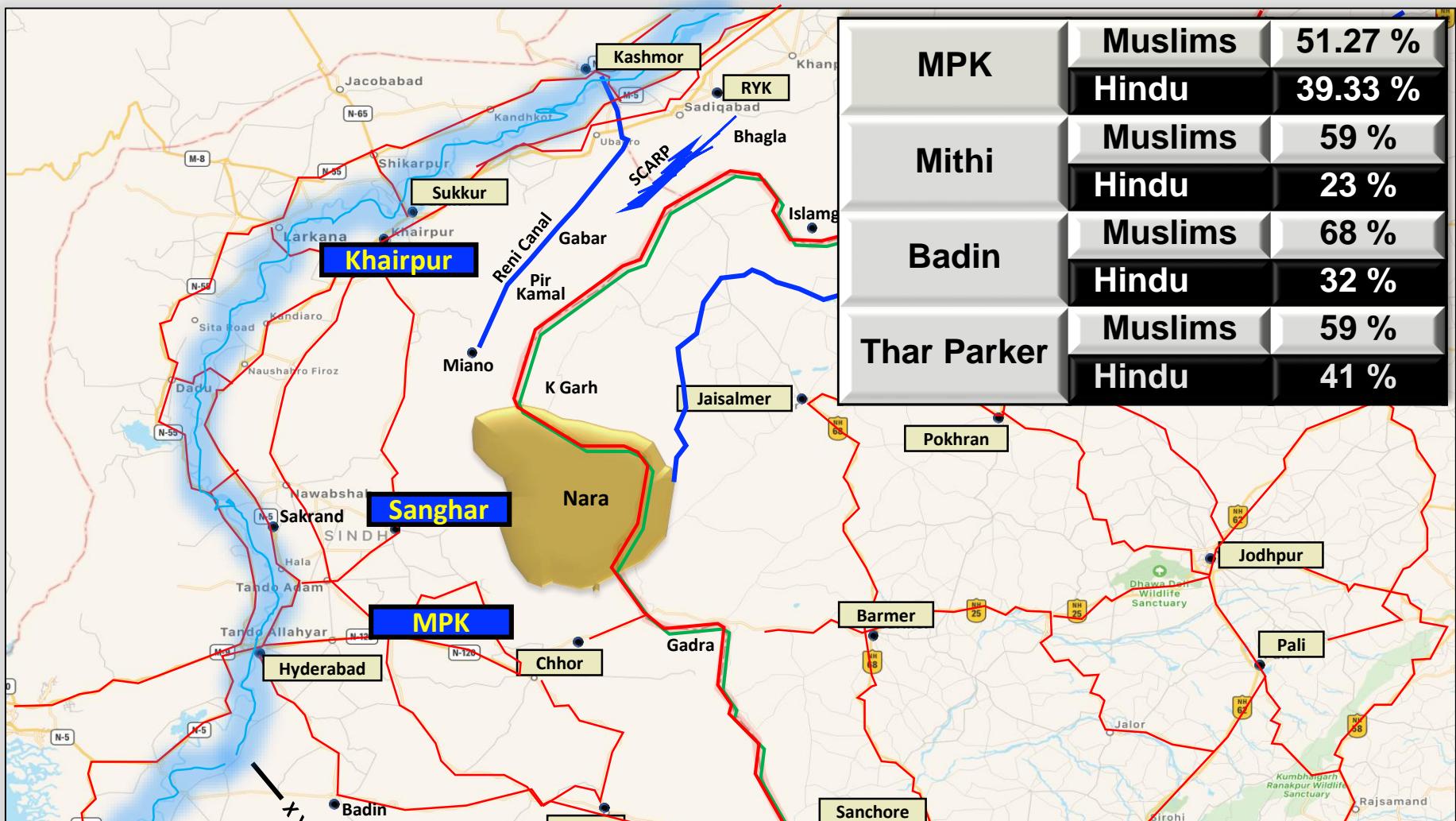
# Vuln Base of Op

65



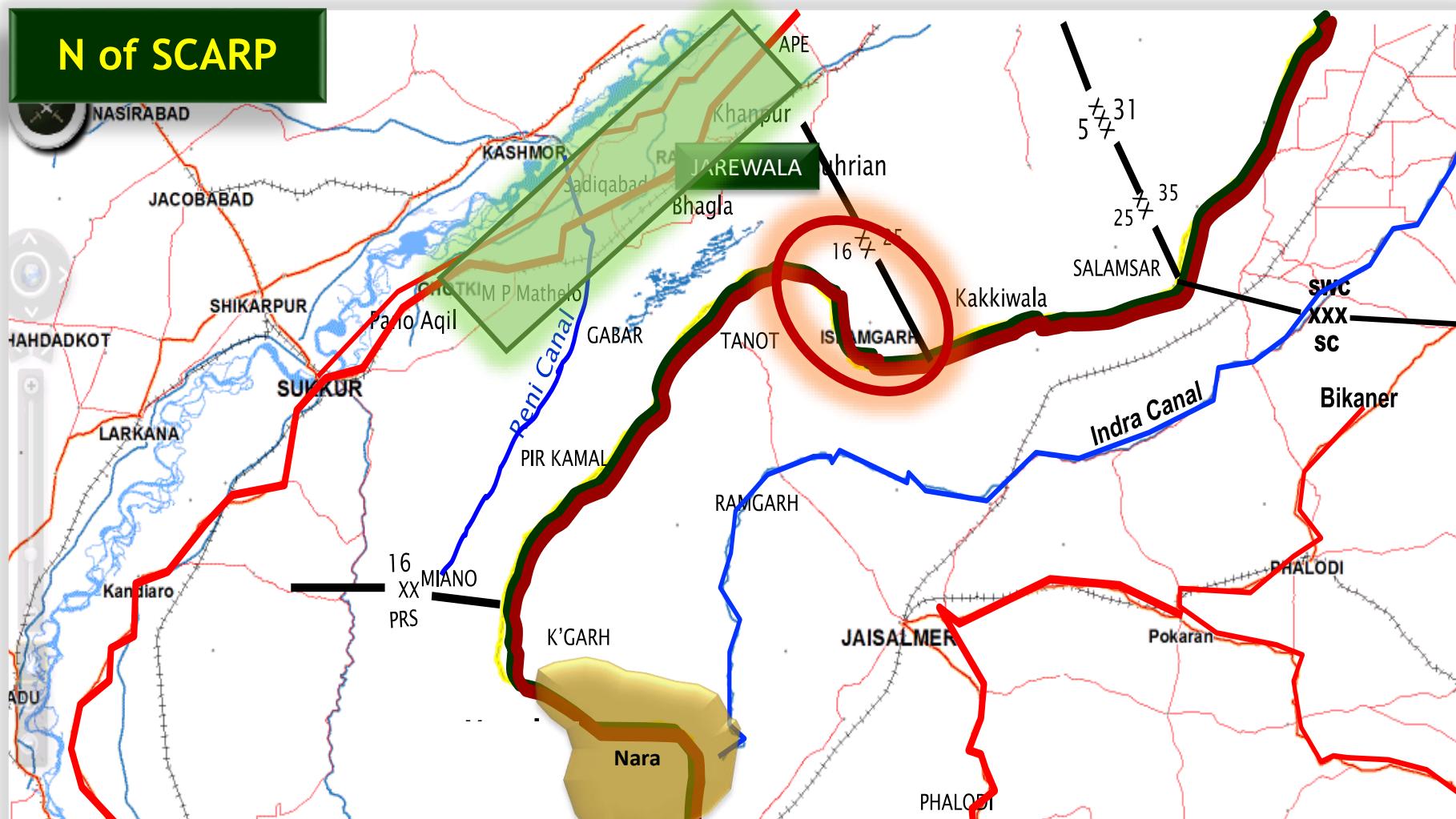
Owing to config of Ramgarh Salient, FL's base of ops remains vuln and can be exploited by BL forces

# Demographic Significance



**Hur community in the central zone - can be of asst in def mnvr**

# Concls - North of Nara



Jarewala Sub-sec due to close proximity of Green Belt & Strat L of C, figures out as a pri obj Z, meriting fwd def posture

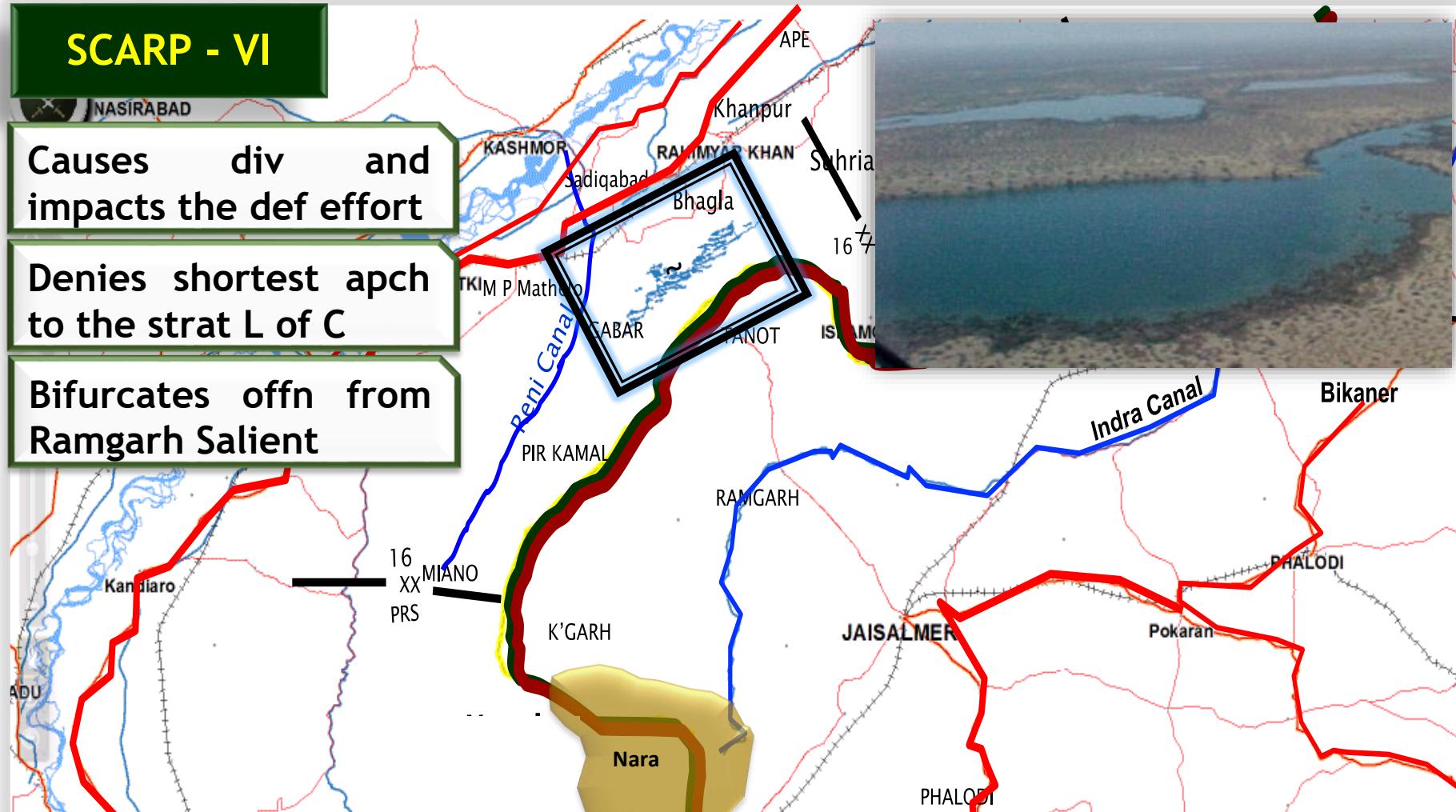
# Concls - North of Nara

**SCARP - VI**

Causes div and impacts the def effort

Denies shortest apch to the strat L of C

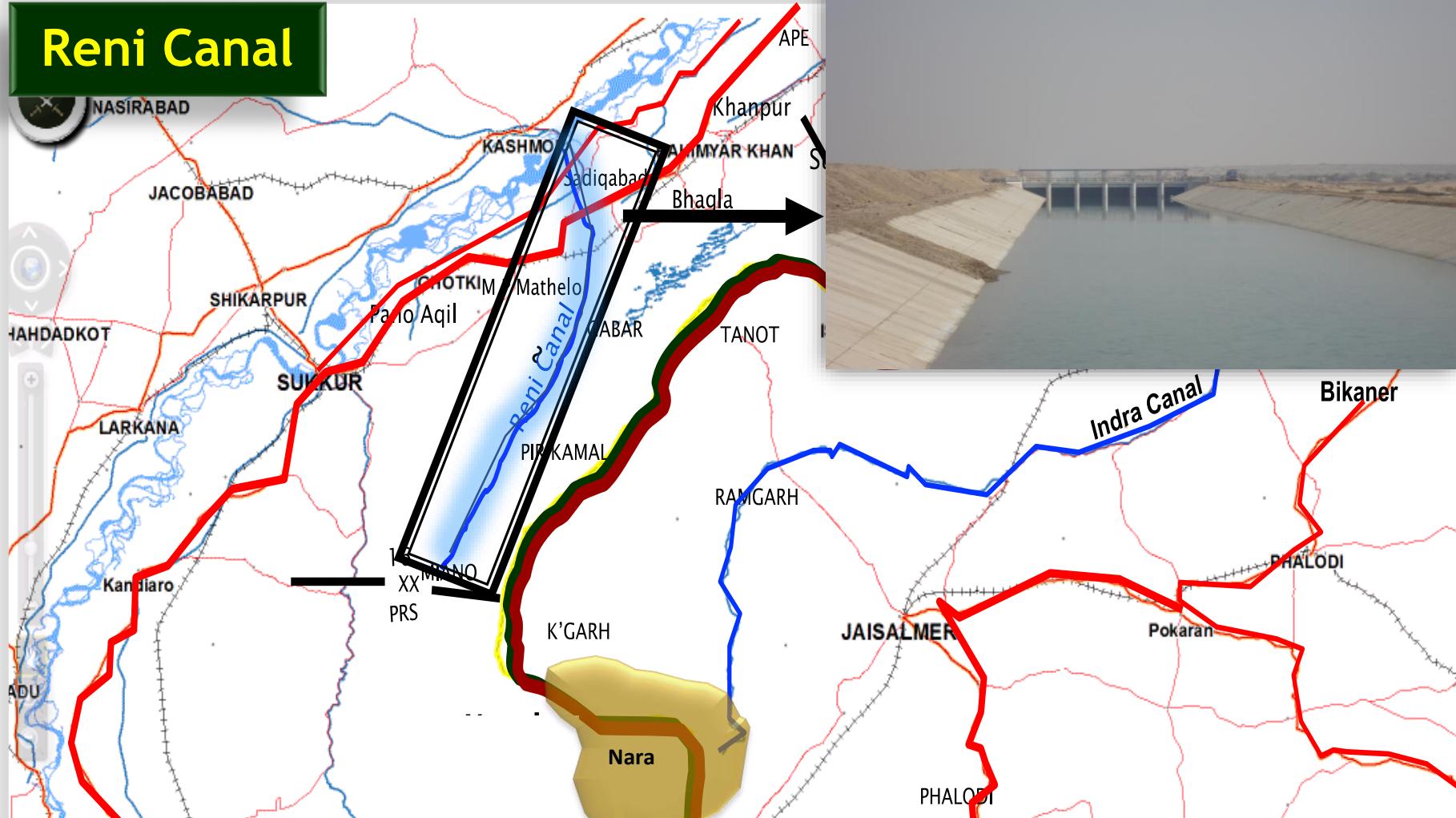
Bifurcates offn from Ramgarh Salient



SCARP-VI (104 kms) serves as an eff obs

# Concls - North of Nara

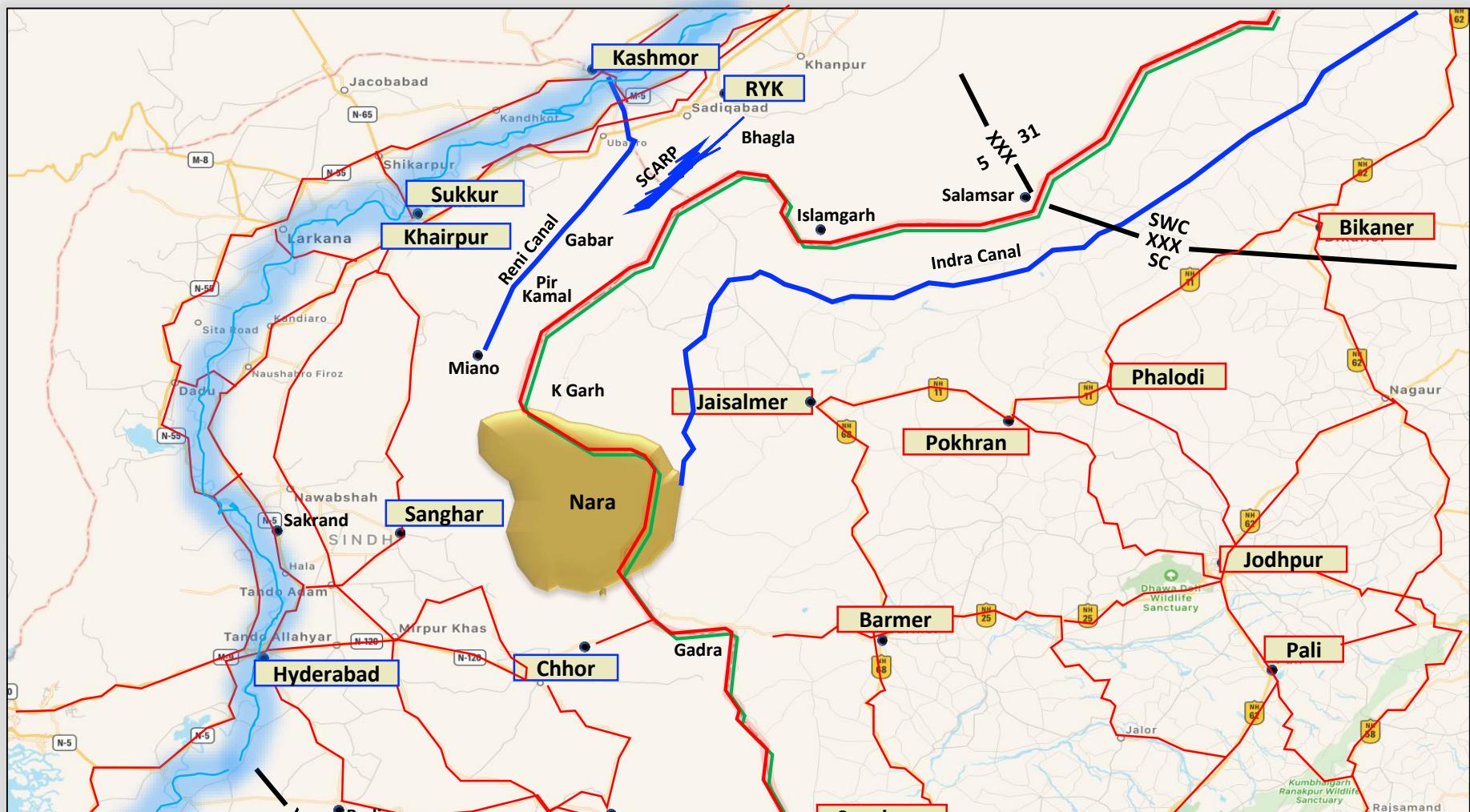
## Reni Canal



Reni Canal will extend the Green Belt closer to the intl border - enhancing mil significance of the area

# Concls - Nara Sec

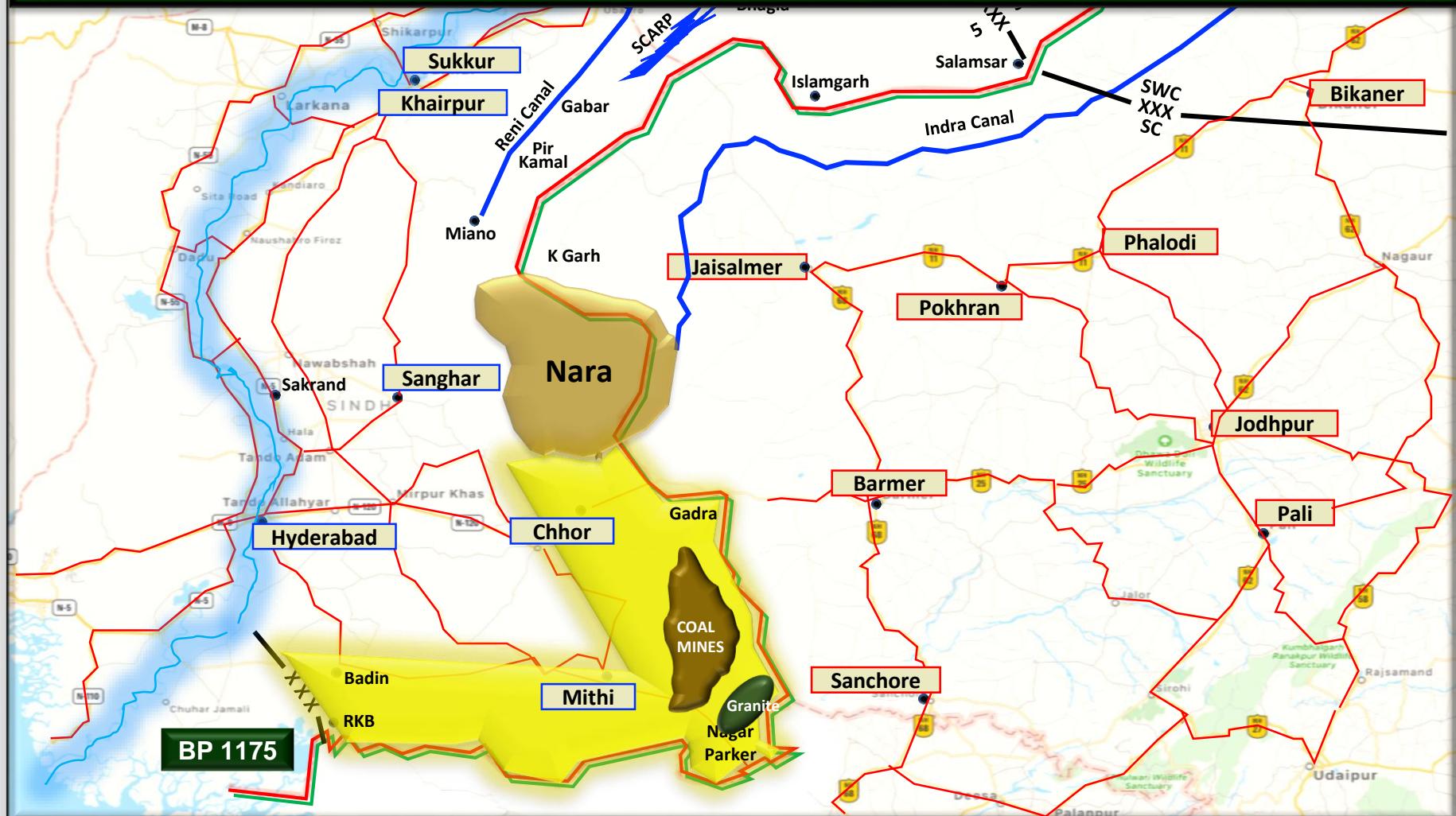
70



Divides def effort creating problems of lateral adjustments. Forces from the outset, both attk & def, have to be specifically designated

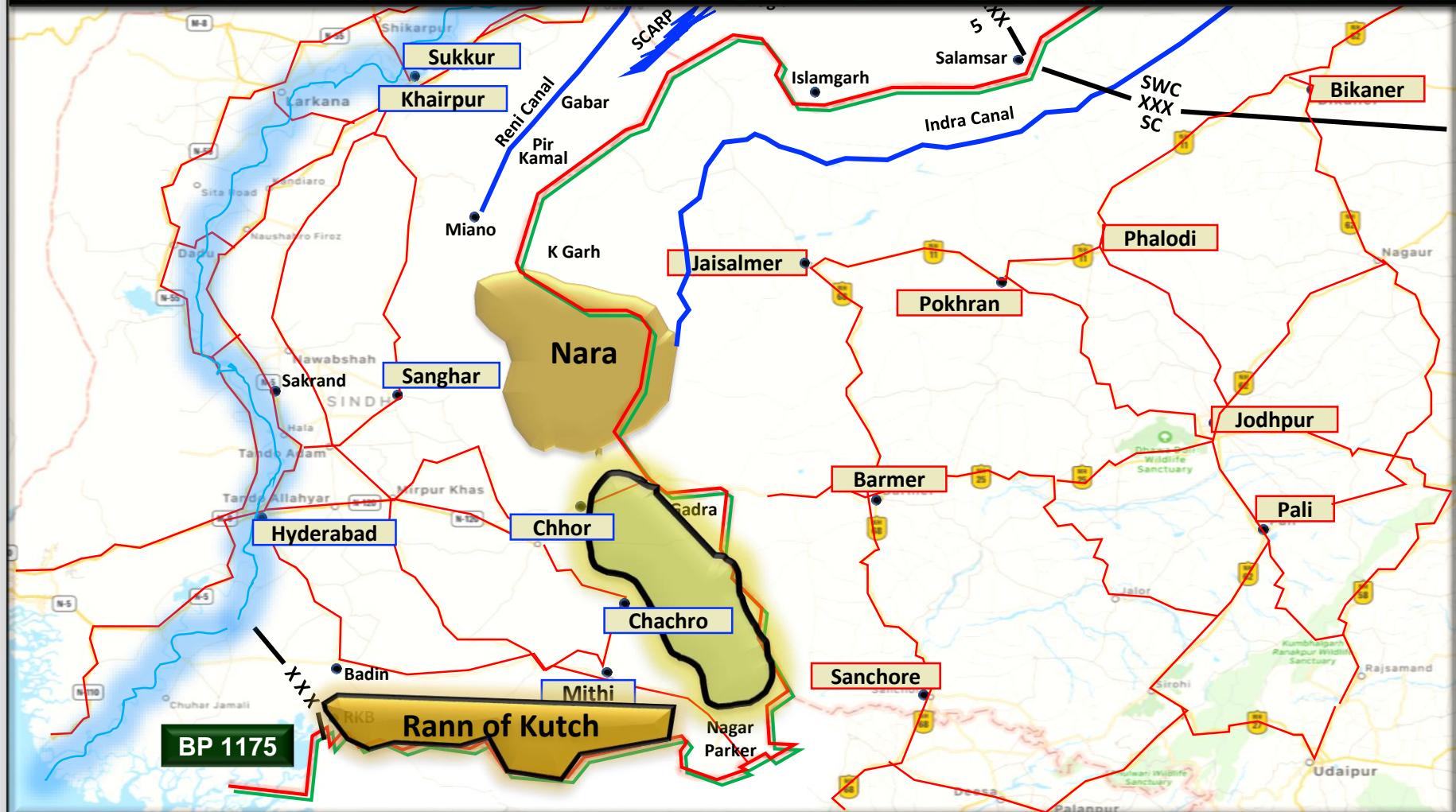
# South of Nara

Discovery of coal res and unprecedented dev of infra adds to psycho-social and eco significance of the area



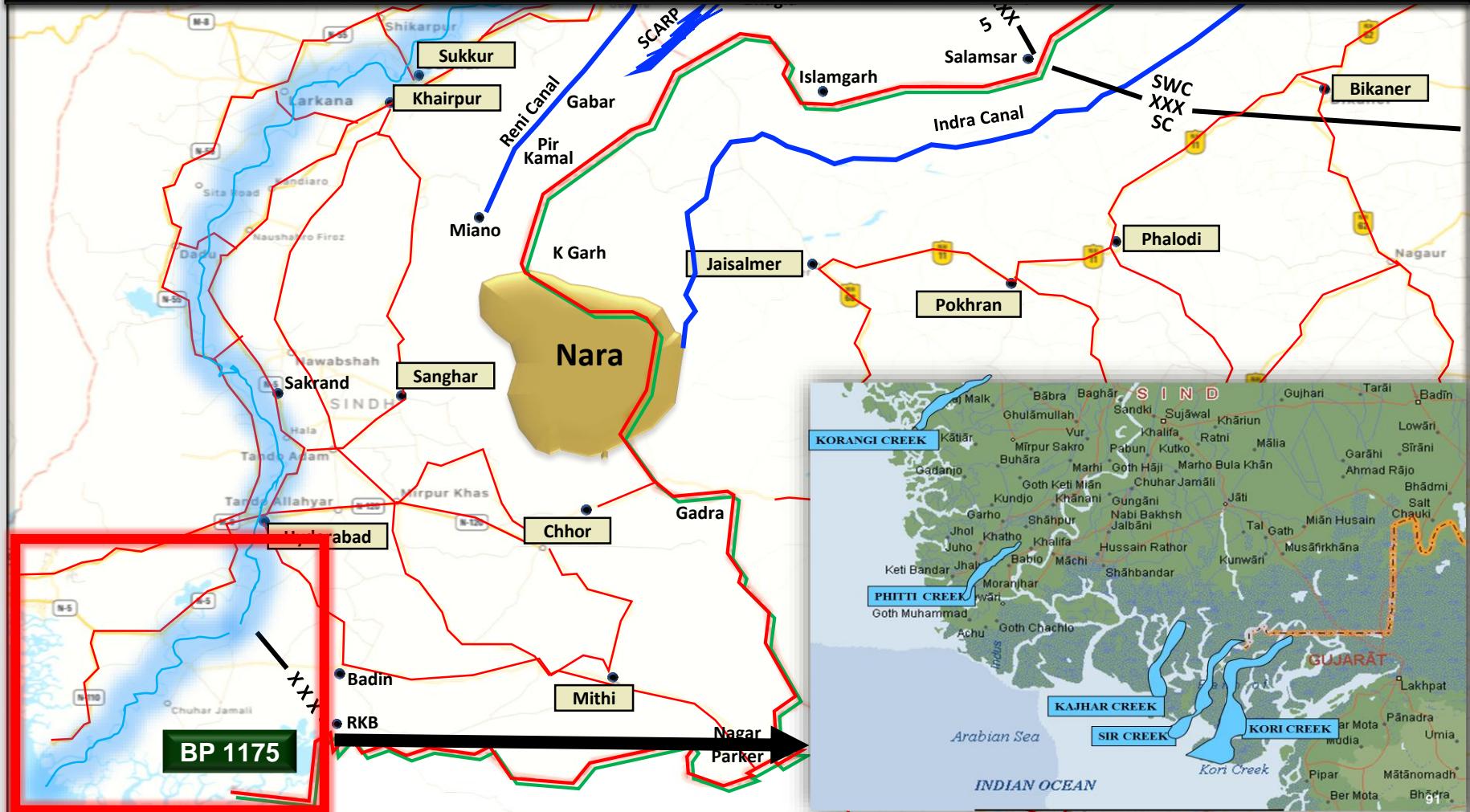
# South of Nara

Ops in Rann of Kutch are **only possible in winters** when it provides excellent X cty mob for whs and trs



# Creeks Area

Non - avail of road network to fwd posts impedes rft and incs log challenges

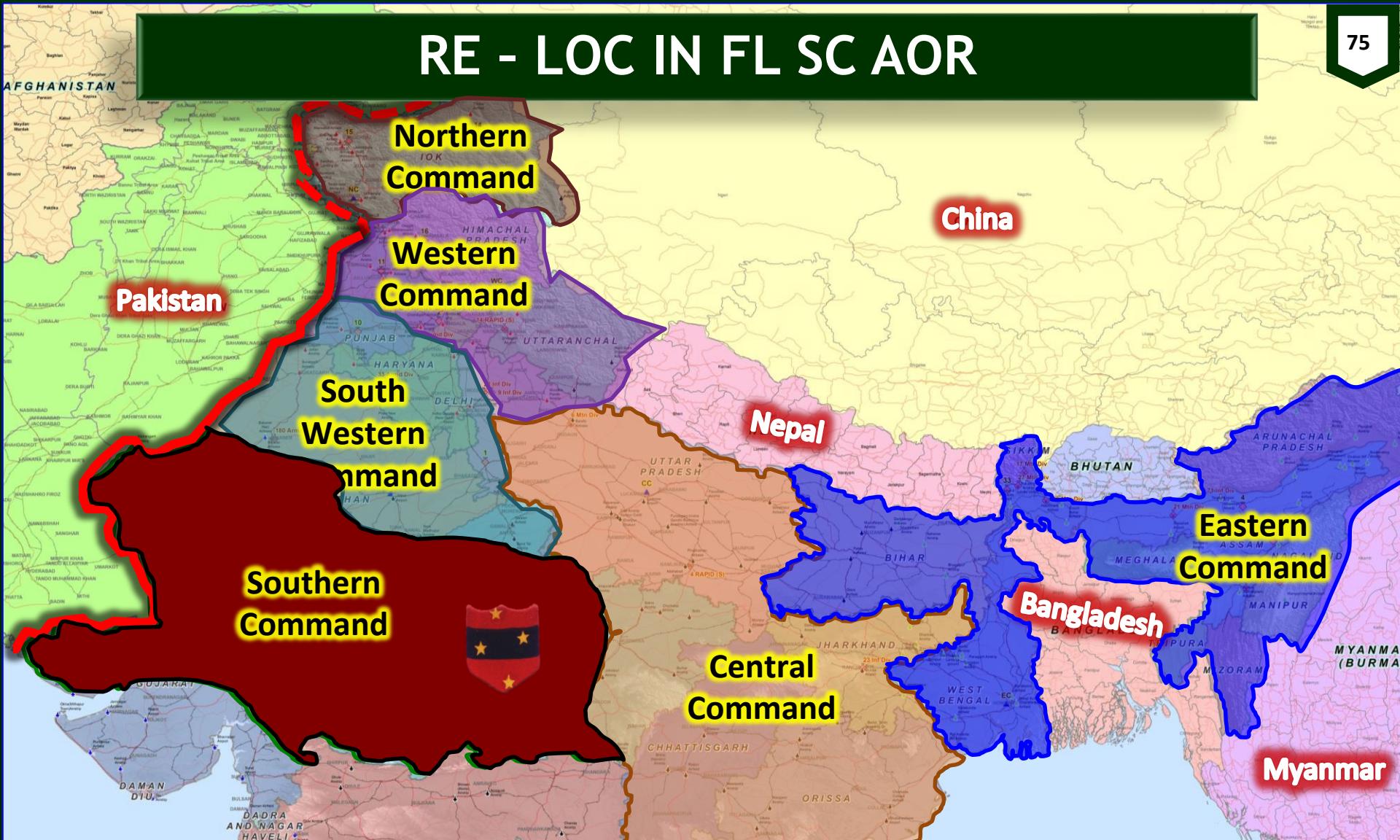


PART - IV

RE - LOC (FL SC AOR)

IMPACT ON 5 CORPS OPS

# RE - LOC IN FL SC AOR



Composn & Loc



Re-Loc Completed

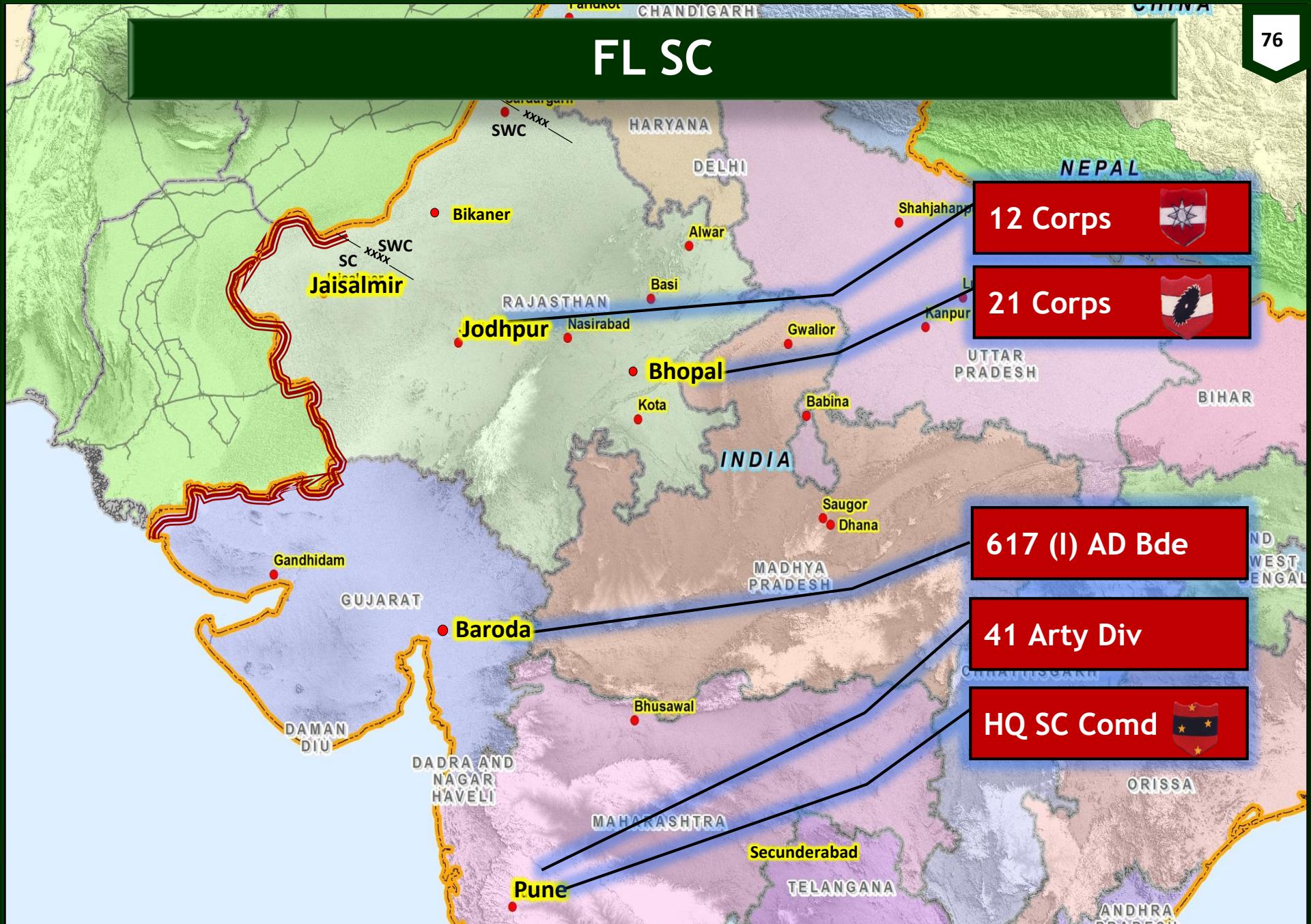


Re-Loc Planned



Impact - 5 Corps Ops

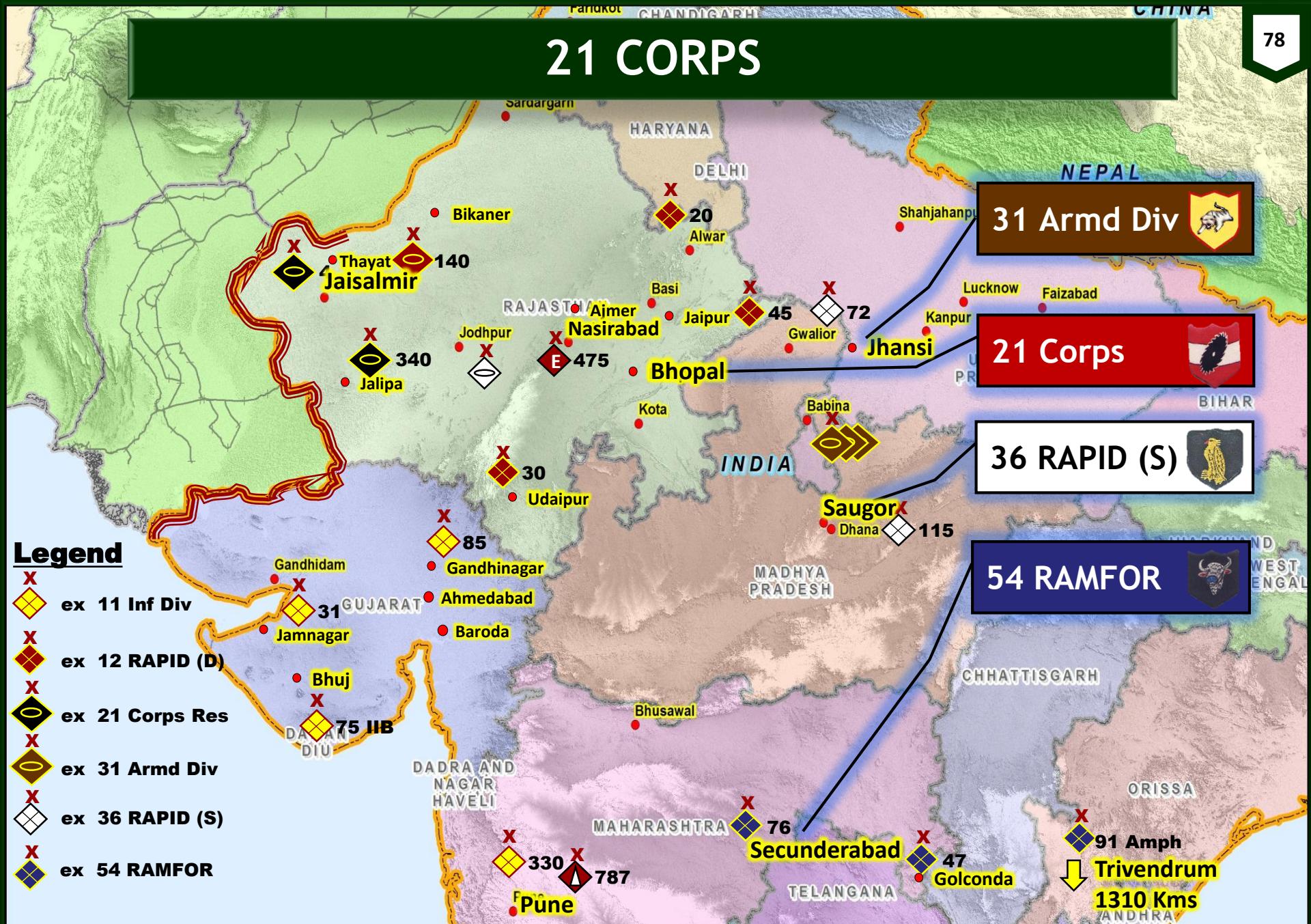
# FL SC



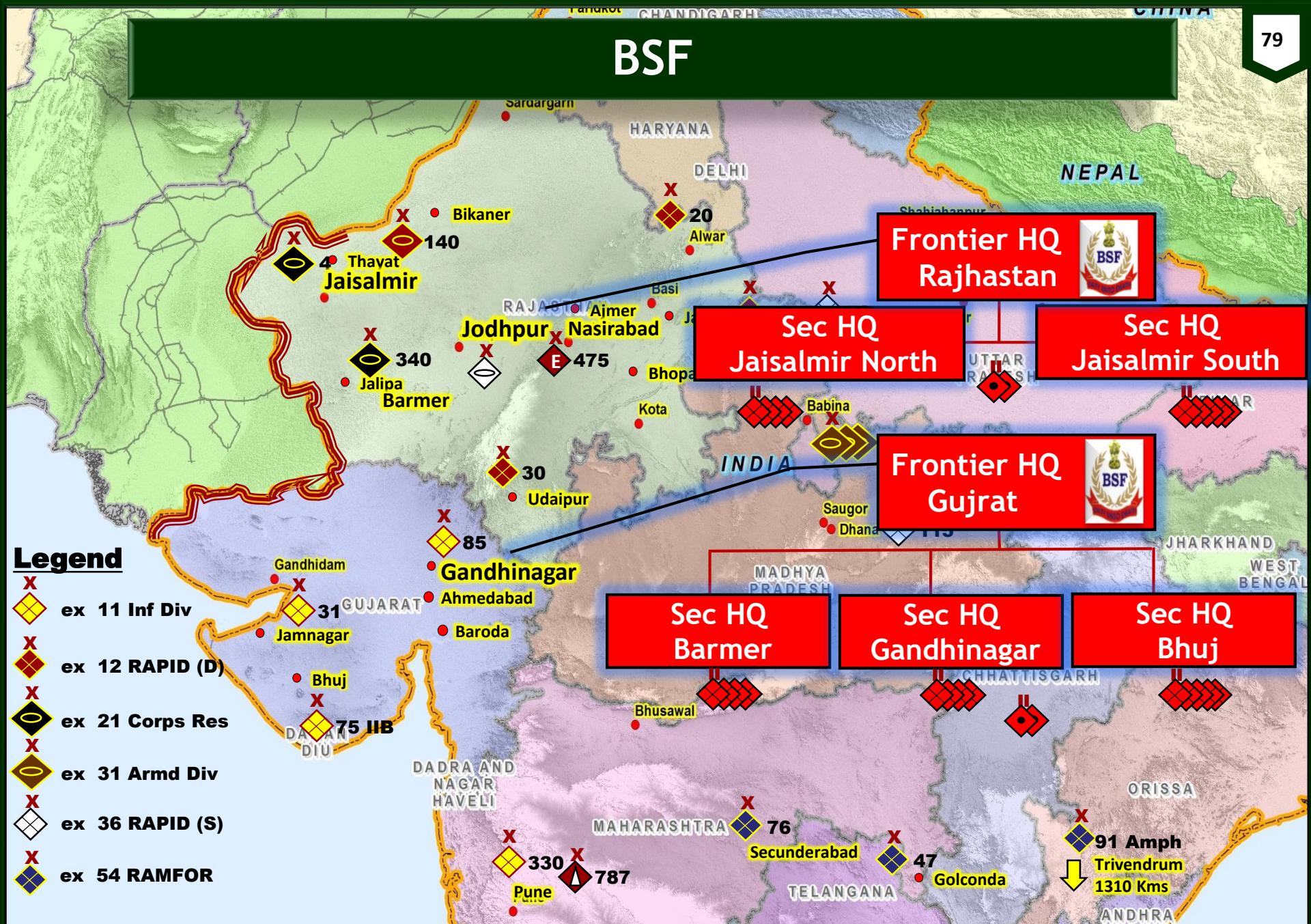
# 12 CORPS



# 21 CORPS



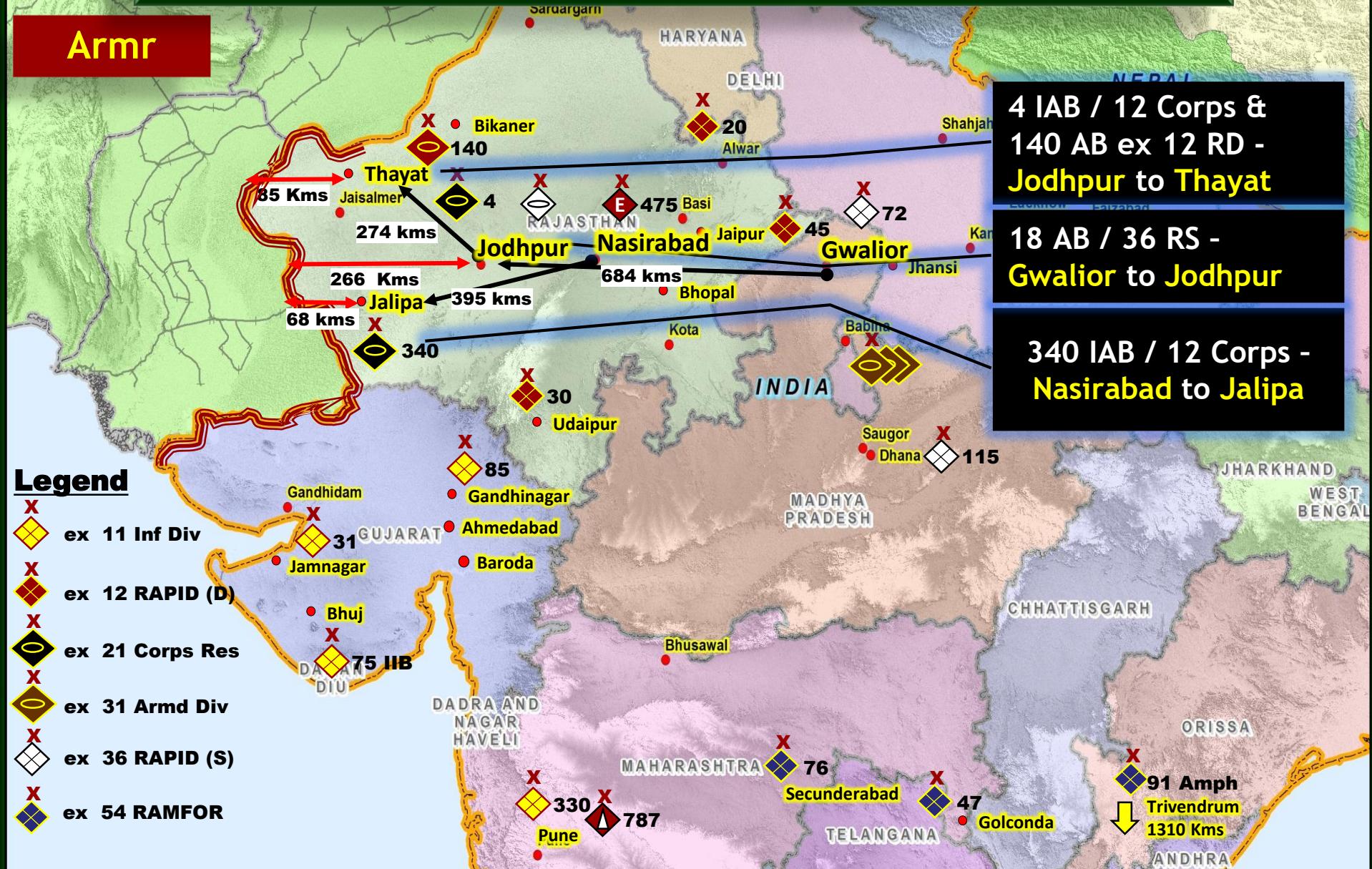
# BSF



# COMPLETED RE -LOC

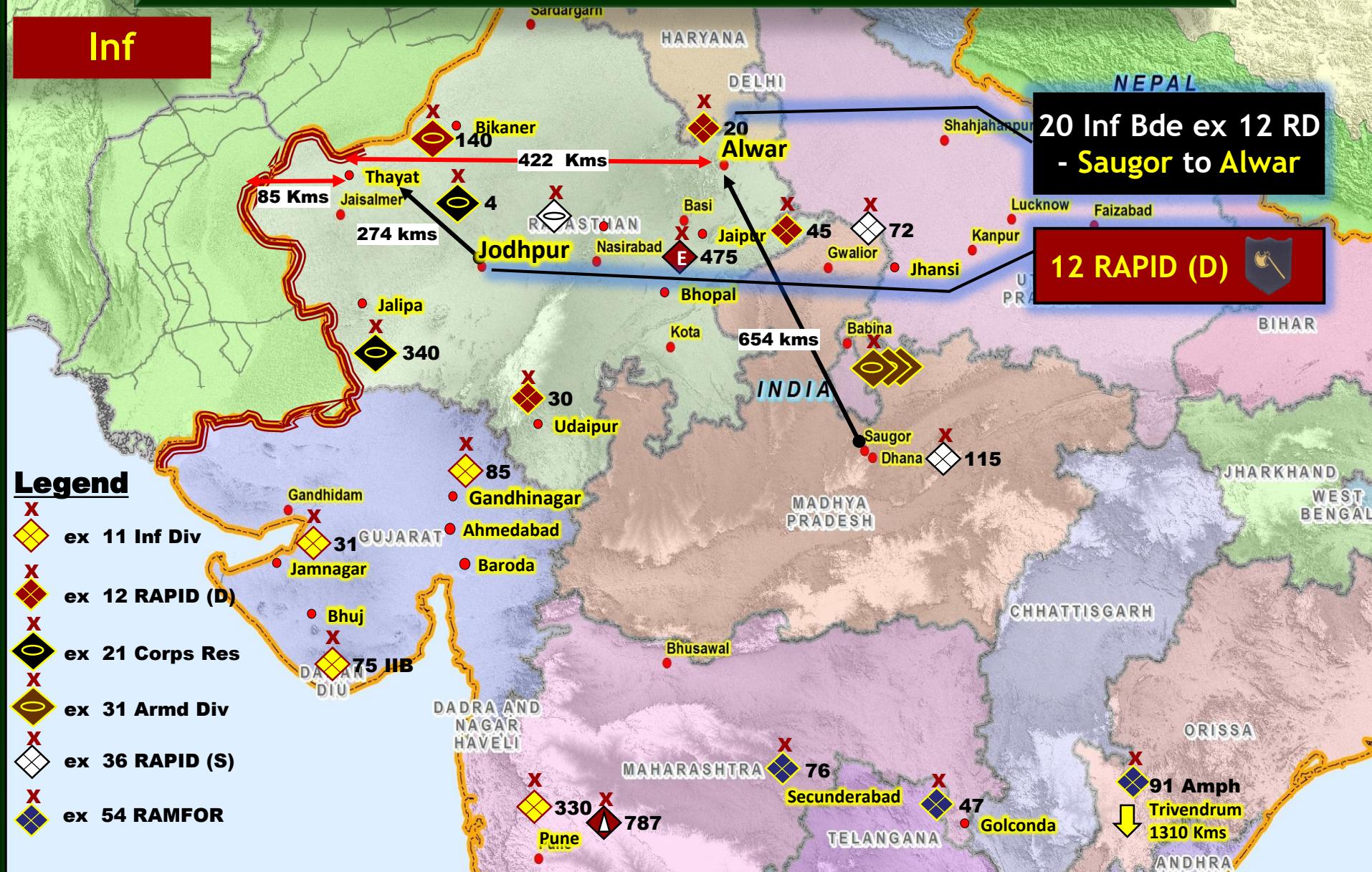
# Major Re -Loc (Completed)

Armr



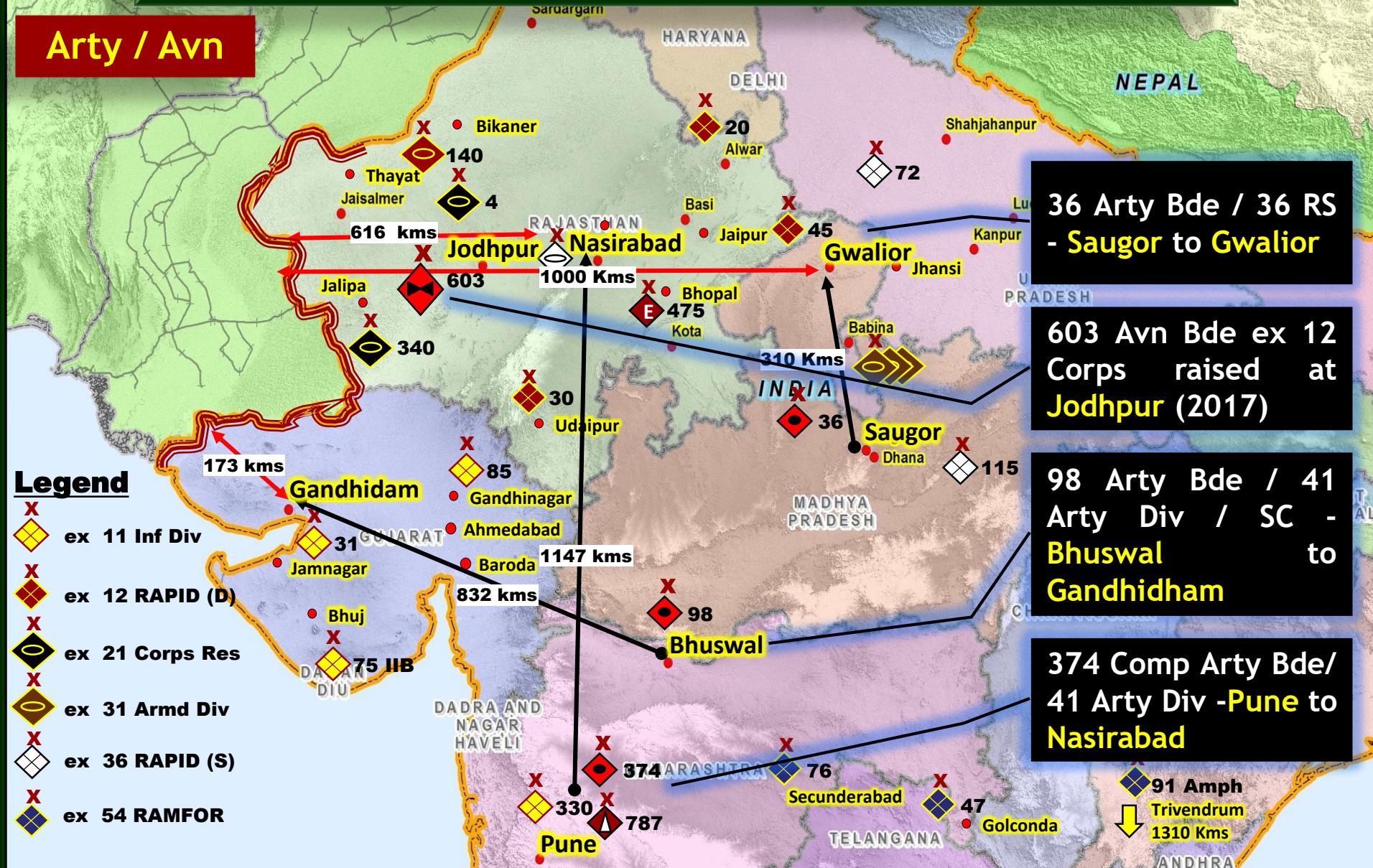
# Major Re -Loc (Completed)

**Inf**



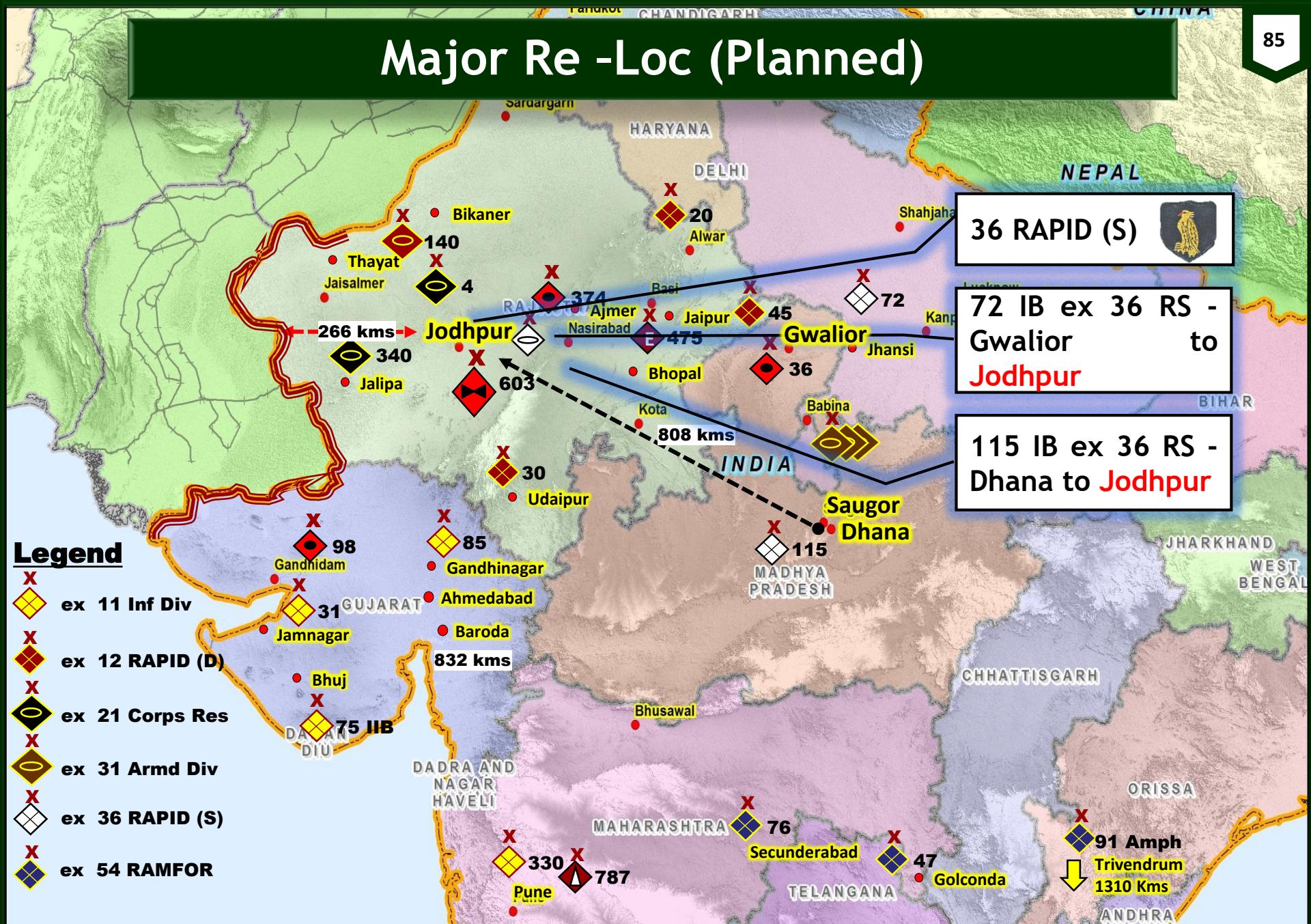
# Major Re -Loc (Completed)

# Arty / Avn

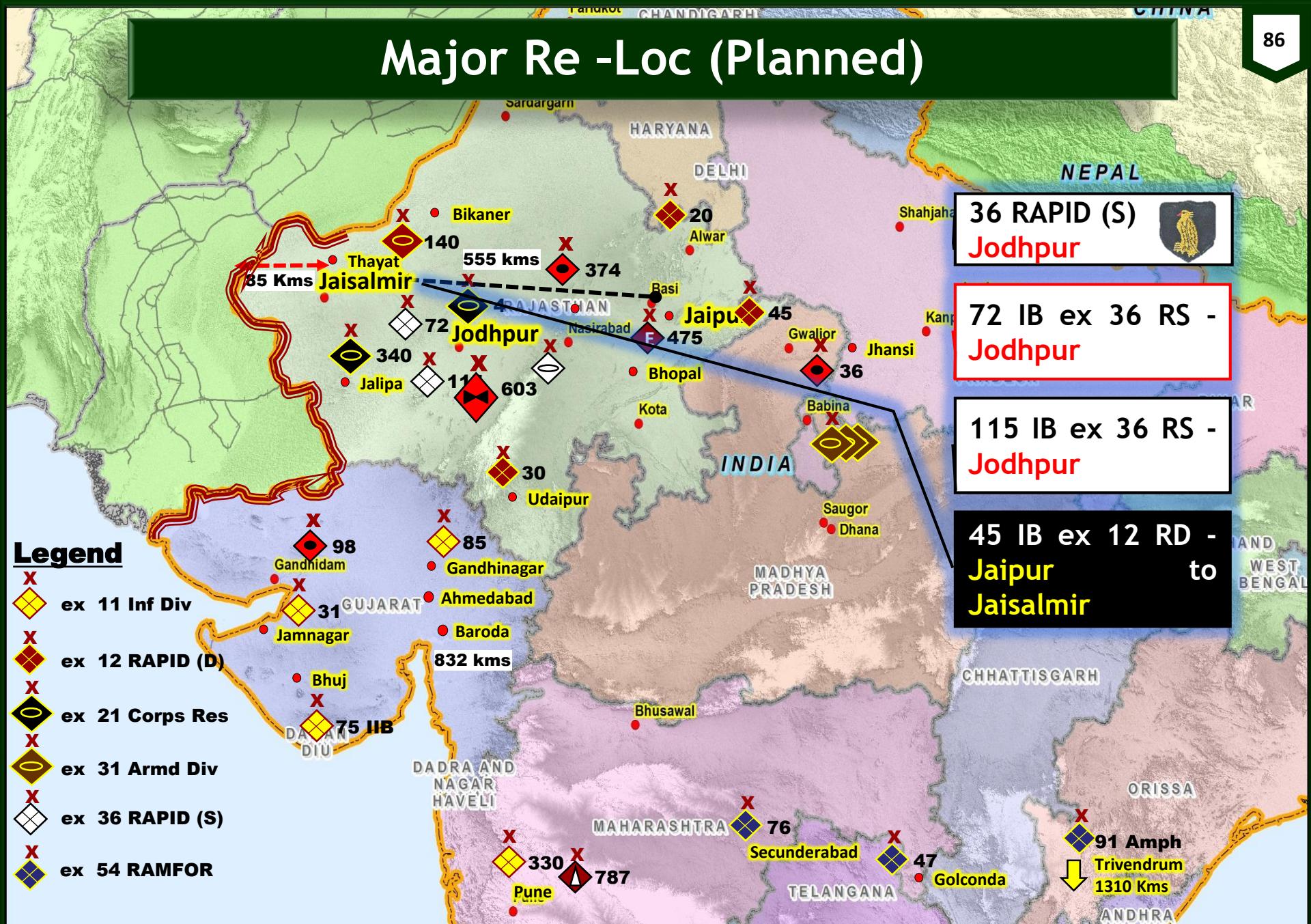


## PLANNED RE -LOC

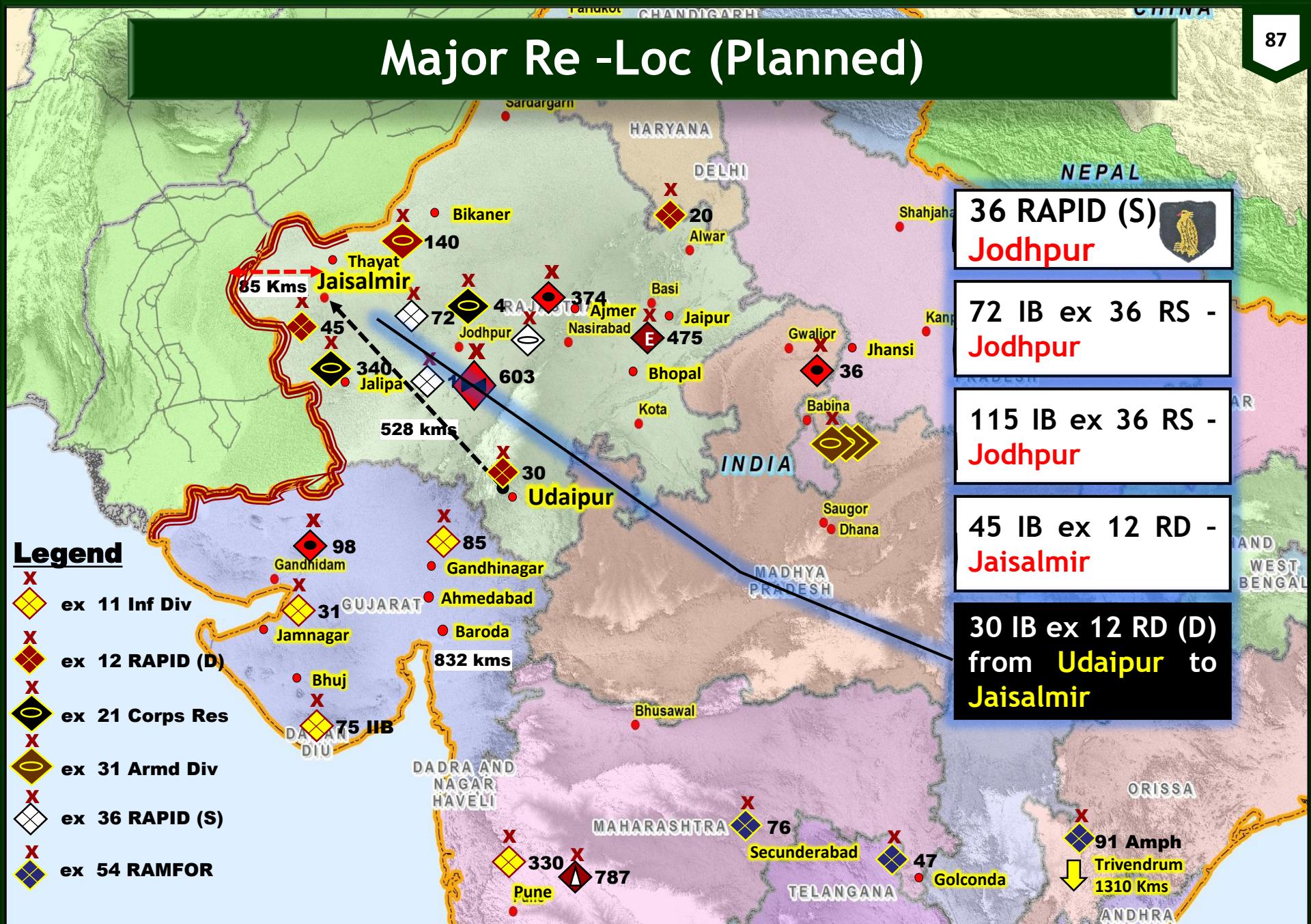
# Major Re -Loc (Planned)



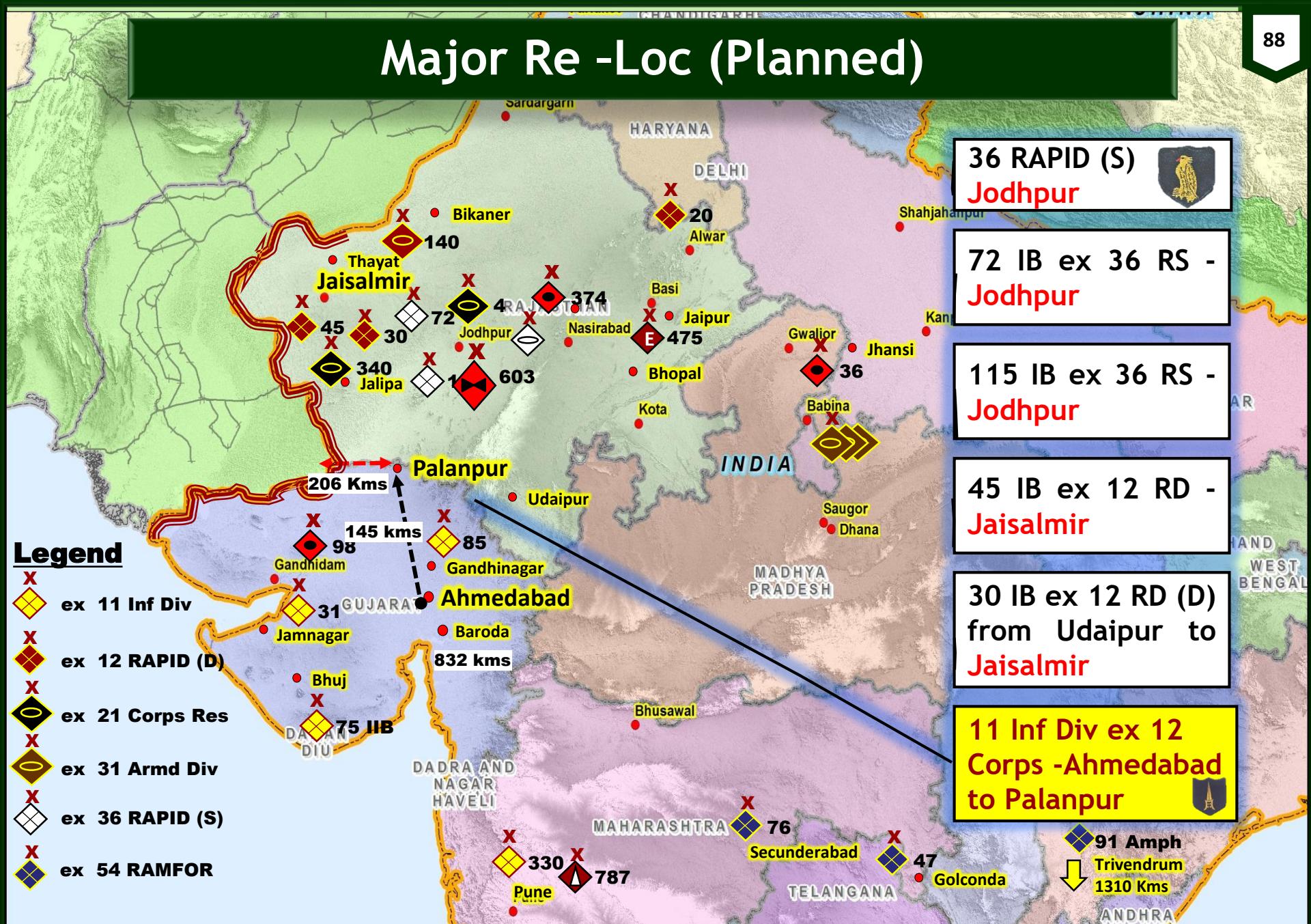
# Major Re -Loc (Planned)



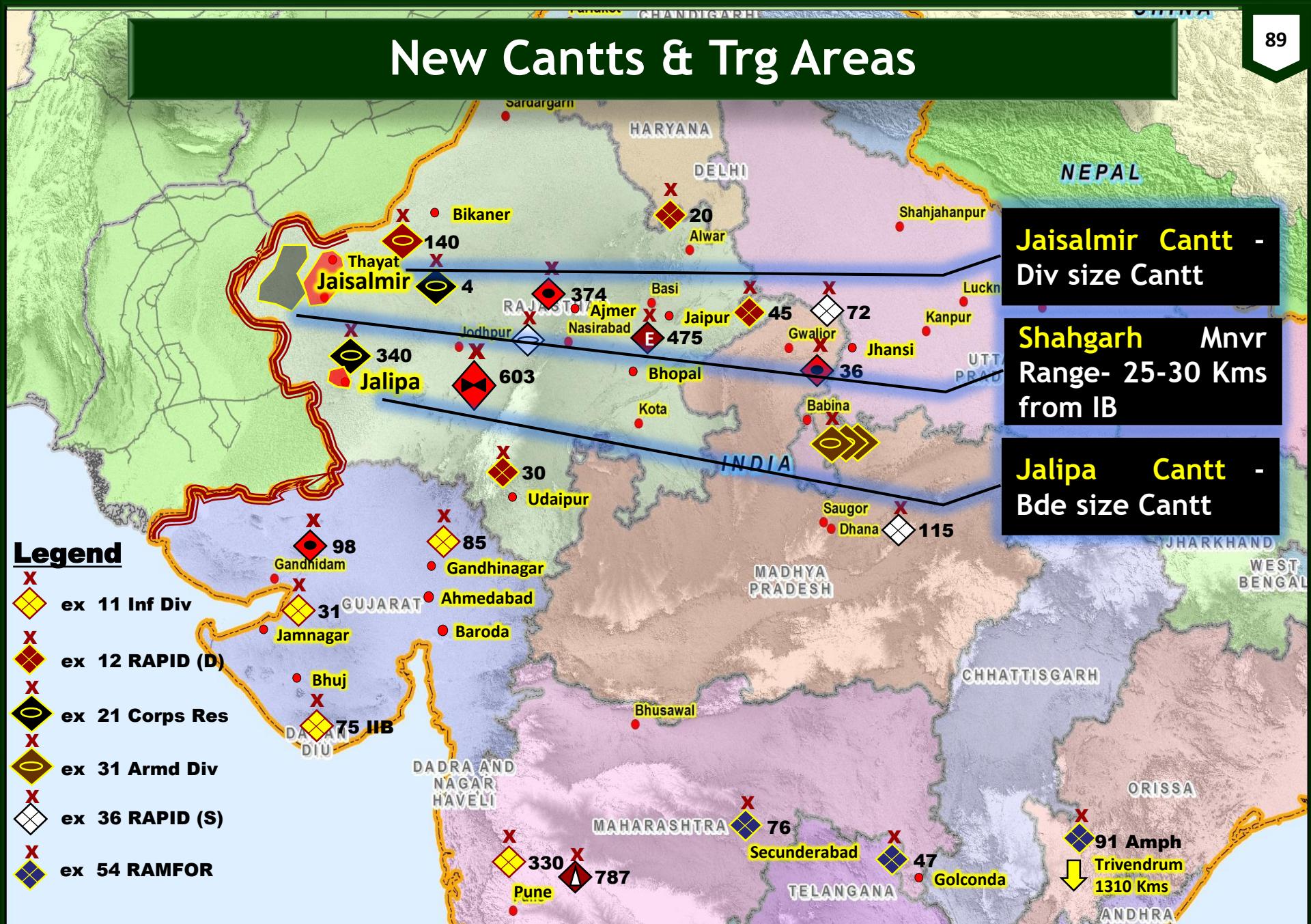
# Major Re -Loc (Planned)



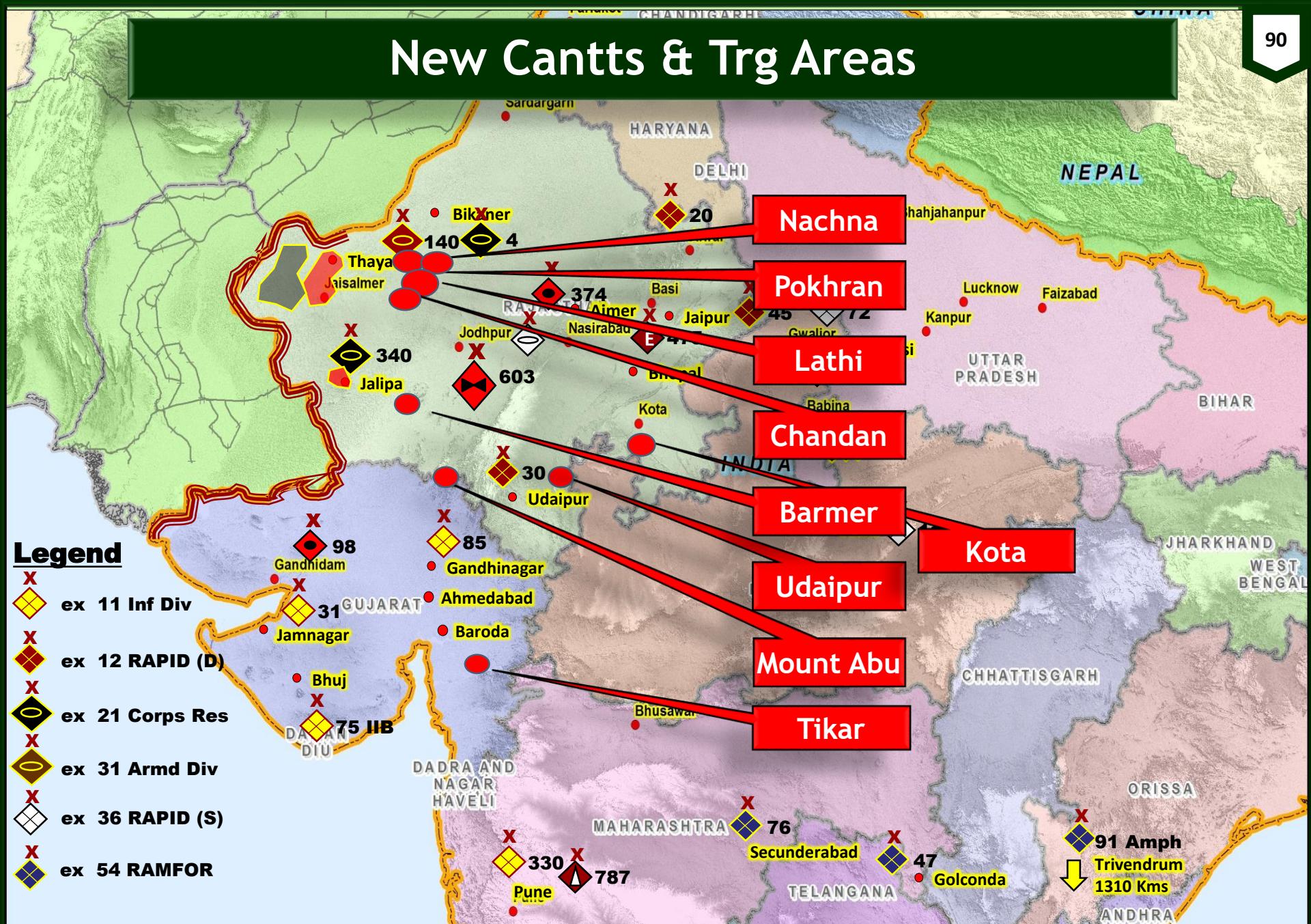
# Major Re -Loc (Planned)



# New Cants & Trg Areas

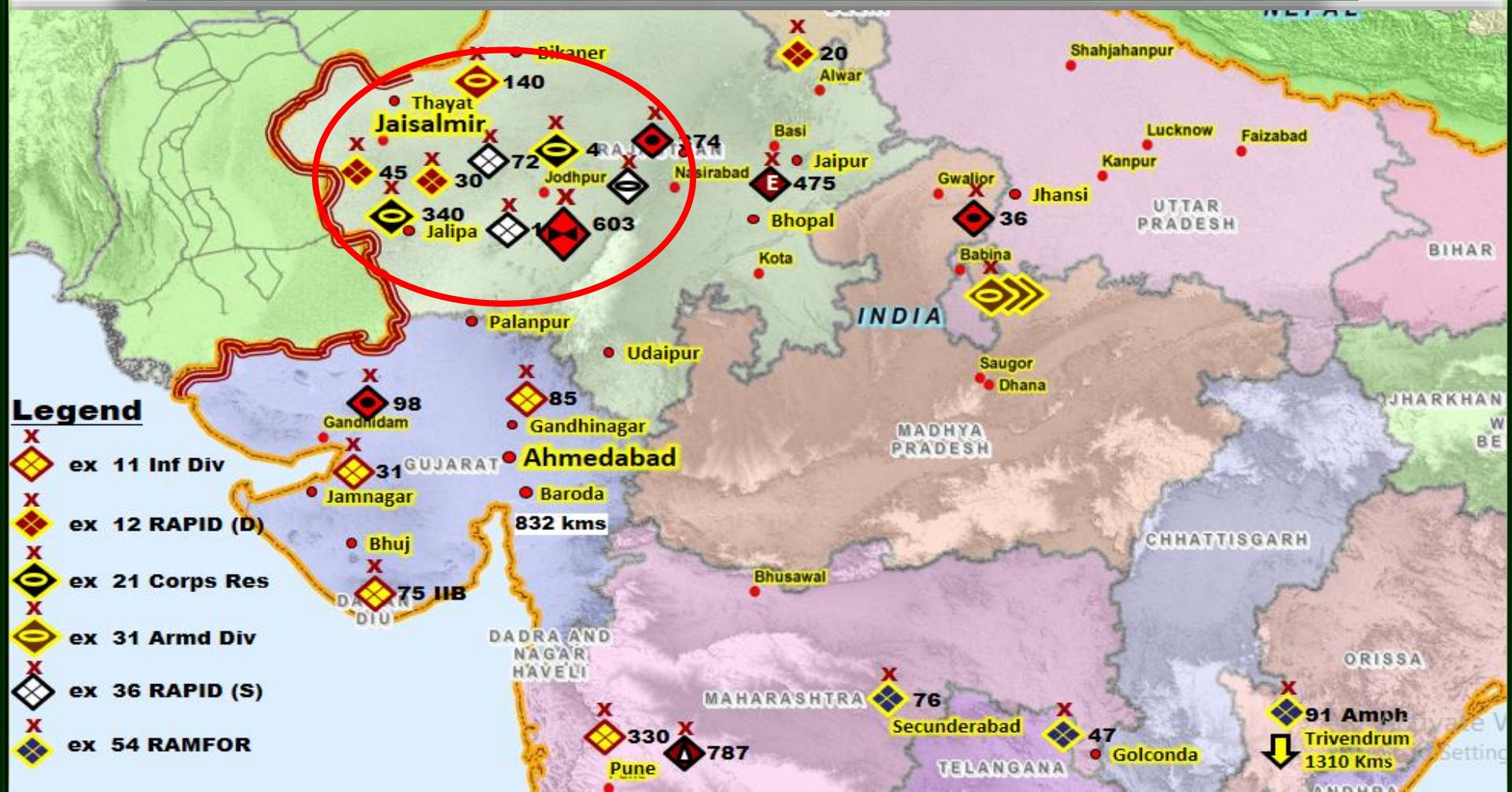


# New Cants & Trg Areas



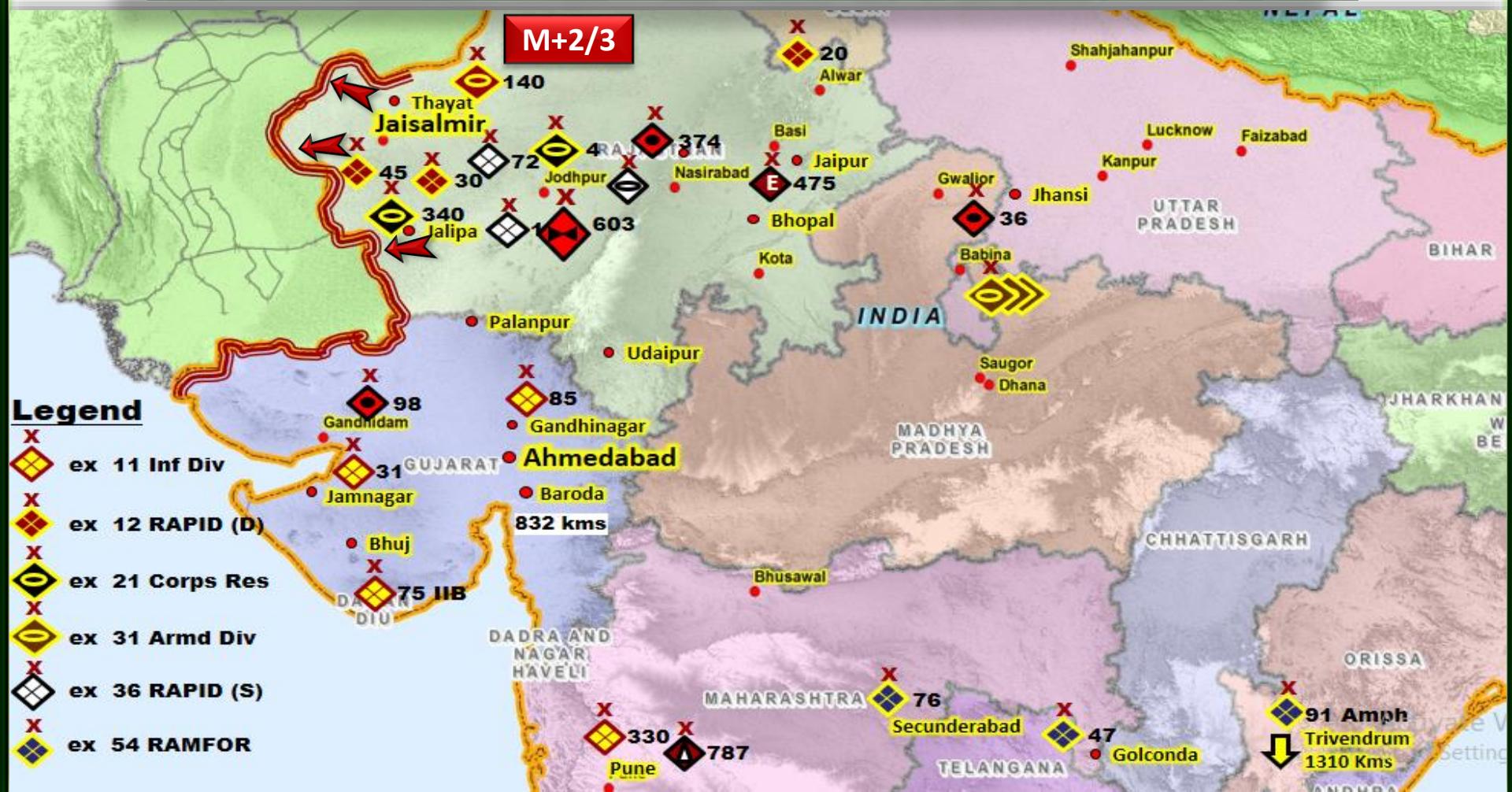
## CONCLS FROM RE-LOC OF FORCES

# Concl from Re -loc of Forces



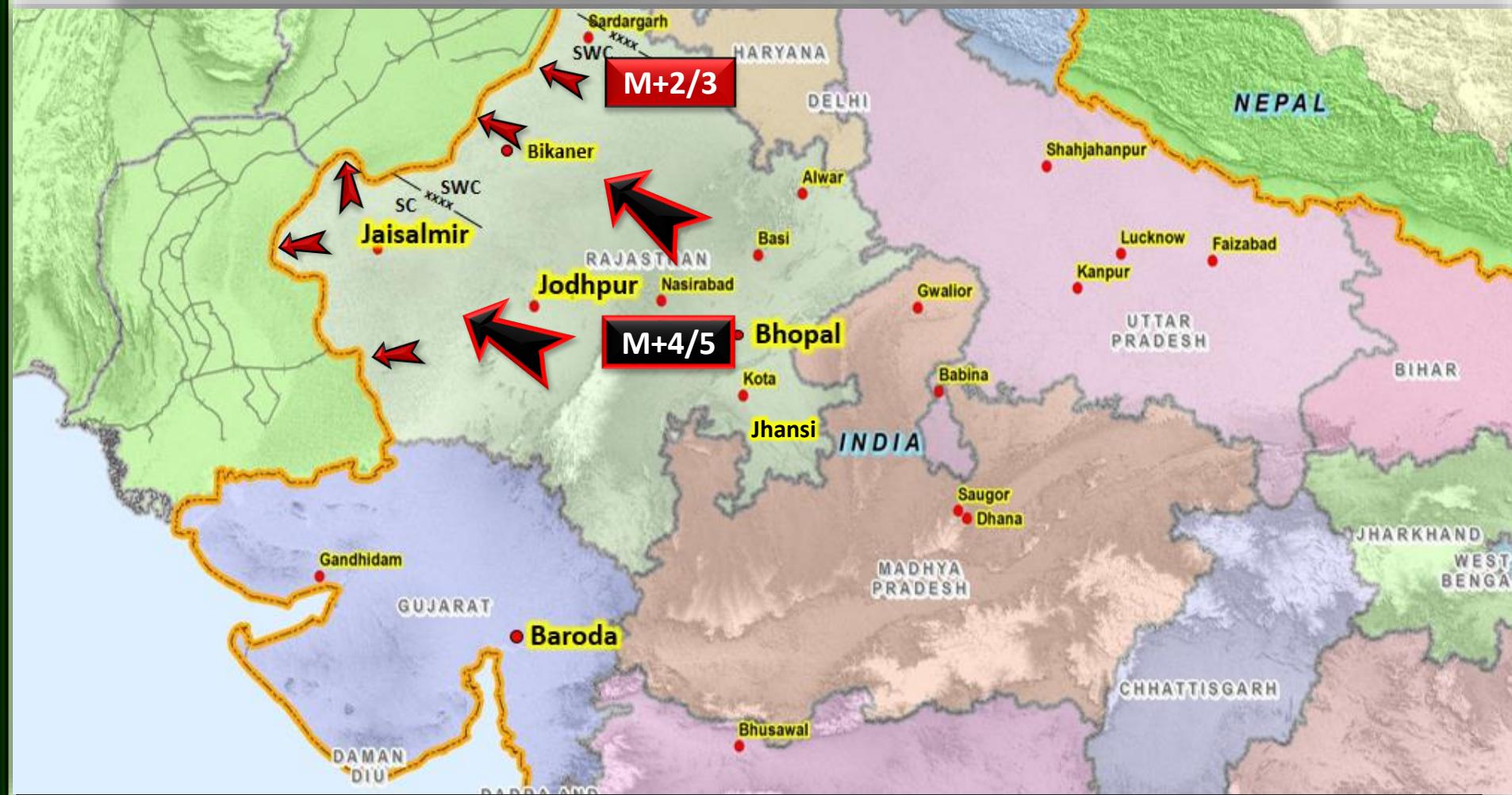
Perpetual state of threat - quick prosecution of limited ground offensive

# Concl from Re -loc of Forces



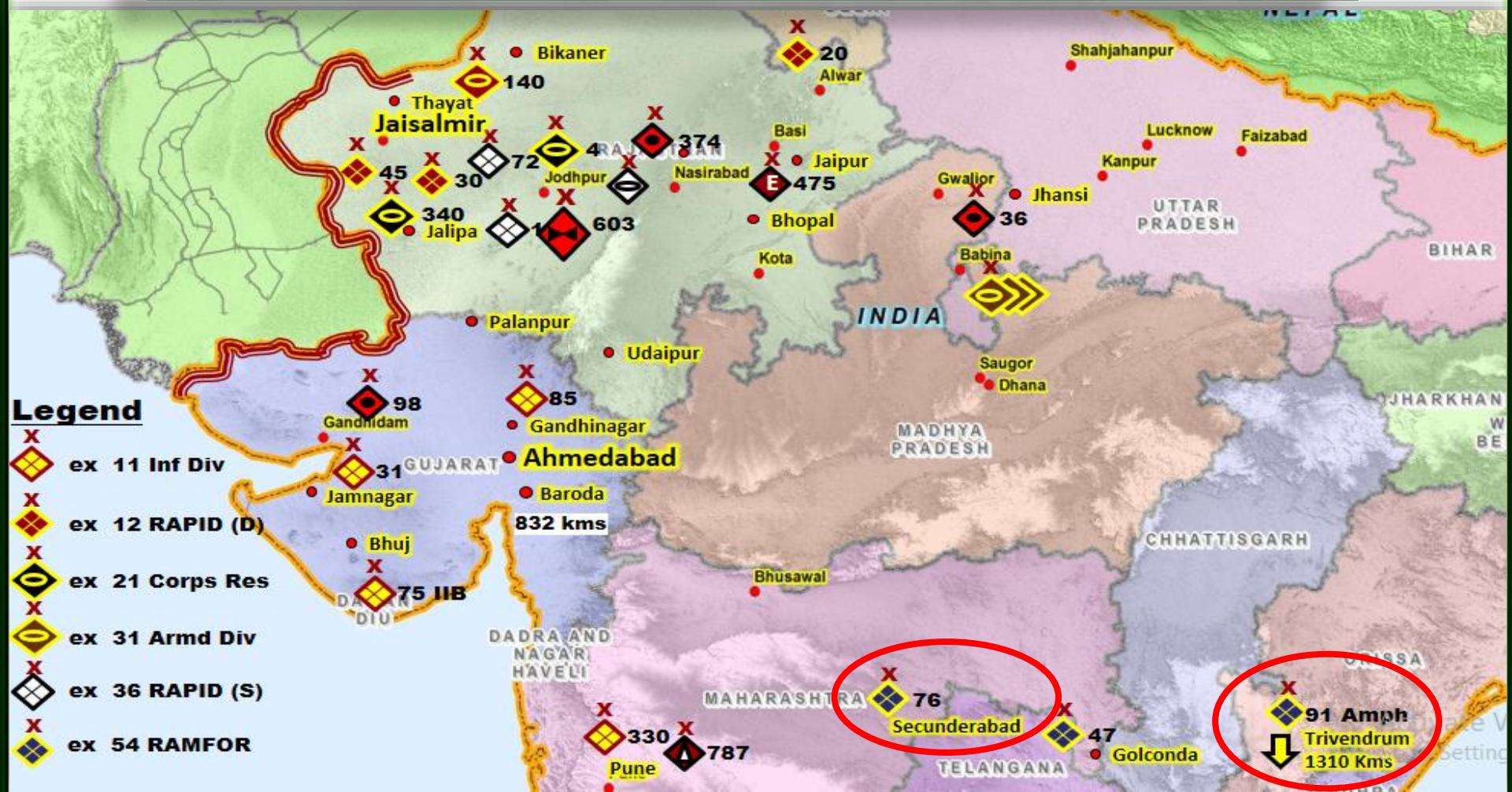
Reduced Time for Application - IBGs. Re - loc of mech component ex IBGs complete; Inf component planned to be re-loc - IBGs can be appl by M+2/3

# Concl from Re -loc of Forces



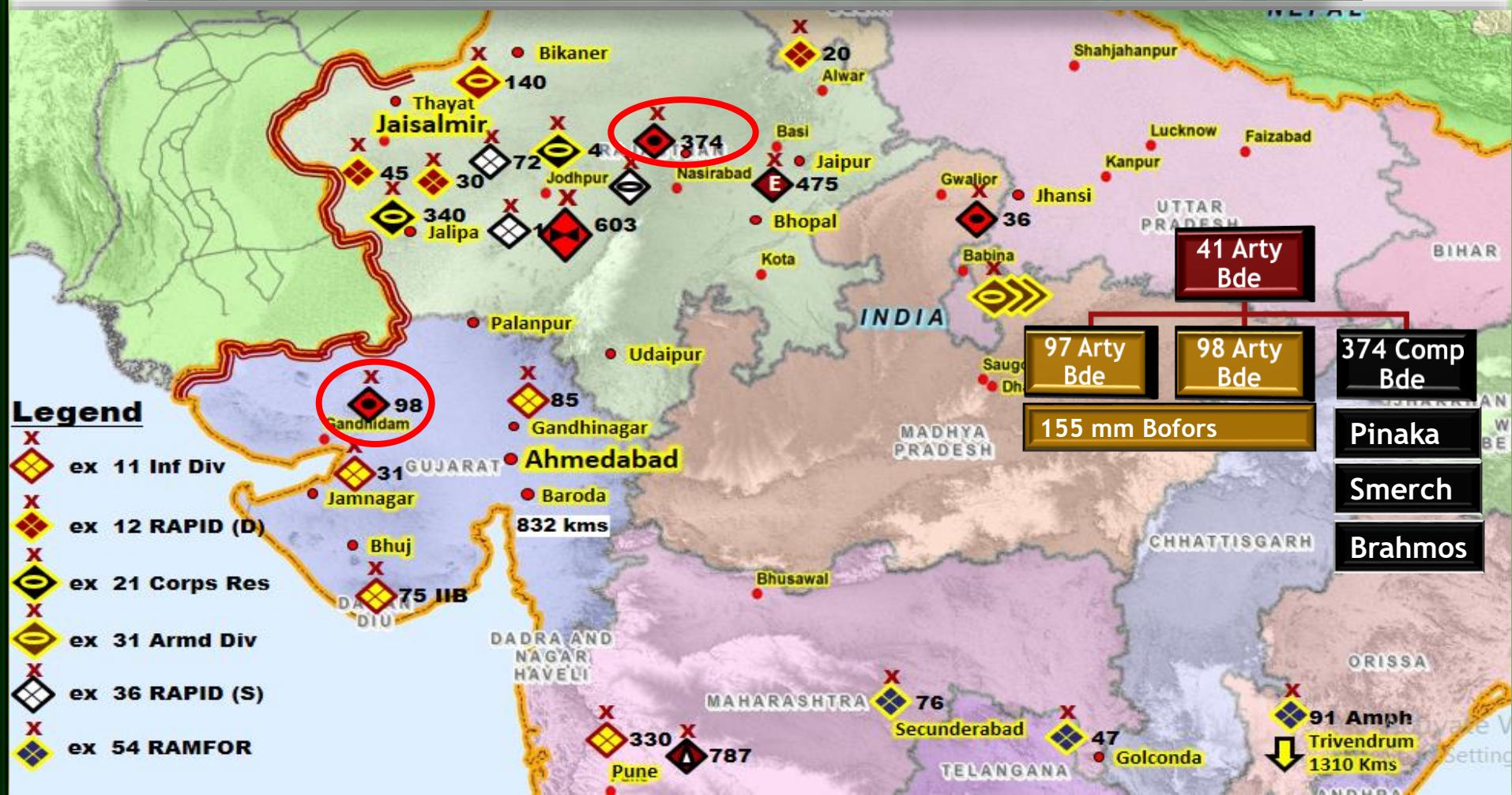
**SC Offn in sync with SWC. IBGs - SC & SWC can be launched simultaneously;  
Staged re-loc of TFRs proj intention of TFR - 3 forces to either sp IBG ops OR  
launch TFR-3 in sync with TFR-2**

# Concl from Re -loc of Forces



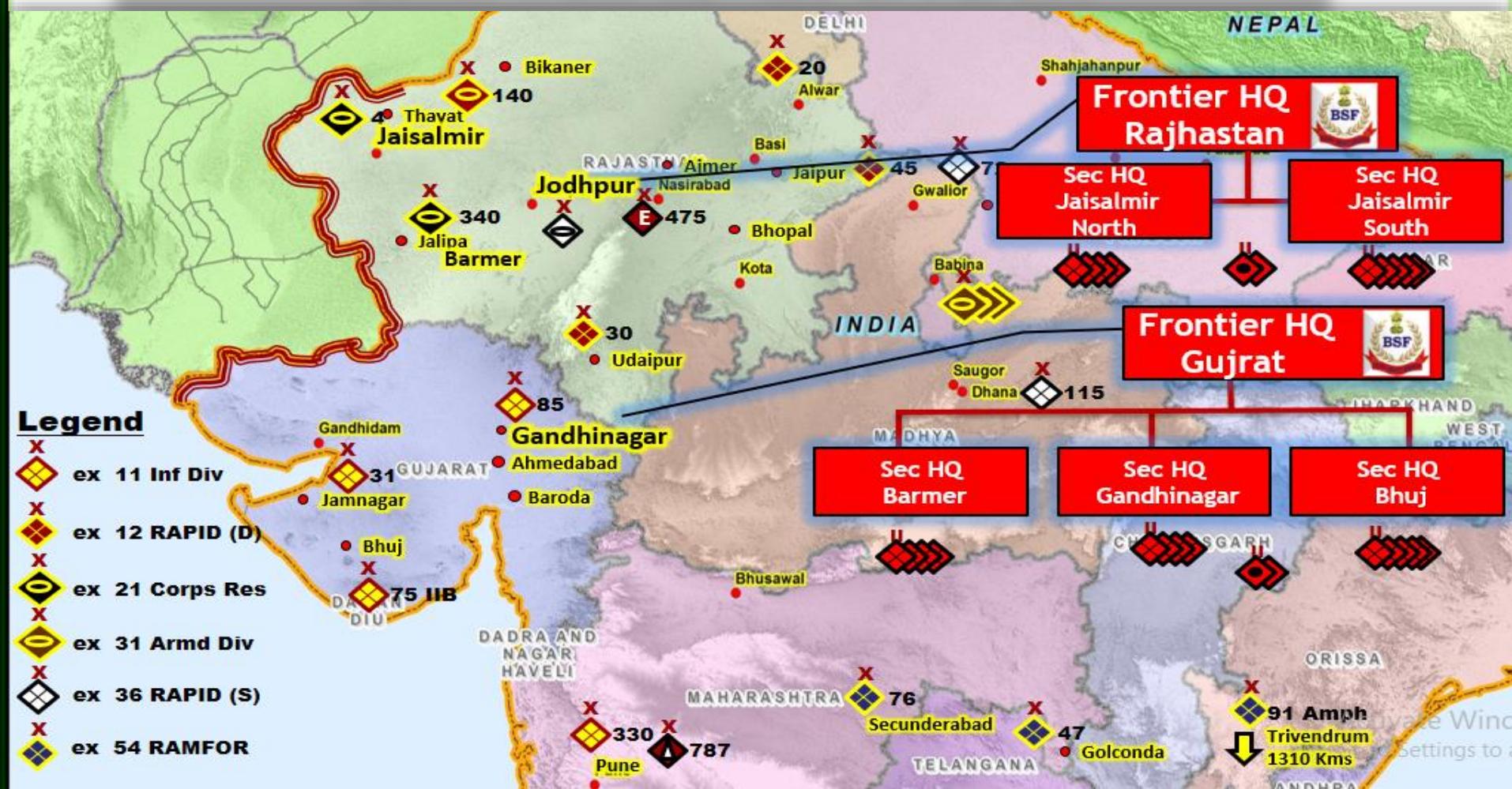
Paucity of Inf. 91 Amph Bde & 76 Air aslt bde ex 54 RAMFOR will create paucity of inf; imposing early shifting of 20 MD ex EC by M+3/4 at Jodhpur

# Concl from Re -loc of Forces



Ensured Early Arty Sp.      Relocation of 98 Arty & 374 Arty Bde ex 41 Arty Div /  
SC will reduce mob differential and ensure arty sp in early launching of gr offn

# Concl from Re -loc of Forces



Enhanced Combat Potential of BSF. Availability of BSF forces in Zone of operation, enable culling of 3-4 Inf Bdes from holding fmns

## IMPLICATIONS ON 5 CORPS OPS

Force  
Comparison

# Concl from Re -loc of Forces



Maint of Compatible Def Safeguards. 5 Corps has to keep more force in Composite Battle Groups (CBGs), Border Security Elements (BSEs) and Core BOPs

# Concl from Re -loc of Forces



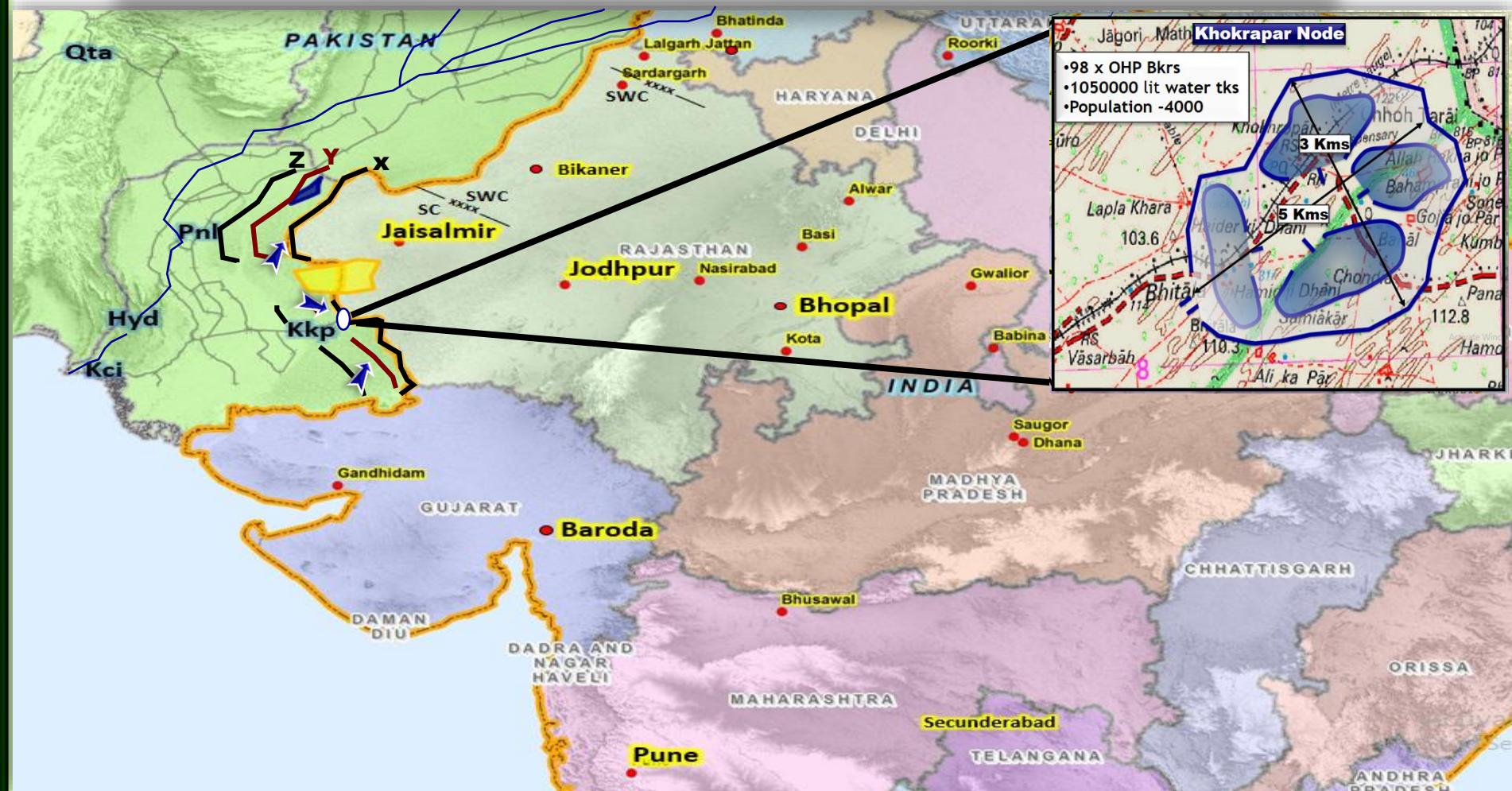
**Timely Mov of Forces.** Pre-positioning of IBG forces close to IB - additional time strain on mov & assy of 5 Corps elems incl de-induction of forces - western border

# Concl from Re -loc of Forces



**Intg CAFs in Def Effort.** 70% of 5 Corps def are occupied by CAFs incl SAMBs, DAMBs, PR (Sindh), PR (Punjab) and FC Baluchistan, both North & South - intg, constant state of readiness & timely mov remains crucial

# Concl from Re -loc of Forces



**Comd & fighting Capacity.** Involvement of multiple CAFs, vast depl area & re-depl of tps compound challenges of comd & fighting capacity - enhance fighting potential through comm arngs , const laterals and familiarization of forces

# Concl from Re -loc of Forces



**Fwd Placement of Bdes ex 25 Mech.** Except 12 AB, all bdes of 25 Mech are placed west of river Indus in Malir- Pre-posn of 1 x AB and 1 x Mech Bde at Sakrand to offset risks

Concl