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DELINEATING ZONES ALONG HIGHWAY CORRIDOR FOR EXAMINING THE LEVEL OF DEVELOPMENT



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INTRODUCTION:

The act of defining and delineating the boundaries of a region can take many forms, from the accumulation of community visions and perceptions, to historical precedence, to data-driven methods based on economic and urban theories. It can be based on the basis of homogeneity, functional activity, fast movement of goods and people.

Before delineating highway corridor zone it is very important to understand that what is highway corridor. Highway corridors are defined as a "strip of land between two termini, over which traffic, topography environment and other characteristics are evaluated for transportation purposes" (Ministry of Transportation and Highways, Planning Department, Thompson/Okanagan Region, 1997). How a corridor is delineated depends on what is being analyzed. "Corridor" plans usually address relatively small sections of highway in a great amount of detail. Highway planning is concerned with Corridor performance at a higher level and uses a length equivalent to a long distance trip taking several hours or more to make.

Methods of Delineating Highway Corridor Zone:

A highway corridor zone has been delineated in Bihar along East-West Highway Corridor. For delineating the methods of National Capital Region Planning Board (NCRPB) has been used.

According to NCR planning board – "A Highway Corridor Zone is proposed with a minimum

width of 500 metres inclusive of green buffer on either side of the right-of-way (ROW) along the National Highway (NH) 1, 2, 8, 10, 24, 58 and 91 converging at Delhi to enable the planned and regulated development along these highways outside the existing controlled/development/regulated areas. Area of the Highway Corridor Zone is 300 sq kms approximately", (Policies for future development: Regional Plan-2021)

East-West Highway corridor which runs from Porbandar (Gujrat) to Silchar (Assam) has a total length of 3,300 km and it has three sub-sections in Bihar- (i) Kuchaikot-Muzaffarpur (159 kms), (ii) Muzaffarpur- Darbhanga- Purnia (310 kms) and (iii) Purnia-Islampur sub-section (48 kms). Out of three sub-sections, we have selected one sub section i.e. Kuchaikot- Muzaffarpur of the East-West Highway Corridor (EWHC) in Bihar which runs from Kuchaikot Block (Gopalganj District) to Gaighat Block (Muzaffarpur District) to make a Highway Corridor Zone. The basic reason behind choosing this sub-section is that out of three sub-sections this section of Bihar has greater potential to become a religious tourist attractions and base of agro based industries and even completed earliest.

Delineating Highway Corridor Zone in Bihar along East West Highway Corridor:

On the basis of National Capital Region Planning Board (NCRPB) we have made three buffers, each buffer of 500 meters along both sides of East-West Highway Corridor in Bihar. First we have selected the villages which falls under the buffer of 500 meters, 1,000 meters and 1,500 meters and digitized their respective boundary. After selecting the villages we have marked villages blockwise and district wise respectively.

Delineation step of Highway Corridor Zone are as follows:

- i) Selecting the method
- ii) Getting the base map of the area
- iii) Digitizing and Georeferencing the base map
- iv) Making required numbers of buffers
- v) Selecting villages and blocks district wise and taking their administrative boundary as the boundary of the zone

After following above mentioned steps we have found that in the first sub-sections of East-West Highway corridor in Bihar 20 blocks and 460 villages falls under the three districts namely Gopalganj, Purba Champaran and Muzaffarpur. Blocks and villages have been divided into three buffers. The name of the villages and the blocks which makes the highway corridor zone with the respective buffers has been mentioned district wise in table 2.2, 2.3 and 2.4 respectively.

Table 2.1: The breakup of the different buffer zones has been given below:

Zone	Buffer Distance (in meter)	No. of Blocks	No. of Villages
1	0- 500	16	279
2	500-1000	14	78
3	1000-1500	19	103

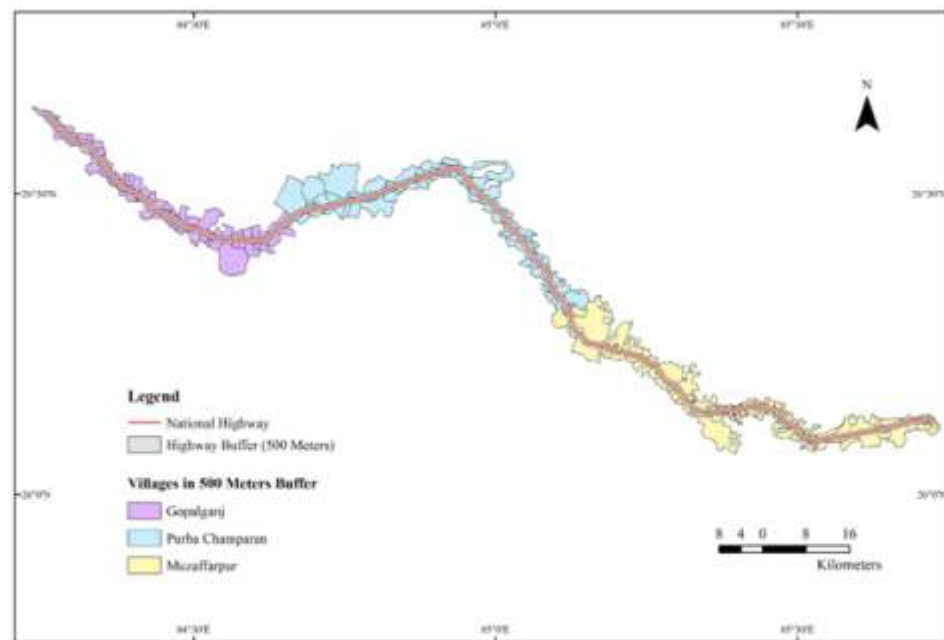


Fig.1: Buffer Zone of 500 meter

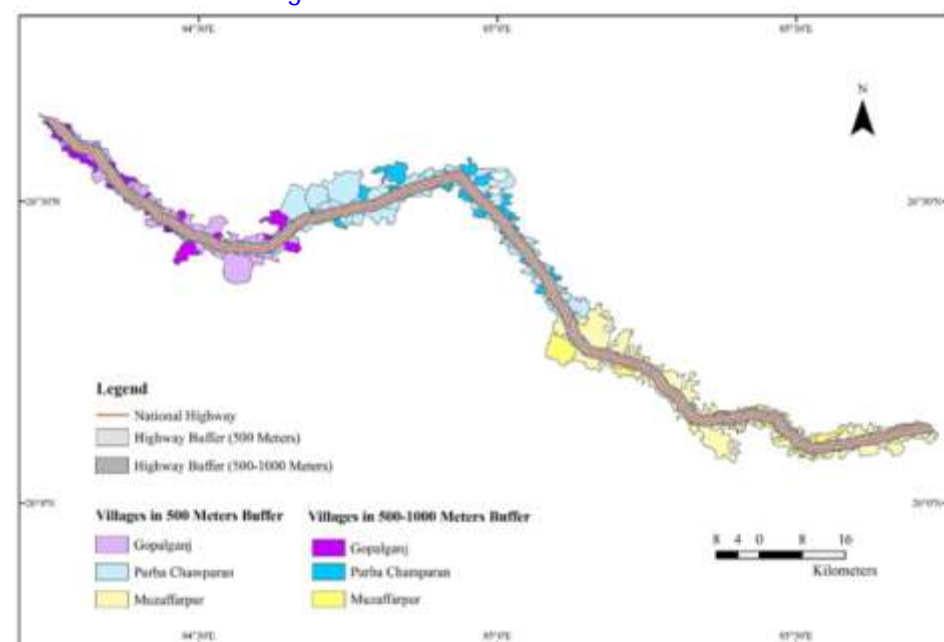
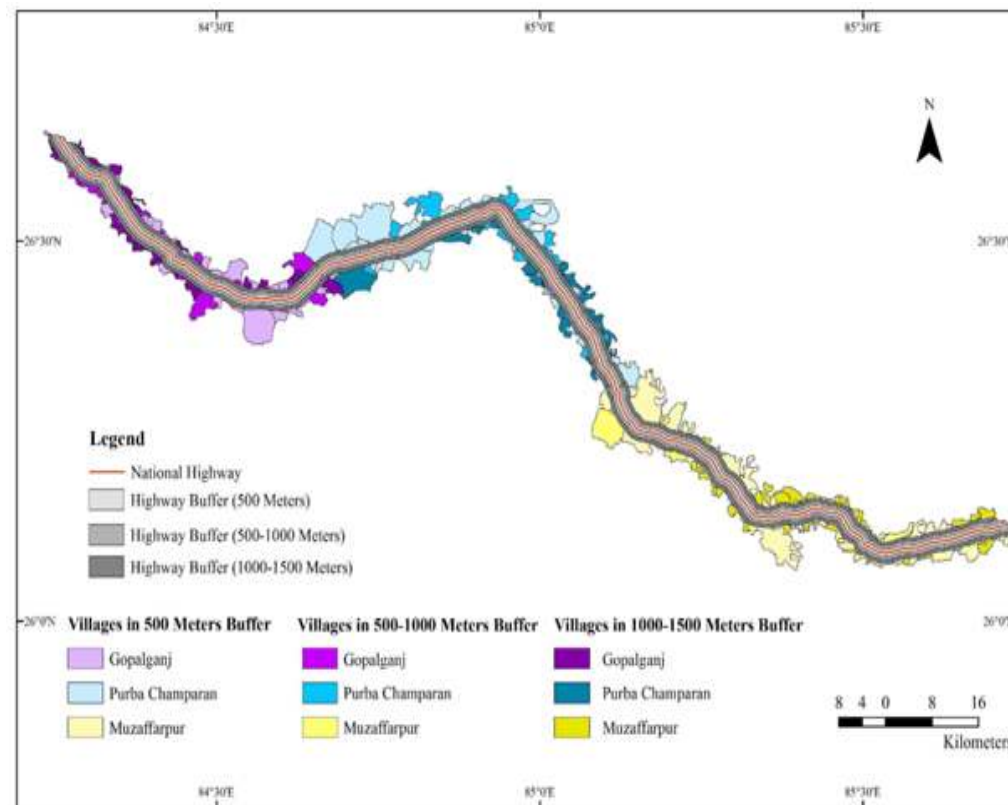


Fig.2: Buffer Zone of 500-1000 meter

DELINEATING ZONES ALONG HIGHWAY CORRIDOR FOR EXAMINING THE LEVEL OF DEVELOPMENT



Buffer Zone of 1000- 1500 meter

Table: 2.1 Blocks and Villages of Gopalganj Districts in Highway Corridor Zone

Block	Zone	No. of Villages	Villages
(i) Kuchai kot	1	35	Narahwa Kot, Narahwa Sukul, Barnaiyan Rajaram, Rampur Babu, Dharhwalia, Pulwaria, Bangra, Bathna, Bhopatpur, Belthari Basmanian, Kuchai Kote, Paharpur Chhangur, Paharpur Deyal, Karmauni Mohabbat, Bhatwa Rup, Bhatwa Parasram, Bindwalia, Bel Banwa, Parsauni Panre, Khajuri, Sasamusa, Pokhar Bhinda, Iswapur Tola Sirsia, Sirsia, Mathia Panre Belwa, Madho Math Rup Chhapar Kawla Chak Chauchakka Bangal Khand Chak Hasna, Harpur
	2	17	Basaunapur, Bamaiya Gokhul, Amwa, Bhubhi Chak, Pokhar Bhinda, Barnaia Bisa, Khairatia, Narayanpur, Uchka Ganw, Chauranw, Baidauli, Hem Bardaha, Banian Chhapra, Bedua, Kaithaulia
	3	13	Tola Palat Ray, Sital Narahwa, Jait Narahwa, Mairwa Karan, Bishunpura, Kamaini Ghazi, Baliwan Sagar, Mahuanwa, Rampur Daud, Jit Bardaha, Maniara, Khan Patti, Mithua
(ii) Gopalganj	1	11	Ekderwa, Bhit Bherwa, Banjari, Chainpatti, Basdila Khas, Basdila Khap, Amwa nakched, Amwa Moazzam, Dumaria, Konhwa, Pasarma
	2	4	Mainpur, Hathipatti, Takiya Yakub, Takiya Bankat
	3	4	Makundia, Turkaha, Mathia, Kukur Bhukka
(iii) Manjha	1	19	Mir Alipur, Doma Hata, Bhojpurwa, Bahora Tola, Chhabahi Khas, Chhabahi Taqi, Jagarnatha, Tola Duldulia, Duldulia, Chhabahi Shikmi, Bhar Kuian, Sirampur Kolhua Pakar, Madhu Sarea, Danapur, Koini, Pathra Tola, Pathra, Jhahwa, Bhainsahi
	2	5	Dewapur Tola Mohar Singh, Dewapur Tola Asaraut, Manjha, Dhama Pakar, Puraina
	3	5	Zafar Tola, Kapilapur, Mathia Umar, Dhankhar, Malikana Dhama
(iv) Barauli	1	16	Balra, Sadaua, Rampur, Pipra, Barhea, Salona, Sonbarsa, Mirzapur, Dewapur, Rupan Chhap, Alapur, Batardeh, Sarar, Bankat, Sarfara, Hasanpur
	2	3	Saraiya Pahari, Parsauni, Salempur
	3	5	Dharwa, Jokaha, Sikatia Sirdhar Sahi, Sikatia Babu Raj Kumar Sahi, Sikatia Sirdhar Sahi
(v) Uchakgaon	1	NIL	N/A
	2	NIL	N/A
	3	2	Kharharwa, Narkatia
(vi) Thawe	1	NIL	N/A
	2	NIL	N/A
	3		Sukulwa Khurd, Sukulwa Kalan, Phataha
(vii) Sidhwalia	1	NIL	N/A

In Gopalganj district, there are total 7 blocks and within these blocks 145 villages comes under the highway corridor zone. Zone first has 83 villages, Zone second has 29 villages and zone three has 33 villages.

In Muzaffarpur district, there are total 6 blocks and within these blocks 194 villages which

comes under the highway corridor zone. Zone first has 117 villages, Zone second has 31 villages and zone three has 46 villages.

In Purba Champaran district, there are total 7 blocks and within these blocks 121 villages which comes under the highway corridor zone. Zone first has 79 villages, Zone second has 18 villages and zone three has 24 villages.

Table: 2.2 Blocks and Villages of Muzaffarpur Districts in Highway Corridor Zone

Block	Zone	No. of Villages	Name of Villages
(i) Baruraj	1	14	Mahual, Birji, Bariarpur urf Bazidpur, Kalyanpur Haraulia, Mursandi, Nariar, Senduari Gaj Singh, Senduari, Ratanpura, Mahamadpur Balmi, Pachrukhi, Kusahi urf Jagdishpur Chamman
	2	1	Baruraj
	3	2	Adalpur urf Abdulpur, Narayanpur Kusai
(ii) Kanti	1	17	Akurahan Khargi, Akurahan Harihar, Madhopur Dulham urf Dhebahan, Sadalpur, Bairia, Dadar Kolhua, Paighambarpur Kolhua, Suratpur, Lashkaripur, Chhapra Dharampur Jadu, Bariarpur, Narsanda, Narsanda, Dhamauli Ramnath
	2	3	Birpur, Madhuban, Jagdish
	3	11	Ghausi Chhapra, Bheriahi Narayan, Basantpur Kanti, Sirna urf Bheriahi, Ratanpura, Rampur Lakhmi, Pach Pakri, Barmatpur, Chak Murmur, Mithan Sarai, Shahbazpur
(iii) Minapur	1	5	Pakhnaha Shiuram, Kharika urf Bhalaipur, Panapur, Piprahan Asli, Puraina
	2	1	Parshad
	3	3	Bhelaipur Dhani, Mursandi Ratan, Ramtobahan urf BishunpurMohan
(iv) Bochacha	1	36	Karanpur, Bhagwanpur, Muradpur Bharath, Gidha urf Maisaha Farrukhpur, Mirzapur, Hamidpur, Patiasa, Husainpur, Bishunpur Man, Chak urf ChakAbdul Rahman, Burhnagara, Adi Gopalpur, Raghunathpur Gurguja, Dahi Ban, Raghonpur Majhau, Konhara Hardas, Konhara Ragho, Majhau Jagai, Bazidpur Majhau, Bazidpur urf Majhau, Rahsi, Etwarpur Taj, Kasipur urf Rampur, Mandahpur, Etwarpur Jointi, Sharfuddinpur, Pirakhpur, Chak Helal, Mirzapur
	2	11	Raje Rup, Halim Chak, Adam Chhapra, Chak Habibullah urf ChakBullah, Raghopatti, Bera Hardas, Bahrapur, Shahpur, Gopalpur Gopal, Salha, Parannathpur Dumri
	3	15	Khalikpur, Senghau, Chaupar Madan, Yusufpatti, Sadullahpur, Chak Mundi, Mohiuddinpur, Serwani Chak urf Bhagwan, Radha, Bahloipur, Tambolia, Misraulia, Bhusahi, Bazidpur, Chak Balthi
(v) Gaighat		21	Majithi urf Basatpur Majithi, Berwa urf Ibrahimpur Pirahari, Bahadurpur, Dhubauli Sube, Arazi Pirhari, Jarang, TarukTolia urf JagdishpurBarua, Keotas urf Keotsa, Maheshwara Dakhli, Shakarwara Nur, Shakarwara Sabik, Kanta Pirauchha, Makrandpur urf Makrampur, Bihari urf Bhatgawan, Ramauli, Baruari urf Jagdishpur Baruari, Thika Pahi, Subas Kunaimai SubasGangwasubas, Subas Kesho
		6	Kothia urf Madhaul, Bela Gopi, Tejauli Buzurg, Chak Balua, Ram Patti, Mahwara
		8	Raila Narayan, Dhubauli Lakhmi, Harkhau, Maheshwara, Misrauli, Raghonpur, Belaur Nidhi urf BelaurThana, Madhura Patti urf Manorathpatti
(vi) Mushari		24	Fatehpur, Shahbazpur urf Salempur, Rasulpur Saiyad Salem, Shahbazpur Salem, Chak Ghazi, Muradpur Dullah, Bhagwatipur, Damodarpur, Bara Jagamath, Raghonpur, Saraiya Sadullahpur, SaraiyaChakMustafa urfSipapur, Harpur Bakhri, Hasan Chak, Baijnathpur, Tarwan, Abdulnagar urf Madhopur,

Table: 2.3 Blocks and Villages of Purba Champaran Districts in Highway Corridor Zone

(i) Sangrampur	1	Bariariya, Sangrampur, Man Tola, Jalaha, Shampur, Madhubani, Mathia, Bhatauliya, Nautan, Barwa, Sikandarpur, Puchhariya, Gopalpur, Bariariya Tola Rajpur
	2	Chandpur, Misir Tola
	3	Bhawanipur
(ii) Kalyanpur	1	Mani Chhapra, Manse Chhapra
	2	NIL
	3	Bhuan Chhapra
(iii) Kotwa	1	Ratanpur, Bathna, Mathurapur Math Gopal, Kotwa, Mahmada, Talwa, Talwa Pokhar, Dipau, Pokhra, Jasauli, Sirsia, Kanth Chapra, Bankatwa, Dumra
	2	Barharwa Kalan, Ahirauliya
	3	Barwa Kanth Chhapra, Maharani Bhopat
(iv) Piprakothi	1	Madhu Chhapra, Panditpur, Bir Chhapra, Chand Saraia, Panwaliya, Jhakra
	2	Pipra Kothi
	3	NIL
(v) Chakia (Pipra)	1	Chintamanpur, Ramgarh, Nauzamin, Ramgarh Mahuawa, Mahuawa, Harpur, Phulwaria, Hardiyabad, Jahingara, Madhuban Bediban, Pipra, Damodarpur, Kunria, Mahuawa, Madhuchhapra, Chak Bara, Parsauni Khem, Semra, Baramdia, Baisaha, Tarniya Halim Nagar
	2	Jamunia, Kunarpur, Bangri, Sirsia, Sita Kund, Chaknia, Koir Gawan, Balwa, Chak Bara Tola Birta, Nankar Parsauni Khem, Chakia
	3	Kundia, Phulwaria Pasrampur, Dhobauliya, Bishunpura, Ghansham Pakri, Birt Pakri Gopal, Birt Parsauni Khem, Math Parmeshwar, Ballo Chak, Kunawa
(vi) Mehsi	1	Rangrez Chhapra, Saraiya Banwari, Harpurnag, Harpur Nankar, Damodarpur, Sulsabad, Suleman Chhapra, Dharhgawan, Mojahida, Kasba Gopal, Bathna, Parsauni Dewajit, Rajua Bakhri, Bakhri Nazir, Chak Rauze Shamshuddin, Chak Saiyad Mahmud, Chak Fatehullah, Chak Rasul, Chak Lahuran, Kothia Hariram
	2	Rampurwa, Bishambharpur Pahari
	3	Ojhilpur, Mahuabad, Bhatauliya, Saray Kasim, Chak Ghariyali, Dewajitpur
(vii) Madhuban	1	NIL
	2	NIL
	3	Maripur Mal, Khodalpur

Indicators for Development:

For examining level of development we have taken total 10 indicators from table HH-14: Percentage of Households to Total Households by Amenities and Assets. The indicators are given

below:

- 1) Livable houses,
- 2) Material of Roof,
- 3) Material of Wall,
- 4) Number of Dwelling Rooms,
- 5) Ownership status, Main Source of Drinking Water,
- 6) Location of drinking water source,
- 7) Main Source of lighting,
- 8) Number of households having latrine facility within the premises,
- 9) Type of Fuel used for Cooking, Kitchen facility,
- 10) Households with TV, Computer/Laptop, Telephone/mobile phone and Scooter/ Car,

After selecting the indicators, the data of all the indicators has been processed with Standard deviation technique then a composite index of all data were made.

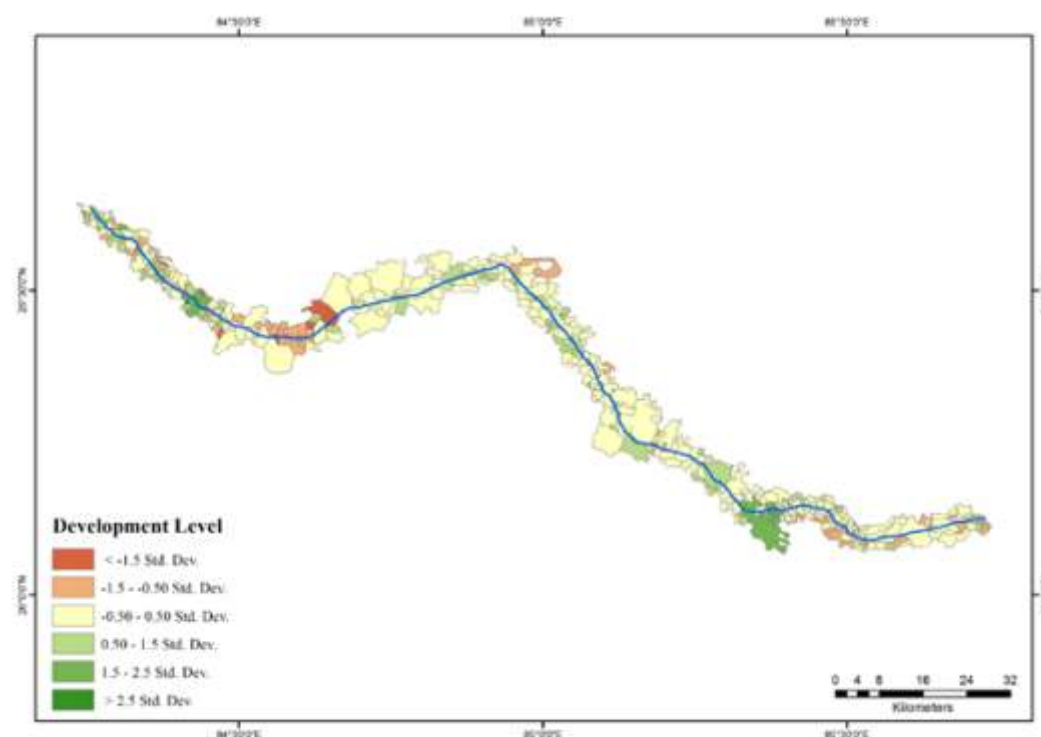


Fig.4: Status of Household structure and Amenities in Highway Corridor Zone

CONCLUSION:

It has been noted that the level of development has a pattern that high standard deviation lies near the highways corridor, especially when they have a close proximity to the urban area. As we move away from the highway corridor and urban area the values of standard deviation decreases. So a conclusion can be made that highway is the precondition to bring progress and development, but mere highway cannot bring development, there must be some other factors which acts like a catalyst for example- presence or/and proximity of urban area, industrial belt, educational belt.

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