Title: Development Verses Displacement: Cornerstone of India's Economy; Appraisal on Road Development In India

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ABSTRACT:

India is a developing country and it requires fast space quality infrastructure development, which is the need of current times. For any development, land is required and the land belongs to the people. Government is acquiring land for public purpose. Government of India (GoI) has substantially increased its focus towards infrastructure development, over the last few decades which lead to economic growth of the country. Acquisition of land for public purpose displaces people, forcing them to give up their home, assets and means of livelihood. The GoI recognizes the need to minimize large scale displacement to the extent possible and, where displacement is inevitable, the need to handle with utmost care and forethought issues relating to Resettlement and Rehabilitation (R&R) of Project Affected Families (PAF) and formulate R&R Policies (NRRP 2007 and draft bill 2011. The ground reality differs from it.

Road network is vital to the economic development, trade and social integration. It facilitates smooth conveyance of both people and goods. Size of the road network, its quality and access has a bearing on transport costs. Besides, road network promote specialization, extend markets and thereby enable exploitation of the economies of scale. Global competition has made the existence of efficient road transport and logistic systems in delivery chain an absolute imperative. Easy accessibility, flexibility of operations, door-to-door service and reliability have earned road transport an increasingly higher share of both passenger and freight traffic visà-vis other transport modes. Transport demand in India has been growing rapidly. In recent years this demand has shifted mainly to the advantage of road transport, which carries about 87 percent and 61 per cent of passenger and freight transport demand arising for land based modes of transport (i.e. roadways and railways taken together) respectively. Road transport has grown despite significant barriers to inter- State freight and passenger movement compared to inland waterways, railways and air which do not face rigorous en-route checks/barriers.

The total road length in India had increased significantly from 3.99 lakh Kilometre (Km) as on 31st March 1951 to 41.10 lakh Km as on 31st March 2008. Concomitantly, the surfaced road had increased from 1.57 lakh Km to around 20.36 lakh Km over the same period. The total road length had expanded significantly since 1970s. It increased from 9.15 lakh Km in March 1971 to 41.10 lakh Km in March 2008 - an increase of 34.9 % over these 37 years yielding a compound annual growth rate (CAGR) of 4.1 %. The total road network in the country grew from 36.21 lakh in March 2004 to 41.10 lakh in March 2008 reflecting an increase of 4.89 lakh Km yielding a CAGR of 3.2 % over this period.

Available reports indicate that around 21.3 million people are internally displaced populations (IDPs) due to development projects in India. IDPs include those displaced by dams (16.4 million), mines (2.55 million), industrial development (1.25 million) and wildlife sanctuaries and national parks (0.6 million) etc (IDMC, 2007). 21% of total shares transport and communication sector development. This paper appraises the displacement due to road infrastructure development in India's boom economy over the period.

A. DEVELOPMENT :

A preliminary assessment of Five Year Plan (FYP) of Planning Commission suggests that investment in infrastructure during the Twelfth Plan (2012- 17) would need to be of the order of about Rs. 40, 99, 240 crore (US $ 1025 billion) to achieve a share of 9.95 per cent as a proportion of Gross Domestic Product (GDP). This would have to be a key priority area in the Twelfth Plan in order to sustain and support the targeted growth.

Based on the Eleventh Five Year Plan (2007-12), the Planning Commission has assessed the investment in infrastructure is Rs. 20, 54, 205 crore. The investment in infrastructure was likely to rise from 5.15 per cent of GDP during the Tenth Plan to about 7.55 per cent during the Eleventh Plan, as against a target of 7.60 per cent. This constitutes a significant shift in favour of investment in infrastructure. Except in some sectors, the overall performance of infrastructure during the Eleventh Plan compares well with the initial targets after accounting for the impact of the global financial crisis.

The projected investment in road sector was also significantly lower at Rs. 2, 78, 658 crore compared with Rs. 3, 14, 152 crore in the original projections in eleventh plan. The investment by the Centre is expected to decline due to award of lower than projected road projects by National Highways Authority of India (NHAI) during the first three years of the Plan. The investment by the private sector is also expected to go down due to award of a lower number of projects in the first three years of the Eleventh Plan. However, Ministry of Transport has decided to speed up the award and implementation of National Highways Development Project (NHDP) to achieve a completion rate of 20 kms of highways per day. The less investment from private sector was subject to mainly downfall of economy in global market as well as several risk factors has involved in Indian context. One of the major hindrances is land acquisition and displacement.

1. PHYSICAL GROWTH IN ROAD DEVELOPMENT:

The total surfaced road length grew from 3, 97,948 km (accounting for 43.5% of the total road length) in 1971 to 20,36,063 km (accounting for 49.5 % of the total road length) in 2008 reflecting a more than fivefold increase in surfaced road length. Category wise classification of road length showed that during this period, the length of National Highways (NHs) increased from 23, 838 km to 70,934 km – an increase of over CAGR of 2.8 %. During the same period, the length of State Highways (SHs) increased from 56,765 km to 1,54,522 km (an increase of over CAGR of 2.7 %) and the length of other Public Works Department (PWD) roads increased from 2,76,833 km in 1971 to 8,63,241 km in 2008 (an increase of about CAGR of 3.1 %). Various categories of Urban roads together expanded in length from 72,120 km to 3,04,327 km reflecting an increase of over CAGR of 3.97 %. The highest growth over these 40 years took place in respect of Rural Roads which increased from 3,54,530 km to 24,50,559 km (including 10,61,809 lakh km roads constructed under different schemes registering an increase of nearly CAGR of 5.4 %. The lowest growth, however, took place in the length of Project roads which increased from 1,30,893 km in March 1971 to 2,70,189 km by March 2008 resulting in a growth of CAGR of 1.98 % only. Table 1 depicts the facts of it.

Table 1: Total Road Network in India

		Surfaced Road Length by			Categories in India		
	Total (T)/ Surfaced (S)	2000	2004	2005	2006	2007	2008
Length in Kilometre (as on March 31)							
National Highways	T	52010	65569	65569	66590	66590	667543
	S	51952	65358	65358	66590	66590	66754
State Highways	T	132797	133177	144396	148090	152235	154522
	S	130592	131262	142898	146325	150713	152738

		Surfaced Road Length by			Categories in India		
	Total (T)/ Surfaced (S)	2000	2004	2005	2006	2007	2008
Other PWD Roads	T	730680	719257	786230	803669	835003	863241
	S	601512	597866	643705	664652	689935	719383
Rural Roads *	T	1948043	2140569	2266439	2308125	2393488	2450559
	S	545378	678533	681761	714326	761429	810258
Other Roads **	T	462235	562935	546522	554177	569085	574516
	S	244366	287749	261576	266791	276091	286930
All India	T	3325765	3621507	3929439	4003930	4140544	4109592
	S	1573800	1760768	1846629	1910792	1997323	2036063

** Rural Roads include Panchayat Raj roads and roads constructed under Jawahar Rozgar Yojana (JRY) as of 31.3.1996 & Roads constructed under Pradhan Mantri Gram Sadak Yojana (PMGSY) since 2000.*
*** Other Roads include Urban Roads and Project Roads.*
 # As on 31.3.2010, the total road length under National Highways is 70,934 km.

Source: NHAI

Government has envisaged huge investment for construction and upgradation of National Highways under various phases of NHDP over the medium term. Details of various phases of NHDP (Fig 1) are as under:

NHDP Phase-I: This phase was approved in December 2000. It envisaged - (a) Four laning of National Highways comprising Golden Quadrilateral (GQ) linking major metros, viz. Delhi, Mumbai, Chennai & Kolkata having an aggregate length of 5846 km; (b) North-South and East-West corridors covering 981 km; (c) Port connectivity by upgrading 356 km of NHs linking major ports in the country and; (d) upgradation of 315 km of other National Highways. The total aggregate length of NHs for upgradation envisaged under Phase I was placed at 7498 km. The total length completed upto 31st March 2010 was 7328 km.

NHDP Phase-II: This phase was approved in December 2003. The main thrust of this phase involved upgradation (4 laning) of (a) North-South (Srinagar to Kanyakumari) & East-West (Silchar to Porbandar) corridors covering a distance of 6161 km and; (b) upgradation of 486 km stretch of other National Highways. The total length coverage for upgradation under Phase - II involved 6647 km out of which 4465 km has been completed by 31st March 2010.

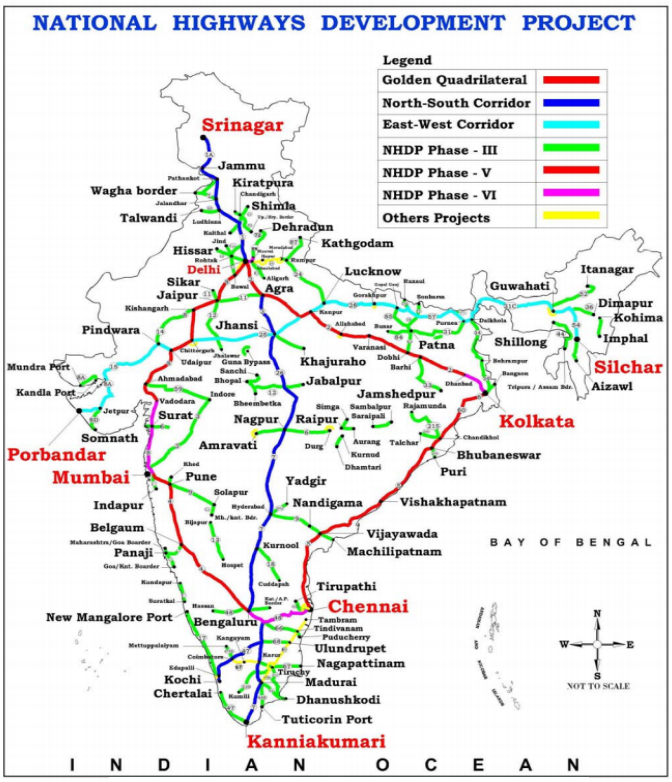


Fig 1: NHDP Roads

NHDP Phase-III: NHDP Phase-III involves 4-laning of 12,109 km of high-density stretches of NHs connecting State capitals, important tourist places and places of economic importance through Public Private Partnership (PPP) basis. Out of this, implementation of 4815 km on BOT was approved under NHDP Phase IIIA. NHDP Phase IIIB involving implementation of the balance 7294 km was approved in April 2007. Till 31st March 2010, 1581 km of road length had been completed.

NHDP Phase-IV: This phase involved improvement of 20,000 km of NHs to two lanes with paved shoulders.

NHDP Phase-V: This phase was approved for six laning of 6,500 km of existing 4 lane highways in October 2006 on Design Build Finance and Operation (DBFO) basis. This included 5,700 km of GQ and 800 km of other selected stretches.

NHDP Phase-VI: This phase, approved in November 2006, envisaged development of 1000 km of access controlled four/six lane divided carriageway expressways on DBFO basis.

NHDP Phase-VII: This phase was approved in December 2007 for construction of standalone ring roads, by-passes (including improvements of NH links in city), Grade Separated Intersections, flyovers, elevated highways, Road Over Bridges (ROBs), underpasses and service roads on BOT Toll basis. The status of national highway is shown in table 2.

Table2: Status of National Highways (as on 31st March 2010)

Lane Status	Length in km
6 lane and above	731 (1 %)
4 lane (2 lane dual carriageway)	14,584 (20.6 %)
2 lane (7 meters)	37,488 (52.8 %)
Single/Intermediate lane	18,131 (25.6 %)
Total length of National Highways	**70,934 (100.0%)**

Source: NHAI

The National Highway network of the country spans about 70,934 km. The National Highway Development Project (NHDP), covering a length of about 54,000 km of highways, is India's largest road development programme in its history. In many ways, this ambitious and path-breaking initiative of the Government of India, which began in the late 1990s acknowledged the importance of private sector in India's infrastructure development.

2. FISCAL GROWTH IN HIGHWAY SECTOR

India has an extensive road network of 3.3 million km - the second largest in the world. The National Highways have a total length of 70,934 km and serve as the arterial road network of the country. It is estimated that more than 70 per cent of freight and 85 per cent of passenger traffic in the country is being handled by roads. While Highways/ Expressways constitute only about 2 per cent of the length of all roads, they carry about 40 per cent of the road traffic leading to a strain on their capacity. The number of vehicles on roads has been growing at compounded annual growth rate (CAGR) of approximately 8% in the last five years.

The development of National Highways is the responsibility of the Government of India. The Government of India has launched major initiatives to upgrade and strengthen National Highways

through various phases of the NHDP. NHDP is one of the largest road development programmes to be undertaken by a single authority in the world and involves widening, upgrading and rehabilitation of about 54,000 km, entailing an estimated investment of more than INR 3,00,000 Crore (USD 60 billion).

National Highway Development Program (NHDP) Phase I&II consists of widening and strengthening of NH sections connecting four major metros of Delhi, Mumbai, Chennai & Kolkata, popularly known as "Golden Quadrilateral" amounting to a total length of 5846 km and improvements to North-South corridors connecting Kashmir with Kanyakumari and East-West corridors connecting Silchar with Porbandar amounting to a total length of 7300 km. It was launched in 1999 covering a length of nearly 14,0000 km at an estimated cost of Rs. 54,000 crore (at 1999 prices) (USD 12.317 billion). The NHAI project under study is under NHDP phase III, which was launched in 2005 for upgradation and 4 laning of 10,000 km of selected high-density corridor of highways at an estimated cost of Rs. 55,000 crore (at 2005 prices) (USD 12.544 billion). In addition to implementation of NHDP, the NHAI is also responsible for implementation of NHAI projects on National Highways (mainly road connectivity to major ports in India) at a cost of Rs. 4,000 crore (at 1999 prices) (USD 0.913 billion). NHAI is now responsible for implementing on National Highways of length around 24,000 km. NHAI will act as an employer and nodal agency for the NHAI project preparation and execution of NHDP. Out of total cost of NHDP i.e. Rs. 54,000 Crore or US$ 13.2 billion in the following manner as shown in Table 3 fund will raise. All the NHAI projects under NHDP Phase III are envisaged to be implemented on Design, Build, Finance Operate and Transfer (DBFOT) basis. Finance share of NHDP as follow:

Table 3: Financing of NHDP

Total Cost	**Rs.54,000 Crore (INR)**	**US$ 13.2 Billion**
Likely sources	**Rs. Cr. (On 1999 Prices)**	**US$ Billions (On 1999 Prices)**
Cess on Petrol and Diesel	20,000	4.90
External assistance	20,000	4.90
Market borrowings	10,000	2.40
Private Sector Participation	4,000	1.00

Source: NHAI.

The total Rs. 3690.11 crore has been utilized for capital work in NHAI by 31st March, 2011 Out of total estimated Rs. 54,000 crore. Out of total estimated project investment 75% has already invested for the project establishment. The physical growth it has achieved only 45.80% which is lower than the estimated amount. Build Operate Transfer (BOT) concession contracts with an estimated Total Project Cost of approximately USD 23 billion (including BOT/DBFOT2-Toll and BOT- Annuity contracts) have been awarded under various packages till January 31, 2011 and these projects are expected to be fully operational by 2015-16.

The consistent policy and institutional framework, which has been the backbone of the more than INR 3,00,000 Crore (USD 60 billion) NHDP, also conveys the intent and commitment of successive governments to encourage increased private sector participation in developing the arterial road network of the country to world class standards. More than 60 percent of the estimated investment requirement is expected to be privately financed.

The early success of Public-Private-Partnerships (PPP) in the NHDP, arguably, set the tone for

similar initiatives in other infrastructure sectors and has provided the single largest opportunity for private financing and management of infrastructure services.

The NHAI is mandated to implement the NHDP. Most of the projects have been developed or are under development on Public Private Partnership (PPP) basis through Build Operate and Transfer (BOT)-Annuity and Build Operate and Transfer (BOT)-Toll mode. Typically, in an annuity project, the project IRR is expected to be 12-14% and equity IRR would be 14 -16%. For toll projects, where the concessionaire assumes the traffic risk, the project IRR is expected to be around 14-16% and equity IRR around 18-20%. The fiscal allocation has stated in table 4.

Table 4: Financial Performance - Expenditure on NHDP (Rs. Crore) (INR)

S. No	Year	NHDP I	NHDP II	NHDP III	NHDP IV	NHDP V	NHDP VI	NHDP VII	Total
1	Upto year 1998	163.44	0	0	0	0	0	0	163.44
2	1998-99	328.16	0.8	0	0	0	0	0	328.96
3	1999-00	732.05	3.7	0	0	0	0	0	735.75
4	2000-01	1239.51	7.52	0	0	0	0	0	1247.03
5	2001-02	3878.36	1.92	0	0	0	0	0	3880.28
6	2002-03	6021.37	12.55	0	0	0	0	0	6033.92
7	2003-04	7422.56	75.03	0	0	0	0	0	7497.59
8	2004-05	6116.51	184.44	3.35	0	0	0	0	6304.3
9	2005-06	4317.46	1773.35	51.02	0	0	0	0	6141.83
10	2006-07	2089.63	5465.31	1362.28	0	0	0	0	8917.22
11	2007-08	1863.03	10169.22	3050.3	0	557.15	0	0	15639.7
12	2008-09	1257.72	11621.94	3961.59	0	729.52	0	0	17570.77
13	2009-10	1098.85	8968.83	5755.47	0	2516.9	0	0.18	18340.23
	Total	**36528.65**	**38284.61**	**14184.01**	**0**	**3803.57**	**0**	**0.18**	**92801.02**

Source: NHAI

2.1 PRESENT PRACTICE:

Initially, projects under NHDP were awarded as item rate cash contracts. However, going forward, Public Private Partnerships (PPP) is going to be the main mode of delivery for future phases of NHDP. While there are a number of forms of PPP, the common forms that are popular in India and have been used for development of National Highways are:

a. **Build, Operate and Transfer (Toll)** Model on DBFOT basis: tollable Highway projects.

b. **Build, Operate and Transfer (Annuity)** Mode on DBFOT basis: anuity payments from NHAI that would cover his cost (construction, operations and maintenance).

c. **Special Purpose Vehicle (SPV)** for Port Connectivity Projects: wherein NHAI contributes upto 30% of the project cost as equity.

d. NHAI is also proposing to award projects under a long term **Operations, Maintenance and Transfer (OMT)** concession.

2.2 RISKS IN PRESENT PRACTICE

Concessionaire Risk: With the introduction of the MCA, the risks involved in project and contractual issue is the commercial and technical risks which relating to construction, operation and maintenance are allocated to the concessionaire, as it is best suited to manage them. Other commercial risks, such as the rate of growth of traffic, are also allocated to the concessionaire.

Construction Risk: The concessionaire is required to commence construction works when the financial close is achieved or earlier date that the parties may determine by mutual consent. The concessionaire shall not be entitled to seek compensation for any prior commencement and shall do it solely at his own risk.

O& M Risk: Concessionaire to operate and maintain the project facility (includes road and road infrastructure as specified in the concession agreement). Failure to repair and rectify any defect or deficiency within specified period shall be considered as breach of responsibility.

Financial Risk: The concessionaire shall at its cost, expenses and risk make such financing arrangement as would be necessary to finance the cost of the project and to meet project requirements and other obligations under the agreement, in a timely manner.

Traffic Risk: The MCA provides for increase or decrease of the concession period in the event the actual traffic falls short or exceeds the target traffic.

Land Acquisition Risk: NHAI is responsible for acquiring the requisite land for the Project Highway

Common Risk: Force Majeure Risk - Force Majeure shall mean occurrence in India of any or all of Non-Political Event(s), Indirect Political Event(s) and Political Event(s),

B. DISPLACEMENT

Substantial changes in the environment often transform the patterns of human settlement and may result in population resettlement. Resettlement is the process through which population displaces from their habitat and/or economic activities relocate to another site and reestablish life. In sociology and anthropology as well as in the environmental literature, the term resettlement is used most frequently in the context of policies, planning activities and social research dealing with displacements caused by development. The term appears in such expressions as "involuntary resettlement", "involuntary displacement and resettlement," "forced resettlement," and "resettlement and rehabilitation," "involuntary displacement and resettlement" and "forced resettlement," and "resettlement and rehabilitation. Environmental changes that cause resettlement fall into two categories: natural and human-made. The first category includes environmental disaster such as floods, droughts and famines, desertification, volcanic eruptions, and so forth. The second category includes environmental interventions such as the construction of highways, the building of hydropower dams and reservoirs, and the expansion of strip mining, the conversion of forested areas into cultivated agricultural lands and the construction of airports, railways and ports

1. RESETTLEMENT AND REHABILITATION AS PER INDIAN CONTEXT

The concept of resettlement is used also to describe certain development programs that encourage and finance "voluntary" resettlement. Voluntary resettlement has taken place under some government sponsored programs that made available large areas of uncultivated and uninhabited lands to farming families who reside elsewhere and who possess little or no land. Such programs for encouraging voluntary resettlement were organized in the 1960's and 1970's in Africa, in the 1980s in Indonesia, in Latin America, and so forth. In 1980, some of us decided to work for the proper rehabilitation of the tribal oustees of the Sardar Sarovar Project (SSP), a large

multi-purpose dam being built by the **Gujarat** Government on river Narmada. The major phases are:

- The 1st policy thought in the year 1985 (During Narmada Bachao Andolan), a Committee under B. D. Sharma: **A policy for displaced tribal communities.**
- 1993 2nd policy drafted by the Rural Development Ministry and in 1994, the draft was revised but did not accept rehabilitation as a right of the displaced.
- 3rd policy drafted in February 2004, as **National Policy on Rehabilitation and Resettlement** for Project Affected Family.
- 4th policy which was frame worked in 2007 and named as **National Resettlement & Rehabilitation Policy, 2007.**
- And now the Government of India had formulating another Draft bill on **National Land Acquisition and Resettlement & Rehabilitation Bill, 2011**
- **World Bank R&R Policy 2000:** The World Bank's OD 4.30 requires a review of the legal framework for resettlement in preparing a resettlement plan
- **ADB R&R Policy 1995:**

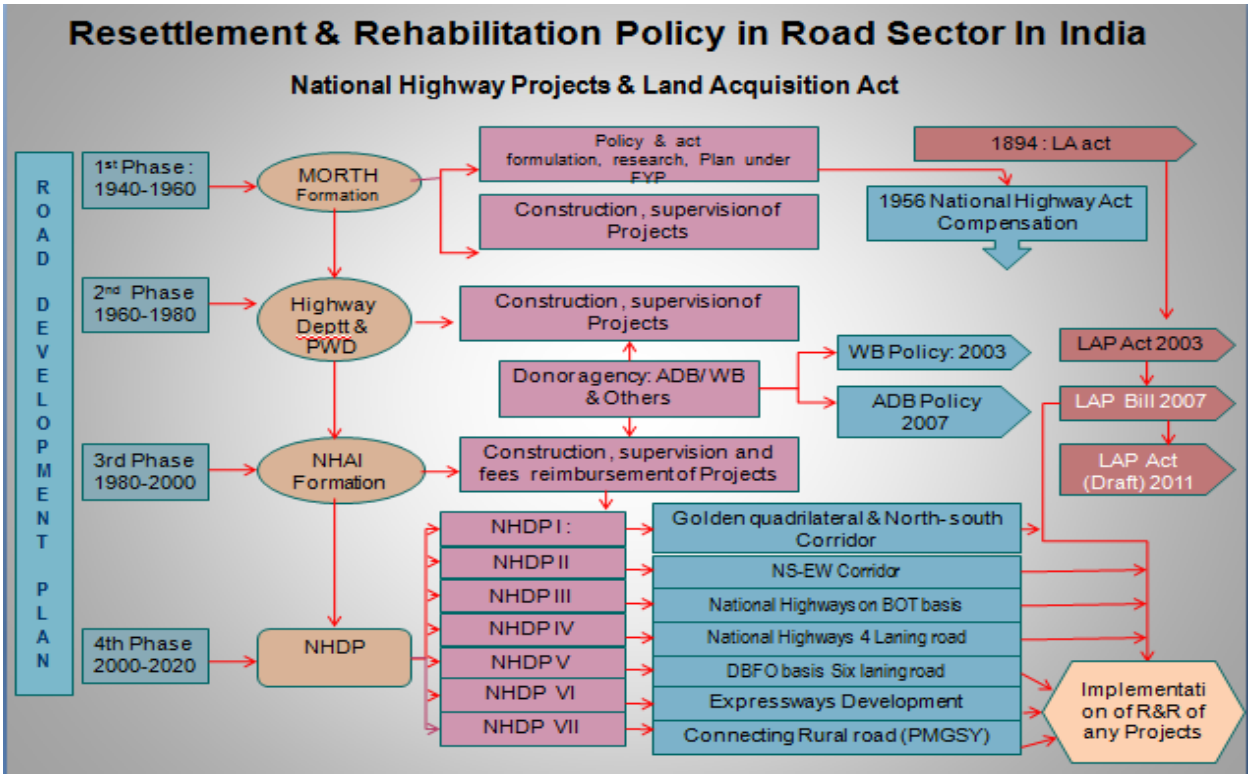
The Comparative assessment of different R&R policy with the purview of Road Projects in India is stated below:

Table 5: Comparative Assessment of Different R&R Policy in Road Project

CATEGORY	ADB1995	WB 2000	PDTC 1985	NPRR 2003	NRRP 2007	NLARR Bill 2011
OBJECTIVE	• Avoid involuntary resettlement • Ensure PAF assistance	• Involuntary resettlement avoided. • Providing sufficient investment participation of PAF in implementation	• Involuntary resettlement to Tribal community only.	• Non-displacing or least-displacing • Plan R&R of PAFs including Tribal's and vulnerable sections;	• Minimize of displacement • Rehabilitation package with participation of PAFs special care for weaker section through mutual cooperation.	• Avoid displacement • Institutional mechanism for implementation, monitoring & grievance redressal.
APPLICABILITY	All ADB's operations	Components of the regardless of the source of financing.	Only Tribal Outstees	• Applicable in whole India (except J&K state). • If displace 500 families or more in plain areas and 250 families in hilly areas,	• Applicable in whole India (except J&K). • If displace 400 families or more in plain areas and 250 families or more in hilly areas,	Applicable everywhere whoever is displaced
PROJECT TYPES	significant, not significant or no involuntary resettlement	Two category: Major, and Minor (WB OP 4.12 para 25)	No Classification	No Classification.	No Classification. (only emphasis separate category for linear project)	Classified
AFFECTED FAMILY & AFFECTED PERSON	Affected person people/family /firms/ private have house, land	Any person loses the right to own, use, or otherwise benefit from a-built structure, land	Title holders	Affected family means property substantially affected & residing continuously for a period of ≥3 years	Affected family residence or property substantially affected	Affected family residence or property substantially affected
EMPOLYMENT	Alternative employment for non agricultural displaced	Alternative employment for non agricultural displaced.	Only land	Nil for landless only compensation	Affected families (at least one person per nuclear family) shall get preference for employment	Displaced and other affected families shall be eligible for employment (one member/family)

CATEGORY	ADB1995	WB 2000	PDTC 1985	NPRR 2003	NRRP 2007	NLARR Bill 2011
COMPENSATION IN TERMS OF HOUSE / LAND / MONEY	• Assistance for relocation, • Compensation to replace lost assets, livelihood and income.	Shelter, infrastructure in the resettlement area. • Compensation to replace lost assets,	• Assistance for relocation	• Any affected PAF who lost his/her house due to project, may be allotted free of cost house (≤150 m^2 of land in rural areas, ≤ 75 m^2 of land in urban areas).	• Any affected PAF who lost his/her house due to project, may be allotted free of cost house (≤250 m^2 of land in rural areas, ≤ 150 m^2 of land in urban areas).	• At least 1/10th of an acre of land free of cost in a resettlement habitat for homestead purpose • Rs. 1,50,000/- to each displaced family for construction of house
OTHER BENEFITS	Relocation and transfer expenses. Assistance	• Vocational training to the member of PAF. • Moving allowances. • Support after displacement for a transition period.	Nil	• Monthly subsistence allowance i.e. 20 days minimum agricultural wages/month/1 year from the date of displacement. • Training to PAP. • Cattle shed assistance of Rs.3000 • Shifting assistance of Rs.5000	• Monthly subsistence allowance i.e. 25 days/wages/month/ 1year • Training to PAP. • Scholarships to eligible member of PAF. • Cattle shed assistance ≥ Rs.15,000 • Shifting assistance of ≥ Rs.10,000	• Training to PAF for Type-A, Type-B project. • Rs.2,000/- per month • Rs.10,000/- each family for temporary sheds. • Transportation allowance of Rs.2,000/- • Registration cost of land up to 5 acres
R & R BENEFITS	**Not specified**	**Not specified**	**Nil**	**Rs.10000/-**	**Rs. 20000/-**	**Rs. 250000/-**

The different policy and applicable road development projects in India is showing the following flow diagram.



2 RISKS IN DISPLACEMENT:

Given their complexity, the process of displacement, transfer and resettlement involve substantial socioeconomic risks for the affected populations. These risks are:

- **Landlessness,** which occurs when expropriation of land removes the foundation upon which people's productive systems and livelihoods are constructed;
- **Joblessness,** which occurs when resettles lose access to their employment and remain unemployed or underemployed;
- **Homelessness,** which occurs when the displaced people lose shelter and cultural spaces;
- **Marginalization,** which occurs when families lose economic power and other assets and spiral on a downward mobility path;
- **Food insecurity**, which occurs when resettles fall into temporary or extended undernourishment;
- **Increased morbidity and mortality** as a result of the outbreak of relocation-related illnesses, transmitted diseases, social stress and psychological trauma;
- **Educational loss**, particularly by children who because of displacement interrupt school or do not return to school;
- **Loss of access** to the previous common property natural resources (pastures, forests, rivers and quarries ect.), which causes drops in incomes and livelihood levels and increases pressures on natural resources at the resettlement sites; and
- **Social disarticulation**, which bears apart the social fabric and dismantles mutual help networks and patterns of community organization.

Under Section 4 of Land Acquisition Act (1894) or under section 3A of National Highway Act (1956): land can be acquired only for "Public Purpose". "Land acquisition and Resettlement & Rehabilitation" are inevitable process in Highway infrastructure development project process in India as well as over the world. The process of displacement, transfer and resettlement involve substantial socio-economic risks for the affected populations as stated by *Cornea* in resettlement and rehabilitation risk in project development.

Resettlement and Rehabilitation Risk in Project Development

"The process of displacement, transfer and resettlement involve substantial socio-economic risks for the affected populations" impoverishment risks and reconstruction (IRR) model by Cornea

Landlessness	Landlessness	Joblessness	Homelessness	Marginalization	Food insecurity	Increased morbidity & mortality as a result of relocation	Educational loss;	Loss of access to the previous common property & natural resources (like etc);	Social disarticulation	Consequences in world*	Consequences in India**
Dam	●	●	●	●	●	●	●	●	●	100% families	100% families
Highway	●	◐	●	◐	●	○	○	●	●	30-50% PAP	40-60% PAP
Airport	●	◐	●	◐	●	○	○	●	●	100% families	100% families
Township	●	●	●	●	●	●	●	●	●	100% families	100% families
Industry	●	●	●	●	●	◐	◐	●	●	100% families	100% families
Mining	●	●	●	●	●	●	●	●	●	100% families	100% families
Miscellaneous	●	◐	●	◐	●	○	○	●	●	-	marginal

● high
◐ moderate
○ low

* Japan, Canada, Norway, Brazil, Columbia and China : matrix developed by cornea 2001, WB Report

** Case studies : Sardar Sarovar Project, Ukai Dam, NHAI Projects, Jewar Airport , Jhari-raniganj Eigt township displaced for coal firing.

C. DEVELOPMENT VSs DISPLACEMNT

If we can analyse the parent state from where the coinage of R&R policy has evolved the displacement of Road development is very high 23.05% i.e Gujarat (Narmada Bachao Andolan).

Table 6: Category-wise Decadal Land Acquisition in Gujarat 1947-2004

Categories	1947-1960	% share	1961-80	% share	1981-90	% share	1991-04	% share	Grand Total	% share
Water Resources	32260.76	13.89	674050.20	56.55	689957.50	66.93	522123.50	78.22	1918391.96	61.44
Industries	2891.16	1.24	40740.95	3.42	87181.21	8.46	49415.30	7.4	180228.62	5.77
Mines	24.31	0.01	29.92	0.00	2089.63	0.2	4918.78	0.74	7062.64	0.23
Non Hydel	178.63	0.08	5727.70	0.48	8506.99	0.83	1873.99	0.28	16287.32	0.52
Defence & Security	59.74	0.03	860.81	0.07	4981.04	0.48	889.59	0.13	6791.19	0.22
Environment Protection	16.48	0.01	1542.68	0.13	288.95	0.03	0.00	0.00	1848.13	0.06
Transport and Communication	**168626.90**	**72.58**	**309046.00**	**25.93**	**175048.60**	**16.98**	**67081.00**	**10.05**	**719802.49**	**23.05**
Human Resources	9634.17	4.15	51045.38	4.28t	9371.83	0.91	374.05	0.06	70425.44	2.26
Farm & Fisheries	1079.90	0.46	1836.95	0.15	826.25	0.08	2.88	0.00	3745.99	0.12
Urban Development	13605.16	5.86	75257.87	6.31	32137.06	3.12	15917.76	2.38	136917.84	4.38
Refugee Resettlement	7.82	0.00	67.30	0.01	0.00	0.00	794.20	0.12	869.34	0.03
Social Welfare	1023.06	0.44	23602.51	1.98	5443.97	0.53	317.47	0.05	30387.01	0.97
Tourism	130.99	0.06	283.27	0.02	99.20	0.01	111.95	0.02	625.42	0.02
Government Offices	771.84	0.33	2953.48	0.25	14625.99	1.42	3361.12	0.50	21712.44	0.70
Unknown	2020.19	0.87	4860.21	0.41	285.83	0.03	350.87	0.05	7517.11	0.24
Total	**232331.20**	**100**	**1191905.0**	**100**	**1030844.00**	**100**	**667532.50**	**100**	**3122613**	**100.00**

Source: Government Reports

Total no of displaced Ratio is found the following table:

Table 7: Category -wise Decadal PAFs in Gujarat State 1947-2004

Project Category		Type of Land Utilized			Total	Total No. of Persons Affected/ Displaced
		Revenue	Forest	Government		
Water Resources	Land Utilized	19,21,186	10,08,623	1,92,119	31,21,927	-
	Families	2,54,119	1,52,471	50,824	4,57,414	23,78,553
industry	Land Utilized	1,80,296.1	94,655	18,030	2,92,981	-
	Families	15,056	9,034	3,011	27,101	1,40,924
Mines	Land Utilized	7,062.646	3,708	706	11,477	-
	Families	441	265	88	794	4,127
Non Hydel	Land Utilized	16,925.88	8,886	1,693	27,505	-
	Families	1,212	727	242	2,182	11,344
Defense & Security	Land Utilized	6,872.38	3,608	687	11,168	-
	Families	264	158	53	475	2,471
Environment Protection	Land Utilized	1,848.13	970	185	3,003	-
	Families	280	168	56	504	2,620
Transport & Communication	Land Utilized	7,20,016.50	3,78,009	72,002	11,70,027	-
	Families	1,44,880	86,928	28,976	2,60,784	13,56,076
Human Resources	Land Utilized	70,425.44	36,973	7,043	1,14,441	-
	Families	1746	1,048	349	3,143	16,342
Farm & Fisheries	Land Utilized	3,745.99	1,967	375	6,087	-
	Families	763	458	153	1,373	7,141
Urban Development	Land Utilized	1,36,917.80	71,882	13,692	2,22,491	-
	Families	9,104	5,462	1,821	16,387	85,213
Refugee	Land Utilized	869.34	456	87	1,413	-
	Families	69	41	14	124	645
Social Welfare	Land Utilized	30,387.02	15,953	3,039	49,379	-
	Families	2,187	1,312	437	3,937	20,470
Tourism	Land Utilized	625.43	328	63	1,016	-
	Families	69	41	14	124	645
Government Offices	Land Utilized	21,712.45	11,399	2,171	35,283	-

Project Category		Type of Land Utilized			Total	Total No. of Persons Affected/ Displaced
		Revenue	Forest	Government		
	Families	795	477	159	1,431	7,441
Not Known	Land Utilized	7,636.49	4,009	764	12,409	-
	Families	1,651	991	330	2,972	15,453
Total	**Land Utilized**	**31,26,527.00**	**16,41,427**	**3,12,653**	**50,80,606**	-
	Families	**4,32,636**	**2,59,582**	**86,527**	**7,78,745**	**40,49,472**

Source: Government Reports

Available reports indicate that around 21.3 million people are internally displaced populations (IDPs) due to development projects in India. IDPs include those displaced by dams (16.4 million), mines (2.55 million), industrial development (1.25 million) and wildlife sanctuaries and national parks (0.6 million) etc (IDMC, 2007). 21% of total shares transport and communication sector development.

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