



## Stakeholders' preferences for land assembly: Development with rural urban synergy

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### ABSTRACT

Sensitized and consultative approach is critical to defuse agrarian crisis in India. Unified development strategy of urban-rural continuum can be a natural outcome to discover a collectively acceptable model to key stakeholder. In the postulated model, the precincts of land owner, agriculturist, developer, Government or buyer are seen to be melting away. "Framework for acceptable land assembly" is critical for development of city regions, which is undeniably an uphill task, worldwide today. Urbanization is an engine of growth for which Regional and Master Plan is an important tool for development. Yet land-owners resistance has power to stall even a well conceptualized, sustainable, practical, statutorily compliant, technically sound, and financially viable "Master Plan". The consequence is that the landowner or agriculturist feels alienated in the development process resulting in agrarian crisis and possible rural-urban divergence. Exploring this trend further a questionnaire as primary research tool was administered to stakeholders- landowners, Developers or Government and End User from India, a third world country to identify preferential mode(s) of land assembly. The study tries to converge and extract the most appropriate method and infers that land assembly has got fused with development process. In the end the paper brings out innovative implementation model suitable to all stakeholders as a feasible way onward. The paper tries to highlight the research gap for establishing judicious allocation of land for rural-urban synergy and tries to find an answer whether going vertical for both is possible?

**Key words:** Acquisition act, Land assembly pooling, Rural urban synergy, Stakeholder as partner in development urbanization

It is an established fact that the most indispensable ingredient for development is 'land' and by far the most challenging to assemble. Inadequate and inequitable supply of serviced land is a devastating bottleneck (Sandhu 2004) also highlights the speculative nature of land, spiraling prices in wake of mismatch between demand and supply. In the globalized economy and free reining market forces, formal land markets and development processes tend to serve only those who can afford leaving the poor or famers to obtain land through informal markets. Even these informal markets are headed towards alienation owing to operational constraints, widening income gaps, escalating land prices and higher aspirations making affordable and legal access to land unsustainable. Truly, ineffective and non-existent policies for land for city regions in Third World countries is leading to development and planning problems. Louw (2008) states that under urban economics land assembly is a sequence of transactions to buy land in imperfect land market.

In the urbanization epic, this paper tries to locate a common platform or emerging method acceptable to key

players harboring conflicting interests with an objective of patching together land mosaic for regional development at rural fringes. Land acquisitions are recommended to occur via inclusive deals that will result in a 'win-win' outcome Azadi *et al.* (2013) as quoted by Teklemariam *et al.* (2014). Thus, setting the stage for urbanization, viz spaces to live, work and play, physical, social, education, sports, health, transport, commercial, entertainment and social infrastructure in addition to the green and blue environment and agriculture for food security.

The Chandigarh/Greater Mohali region was a laid back area of North India, Asia about half a century ago being off, "The Grand Trunk Road" and the Northern Railway line. This region was part of the large and prosperous Punjab Province. The main occupation of the region is agriculture. Geopolitical factors like Partition of India and Pakistan in 1947, conceptualisation of Chandigarh, reorganization of three states Punjab, Haryana, Himachal Pradesh and Chandigarh in 1966 and evaporation of terrorism in fag end of last century administered stimulus to growth and development, for which land was a key ingredient.

### MATERIALS AND METHODS

The paper uses both theoretical and empirical

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perspective, undertakes a trend analysis and identifies the factors that catalyze the processes, leading to new legislation for land acquisition in India. The study covers the critical fallout of such legislations which are observed as largely development negative by industry. Finally the paper identifies broad stratagem for legal mobilization of land resources in India through a questionnaire administered to key stakeholders and analyzed through ANOVA, factor analysis and weighted averages. The study then concludes that in the volatile land market in India there is a scope for further evolving innovative policies and methods to identify path of least resistance especially to farmers. Thus, it tries to cover the entire critical aspects with respect to basic ingredient for development that is land acquisition (LA).

Frame work of development – the Land Acquisition Act 1894: As most land parcels have a number of encumbrances, mobilizing and amalgamation of land bank is a daunting task. The core and middle section of most of metropolitan cities in India like Delhi are already built up and the periphery villages are either agricultural fields, green belt or reserve forests (The Regional Master plan, Greater Mohali Region can be seen at puda.nic.in and Land use Map of Delhi at dda.org). So a limited land is available in the urban extension areas, recently identified for farmer friendly land pooling scheme in Delhi where innovative development structure are anticipated in sync with the draft regulations uploaded at www.dda.org for stakeholders suggestions.

In Punjab after notification of “Greater Mohali Regional Plan,” when the land became legally available, the private sector rushed in to encash the opportunity of latent demand. The development authority had to consider the projects beyond the sectoral grid by expanding the scope of Masterplan. The landowner/farmer felt left out and set the stage for discontent which brewed and erupted in protests and litigation. This was in sync with other similar cases

against LA across the Indian subcontinent.

National trends in land acquisition: Eminent domain or compulsory purchase is the primary method to acquire land to accommodate urban expansion in rural areas. Public involvement in direct land ownership has traditionally been justified for reasons of ‘the common good’ or ‘the public interest (Louw 2008). Institution like “Land Acquisition Act 1894” allows legal umbrella to government for acquisition of land for public interest, is increasingly criticized (Lozano *et al.* 2013). As an outcome of this farmer discontent has become a national trend in India in the last decade. This policy and related factors is responsible for smoldering angst of the land owners are tabulated in Table 1.

The discontent against forcible LA for SEZ had boiled over and ultimately erupted in Nandigram (West Bengal) against proposed SEZ, and fuelled a nationwide agrarian crisis which exhibited a trend observed in POSCO project (Orissa), Sector 76-80 SAS Nagar (Punjab), Tata Nano project in Singur (West Bengal), NOIDA extension and Bhatta parasol in UP. Case after case seemed to lead to failed projects due to discontent of the land owner/farmer against the prevalent land acquisition process in India. There are several other instances of agitations against land acquisition in India in recent years, often involving extra-legal means of protests, and sometimes even violence (Choudhary 2013). These landmark cases have deeply impacted the upcoming land acquisition policy/legislation in India.

Rural and urban divide: An urban versus rural divide seemed to be taking place amongst the 121 crore population of India, over land resources and who has priority over its utilization. Rapid urbanization causes problems in peri-urban regions, the transition zones, moving from a pure rural to an urban landscape develop a high level of complexity

Table1 Conventional frame work for land acquisition (ACT 1894)

Feature of LA Act	Nature and consequences
Celebrated eminent domain	An outdated Law
Compensation amount	Paltry and irregular
Public purpose	Used indiscriminately – under the Influence of the Industry and at the cost of the peasants
Rehabilitation and settlement promises for displacement	Unsatisfactory resulting in Trust deficit
Benefits of the intended landuse	Denied to original owner after acquisitions
The requiring and acquiring authority	Does not assess (a) Public Purpose, (b) Quantum and specification of land, and (c) Suitability of the site after excluding alternate sites.
Excess land at a later date	No resumption/restoration -
Environmental issues	
Limited appeal	

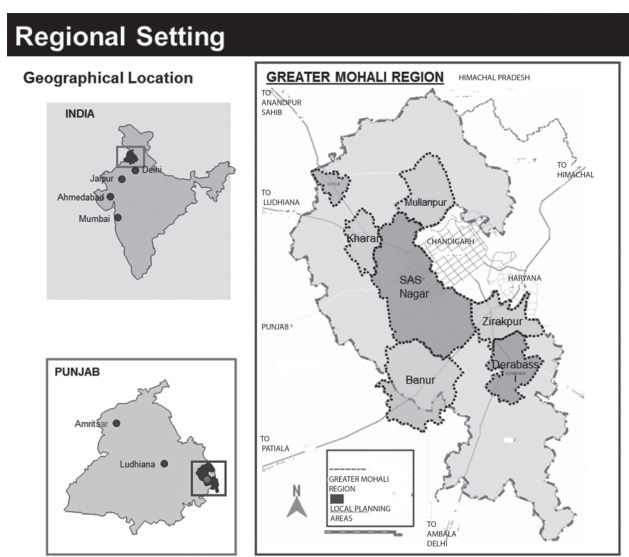


Fig 1 Greater Mohali Regional Setting map  
Source: gmada.gov.in

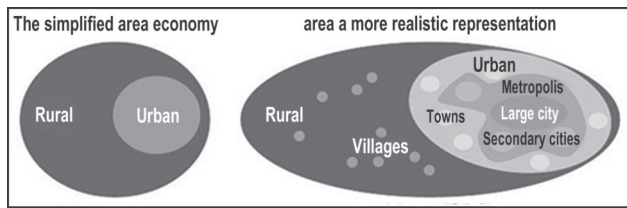


Fig 2 Rural and urban synergy; Source: World Bank (2009)

in their social and economic structures (Zhao 2011). While what the policy makers should have actually aimed at and didn't take place, was a synergy between the rural (69%) and urban (31%) economics interspersed with suburbs (peri-urban) as envisaged by the World Bank (2009) in illustration at Fig 2.

**Legislations**

Land Acquisition (Amendment) Bill 2007 and Rehabilitation and Resettlement Bill 2007 (LARR): Lapsed with the dissolution of 14<sup>th</sup> Lok Sabha as the new legislations defined multiplicity of agencies, which was considered non-conducive for expeditious results and in a straightforward manner. The Bill envisaged a Land Acquisition Compensation Disputes Settlement Authority at the state and central levels to adjudicate disputes resulting from acquisition proceedings (Parker and Vanka 2008).

Is it a trend reversal? Many research agencies were bringing out the likely strengths and weakness of Land Acquisition legislations. But the predominant rural population (61%) Fig 3a has tilted balance of Indian government's policy towards rural rather than urban population (39%) although cities are greater generator of taxes and GDP (Fig 3b). The non-availability of migrant labor in north India seems to indicate a trend reversal, i.e. there seems to be slow down on the pace of development and the population that should have moved to urban areas has actually not migrated to cities exhibiting a retarding effect of rural employment schemes on urbanization as well as unavailability of farm-labour in Punjab.

The Right to Fair Compensation and Transparency in

Land Acquisition, Rehabilitation and Resettlement Act, 2013: The RFCTLARR ACT, 2013 was notified on 27.9.13 applicable from 1.1.14. the main components are depicted in Fig 4 have far reaching mechanisms,

The new law (2014)-Industry reaction: The Industry reaction to 'The RFCTLARR ACT' was very voluble branding it as development retardant with anti-urban connotations (Mithani 2013). The act was also silent on evolving a healthy rural urban continuum. The discussions in an interactive session of Bombay Chamber of Commerce and Industry brought forth that the bill in the long run will create a new economy and accordingly new business models will have to be developed for the Industry.

Methods of land acquisition or assembly: In view of new legislations and real estate regulatory bill formulation of innovative, new or old, hybrid mode in refreshed formats is the call of the day for enabling projects. Some of the prevalent and emerging formats are:

- TP Scheme of Gujarat: There is no land transfer-only net public land transfer to the government. There is considerable scope for incorporation of land into urban areas without the many distortions and dilatory processes and litigation that takings and resale involve. It is likely more immeasurably fairer (Morris and Pandey 2007).
- Project-led assembly process the key issue is to transfer landownership directly from a passive landowner to an active landowner. This active landowner is also directly involved with the property development (Louw 2008).
- 'Implicit' Acquisition in Road Widening (Kerala) the project would be viable since the cost of the road would be limited to the construction cost while the otherwise very high cost of acquiring the land adjacent to a road under prior ribbon development is avoided (Pandey 2007).
- Use of TDRs (Mumbai) those giving up lands are automatically compensated, to eliminate value loss in giving up land and compensate value changes occurring on new zoning,
- Land sharing projects instead of being evicted, the slum dwellers share the area with planned commercial

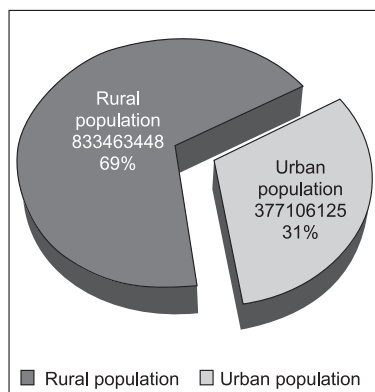


Fig 3a Rural vs urban oopulation of India census 2011 Source: Census of India

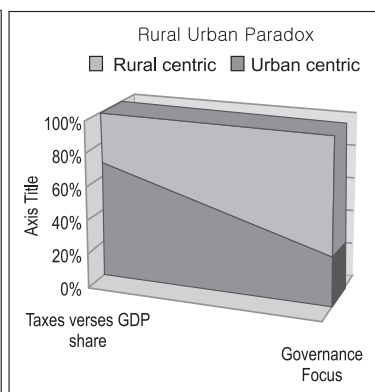


Fig 3b Rural vs urban governance bandwidth Source: McKinsey Global Institute

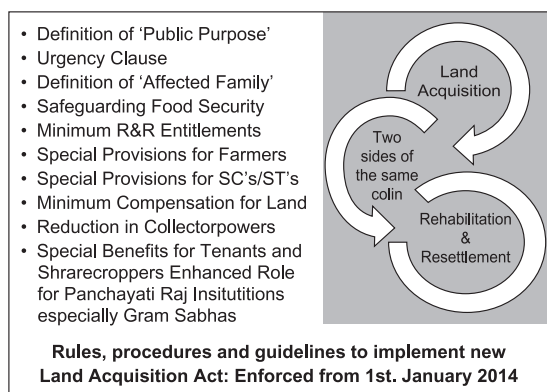


Fig 4 Salient features of new law. Source: Ministry of Law and Justice, Legislative Department Government of India

properties (Sandhu 2004, Shlomo and Thipparat 1983). In Soi Bhavana Slum In Bangkok, 60 percent land area has been given away for slum reconstruction and 40 percent for development of commercial properties. Noida and Greater NOIDA is to buy land directly from farmers for development like group housing which will help farmers get a higher compensation and cut down on litigation and bypassing new Law

- Land pooling (Punjab, Gujarat, Haryana, UP Delhi DDA etc.): This is a technique for promoting efficient, sustainable and equitable land development where lands of different owners is pooled together and after planning is re-distributed in a properly reconstituted plots deducting the land for open spaces, social infrastructure, services, housing for the weaker section and street network. Compulsorily acquiring land is avoided yet a control on the growth and development can be exercised. Punjab in 2013 formulated two policies, developed residential land and commercial land to land owners

under Land Pooling Scheme and land owners become partners in development

Summing up it can be said that land policy formulation and implementation is not only difficult, it can also be costly. However, the costs of not formulating and implementing policies are even much higher. The key to formulating effective policies is understanding the existing realities and processes on the ground and reducing their negative impacts and maximizing their positive impacts. Louw (2008) opines that German statutory process for land pooling is often pre-empted by a voluntary pooling process in which individual landowners agree plot apportionment and site layout without the need for recourse to the statutory body. Thus, the real challenge lies in having a sensitized approach towards stakeholder's sentiments and their aspirations so that development can be owned by them bridging the rural urban chasm.

Survey for understanding stakeholders' preferences for land assembly: The study used a self-administered

Table 2 Question Rate the following methods for sale, purchase or acquisition of land for development

Ques- tion No.	Option	Acquisition agency	Mode	Principal component	Additional comp.	Component to address livelihood issues
22.1	Op. 1	The Government	Land Acquisition	A Lump sum payment of compensation at the market price of land	Solacium	Government job for a family member.
22.2	Op. 2	The Government	Land Acquisition	A part payment of compensation at the market price of land	Solacium	Remaining compensation in equal monthly installments with interest for next 20 years/ life to ensure regular income for the family.
22.3	Op. 3	The Government	Land Acquisition	A part payment of compensation at the market price of land	Solacium	Rehabilitation package for setting up an alternative means of livelihood for your family.
22.4	Op. 4	The Government	Land Acquisition	A part payment of compensation at the market price of land	Solacium	Remaining in some portion of the developed and approved land/built modules in lue of cash.
22.5	Op. 5	The Government	Through the land pooling scheme	A residential plot in the developed area in proportion to the land pooled.		Residential and or commercial plot in the developed area in proportion to the land pooled.
22.6	Op. 6	The private parties	Through direct negotiations	At the market value of land and get upfront payments directly from the buyers.		
22.7	Op. 7	The Private parties	Through direct negotiations	At the market value of land with part upfront payment.		Part payment in assured long term installments as upfront money is likely to be spent away in no time.
22.8	Op. 8	The Government/ Private Partner	Cashless partnership in project/ Joint Venture	At the market value of land as equity investment in the project		Or share in the profit.
22.9	Op. 9	The Private Partner	Partnership in the project/ Joint Venture	The market cost of land as equity investment in the project and return in kind in lieu of land, say some portion of the developed and approved land And/or return in built modules.		

questionnaire to register stakeholders’ preference using random stratified sampling for collecting data from Local Planning areas of Greater Mohali Region (GMR) of Punjab covering SAS Nagar, Kharar, Mullanpur, etc. As highlighted by groups of stakeholders (Teklemariam *et al.* 2014) for inclusive land deal, the need exists to broaden the frame. Thus players in urbanization food chain have been grouped as:

- i. Resources(LR): Land owner, Land assembler(Land bank for development),
- ii. Supply Drivers (SD), Developer and Government: Builder, Developer, Licensee, Colonizer, Property dealers, Marketing, Sales Person Administrator, Official of Development Authority Land, Approval Agencies, Planner, Engineer, Architect ,Estate Official ,any other and
- iii. Demand Drivers (DD), Buyer and Investor of property: Citizen, Government, Public Sector, Technical professional - engineer, doctors, IT, Architect, consultant etc., Housewife, Private Service, Self-employed, Retired person, Academics, Teaching, Student, Industrialist, Entrepreneur, Businessman, Other Profession - Lawyer, CA ,CS, Management, Consultant etc.

Fifty three questionnaire were collected from LR, 104 from SD and 277 from DD as intensity of land usage increases with the value chain interpreting that the same quantum of land tilled by a farmer is used by more SD and sold to further more number of DD. The aim was to understand emerging mode of Land Acquisition for Urban Development in face of volatile land markets and perceive if there is a preferred mode. The questionnaire was earlier validated through pilot study. A 5 point likert scale was utilized to seek responses which are de-bundled, abbreviated and tabulated in Table 2 for clarity.

*Hypothesis*

H<sub>1</sub>: There is a significant difference amongst land owners, developers, govt. and end user regarding the emerging mode of land assembly, acquisition for development.

H<sub>2</sub>: There may be common emerging mode acceptable/ tolerable to all three categories of stakeholders.

**RESULTS AND DISCUSSION**

Weighted average is average of the individual’s numerical values of independent variables and is summed in Table 3. Results highlight that the general trend is in favor of land pooling as preferred and acceptable method of land acquisition which is ranked as Number 1 with 1 540 score on weighted average. This research has been ongoing for past 1.5 years, during the prevailing upheaval in land markets in India. The resultant uncertainties are absorbed as respondents seem to repose more confidence in government sector apportioning first five ranking to government based acquisitions. The result capture the shifting of preference of all groups from traditional to Land pooling method confirming that here may be common emerging mode

Table 3 Q Preferred modes for sale/purchase/acquisition of land for development

	1	2	3	4	5	Total score	Weighted %	Rank
Op. 1	12	26	297	52	46	1393	64.342	6
Op. 2	8	18	245	114	48	1475	68.129	4
Op. 3	5	22	258	65	83	1498	69.192	2
Op. 4	4	10	253	119	47	1494	69.007	3
Op. 5	6	22	240	55	110	1540	71.132	1
Op. 6	8	10	275	92	48	1461	67.483	5
Op. 7	13	67	274	48	31	1316	60.785	9
Op. 8	20	55	254	71	33	1341	61.940	7
Op. 9	24	56	258	58	37	1327	61.293	8

Conclusion: On the basis of weighted scores land pooling emerged as the preferred option.

acceptable/digestible to all three categories of stakeholders through weighted average method.

Other strategies are seen to earn recognition because land owner may prefer to sell or buyer may wish to purchase, according to their sentiment, aspiration, requirement, price or time-frame. The land resources (LR) may wish to continue farming preferring to live in their conversant community or buy agriculture land elsewhere at a reasonable rate. The decision may have bearing with land holding size of LR. While some LRs may opt for real estate or speculative methods specially the younger groups, others may prefer immediate returns due to diverse family compulsions. The land owner (LR) is truly the lord in the development scenario today-his comfort level is accorded absolute care and importance and forms basis for major land assembly strategies. However, developers (SD) profitability and end user (DD) aspirations are also key component coming next in the urban food chain.

Greater Mohali (GMDA) Land Acquisition: The planning and development of SAS Nagar, Mohali began in 1960s in continuum of Chandigarh. The evolution of this sleepy little village Mohali to become a Class-1 town, the 18th District Head quarter in 2006, a municipal corporation city and emerging as a major entity in the regional

Table 4 Land acquisition figures GMADA 2011 (In acres)

Name of scheme	Year of award	Total land acquired (in acres)	Area of land under pooling (in acres)	Area for which compensation paid (in acres)	Percentage in favour of land pooling
IT city	2011	1693.8124	416	1277.8124	24.56
Medicity Phase-1	2011	97.425	76	21.425	78.01
Eco city Phase-1	2011	419.9519	390	29.9519	92.87
Sector 88-89	2011	663	611	52	92.16
		2874.1893	1493	1381.1893	51.95

Source: TILA consultant land acquisition GAMADA

development mosaic is a momentous journey in just three - four decades. The recent Master Plan of Local Planning Area (LPA), SAS Nagar has been extended to 127 Sectors from Chandigarh on north east, village Landran on the south west, from Kharar in North West to Aerocity and the Industrial Sectors IT City, beyond the Railway line in south east. Initially acquiring land for development was easy but in nineties Sector 76 to 80 SAS Nagar posed a major hurdle binding the human and financial resources of authority for a better part of a decade. Thus, a smooth supply of legal space couldn't be sustained by the government. With the notification of periphery policy and Regional and local Master plans, the built up latent demand was consumed by private sector SD by purchasing land directly from farmer, when the Mohali sectors were opened to private players and selling directly to DD. In the meanwhile agriculture predominantly of wheat-rice continued unabated.

The authority already bruised by the 1894 archaic law, decided to also offer both traditional and land pooling option for land assembly. The statistics of four proposals of LA by GMADA in 2011 are tabulated, exhibiting a definite repose of confidence in land pooling and selection of this option by more than 92% of the LR (Table 4). The sentiments of LR were accorded high weightage by the authority.

Table 5 ANOVA

Land assembly option by respondents	Sum of squares	df	Mean square	F	Sig.
Op.1					
Between groups	17.452	2	8.726	13.759	
Within groups	272.705	430	0.634		
Total	290.157	432			
Op.2					
Between groups	82.823	2	41.412	87.287	
Within Groups	204.004	430	0.474		
Total	286.827	432			
Op.3					
Between groups	152.076	2	76.038	165.452	
Within groups	197.619	430	0.460		
Total	349.695	432			
Op.4					
Between groups	65.376	2	32.688	77.232	
Within groups	181.996	430	0.423		
Total	247.372	432			
Op.5					
Between groups	151.264	2	75.632	126.365	
Within groups	257.364	430	0.599		
Total	408.628	432			
Op.6					
Between groups	36.178	2	18.089	33.934	
Within groups	229.213	430	0.533		
Total	265.390	432			
Op.7					
Between groups	9.079	2	4.540	6.941	.001
Within groups	281.253	430	0.654		
Total	290.333	432			
Op.8					
Between groups	20.042	2	10.021	13.693	
Within groups	314.688	430	0.732		
Total	334.730	432			
Op.9					
Between groups	8.179	2	4.089	5.040	.007
Within groups	348.879	430	0.811		
Total	357.058	432			

Result and analysis through ANOVA: It was also felt important to understand how the respondents-LR, SD and DD responded as group, so data was also analyzed on SPSS (Statistical Package for Social Sciences) and statistical tool ANOVA was applied. Analysis of Variance (ANOVA) is used to test for the significance of the differences or variance among more than two sample means. The two estimates of the population variance are compared by computing their ratio, called F-statistic in Table 5. ANOVA table reflects that there is a difference among all three groups for most of the factors. The value of significance is less than 0.05. This highlights that there is a difference amongst the three groups-LR, SD and DD. Thereby, laying bare the aspiration of LR to safeguard his interest in land, SD profit motive and DD to best buy at least expense. In addition after selling his land or making project from land as partner LR can become SD or DD and can agree with either of the two, ie the vocation of farmer may undergo transformation at urban fringes. Thus ANOVA test highlight a significant difference amongst three groups regarding the land options. Thus, the results of ANOVA support H1 that there is a significant difference amongst land owners, developers/government and end user regarding the emerging mode of land assembly for development.

In the result of the tests above some acceptable meeting point had to be discovered so that planned development can become reality through synergy. Thus, factor analysis was used to find out the common factors acceptable to three categories of stakeholders.

Table 6 Rotated component matrix

A	Safe option	1	2
	Op. 5	0.853	
	Op. 3	0.807	
	Op. 4	0.787	
	Op. 2	0.750	
	Op. 6	0.634	
Eigen value			3.192
Percentage of variance explained			35.469
B	Speculative option		
	Op. 9		0.849
	Op. 8		0.846
	Op.7		0.793
	Op. 1		0.535
Eigen value	2.598		
Percentage of variance explained			28.867
Cumulative Percentage of variance explained			64.336
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.795	0.795
Approx. Chi-Square		1632.026	
Bartlett's Test of Sphericity	df	36	
	Sig.		

Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization. a. Rotation converged in 3 iterations.

Factor analysis: Factor analysis attempts to identify a set of dimensions that is not directly observable in a large set of variables and summarize a majority of the information in a data set of relatively lesser new categories, called factors. It groups redundant variables so that smaller number of variables can be selected for further analysis. Factor analysis begins with the construction of a new set of variables based on the relationships in the correlation matrix. The best combination makes up the first component and is the first factor. The second principal component is defined as the best linear set of variables for explaining the variance not accounted for by the first factor. Two significant factors “Safe and speculative options” emerged from this matrix explaining 64.33% of the variance depicted in Table 6 and Fig 5.

A-safe option: First factor namely Safe Option or conservative approach has five factors with Eigen value of 3.192 and variance of 35.47. The sub-options explains the deep rooted insecurity of respondents towards protection of agricultural land, home, livelihood or hard cash in hand amidst lagging economies and treacherous land markets, i.e. dispossession from one’s own means of production results in loss of (a) economic security;(b) social status; (c) empowerment achieved through earlier movements and land reforms;(d) home; and (e) kinship. Option five that is land pooling is once again emerging as fore-runner along with three, exhibiting higher factor loadings in the first group. This supports Hypothesis H<sub>2</sub>: that there may be common emerging mode acceptable to all three categories of stakeholders.

B-speculative option: The second factor namely speculative option having 4 factors explains 28.87 % of variance. Here the respondents seem to exhibit a tendency towards leveraging land as an asset to speculate and earn higher returns even at the cost of increased risk. Land is seemed to be exploited as magnet for evolving a partnership of stakeholders in the overall development mosaic. Option nine and eight with higher factor loadings emerge as fore runner in second option. The fact that real-estate is an investment asset is responsible for speculative land markets, just like speculation in financial assets. In real-estate markets, a limited supply of valuable (and potentially even more valuable) property (sometimes even a locational monopoly) offers the opportunity for speculative profits based on the trader’s expert judgment or “insider information” (e.g. from a cousin on the planning commission). There is a resemblance to share speculation on the stock exchange (Alexander 2014). Option one has lower item

loading of 0.535 and is less important for respondents or likely is seen as too much of dead load for SD / DD hence is rejected by them. KMO a measure of sampling adequacy has value of 0.795 and is acceptable and Bartlett’s Test of Sphericity is also significant. Thus, factor analysis reiterated the results that emerged through weighted average as land pooling had the highest loading and hence emerge as a preferred option of combined opinion of all stakeholders.

However, the results have exposed hidden shared tendency of all stake holders to speculate. Meaning thereby a human tendency both government or private. This collective inclination can be leveraged positively for higher returns, in shorter time spans through riskier transactions by diverting land assets for urbanization via innovative variants of land assembly by offering business models of development formulated by planned development of a Region. Thus, the

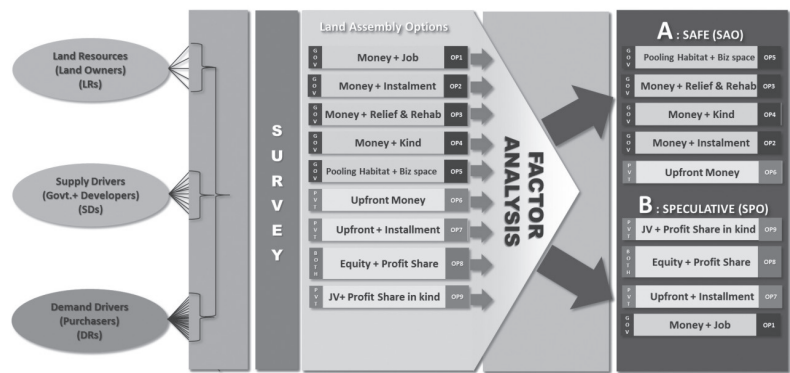


Fig 5 Shared preference of stakeholders: Two modes of land assembly: 1. Safe

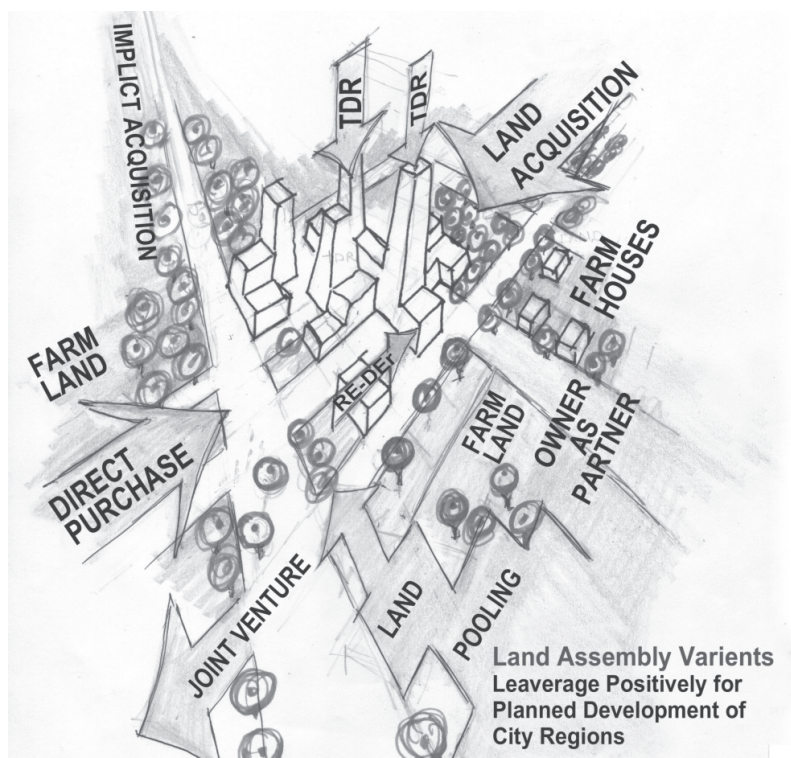
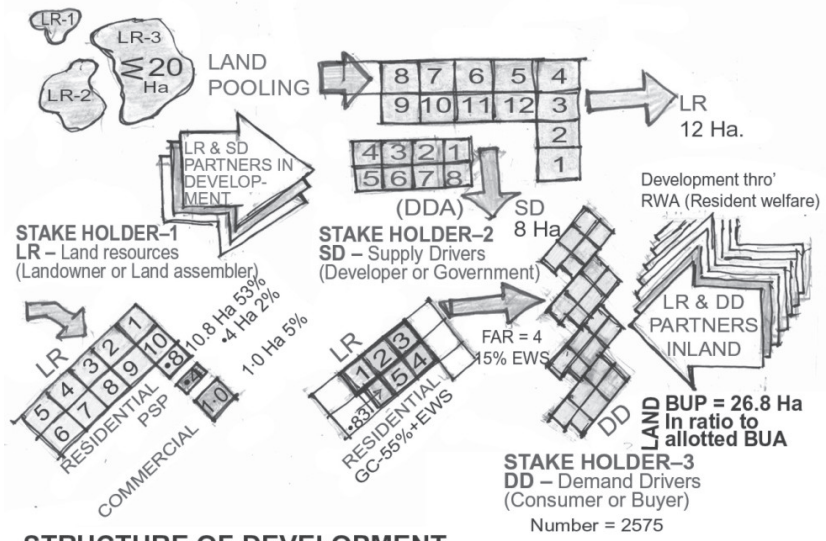


Fig 6 Sensitizing to comfort level of land owner- way to assemble and patch up urban land mosaic

Table 7 Area distribution of development projected for land pooling in urban extension of Delhi. Source : draft regulations (MPD 2021 revised) at *dda.org*

Category of land assembly (ha)	Land returned to DE	Land retained by DDA	Land returned to developer entity				Total BUA	Max population
			Gross residential		City level commercial			
			Land (Net area)	Residential Facilities BUA	Land	BUA		
20 ha and above	12.00 ha 60%	8.00 ha 40%	10.60 Ha	26.80 BUA	5.0	2.50	34.95	15 518.00**
2-under 20 ha	0.96 ha 48%	1.02 ha 52%	5.83	4.65***	3.0	0.15	2.79	1 256.00**

~ Land pooled for the illustrative example is assumed at 20 ha for Category I and 2 ha for Category II. \* Residential BUA includes 15% of BUA for EWS Housing. \*\* Calculated at maximum density of 1000 persons per hectare of gross residential land and density for 15% FAR reserved for EWS calculated at unit size of 32 sqm. \*\*\* Calculated as per MPD-2021 norms of 3 sqm per person for facilities.



**STRUCTURE OF DEVELOPMENT**

Partnership between stakeholders  
Landowner + Developer/Government + Buyer

Fig 7 Structure of inclusive development

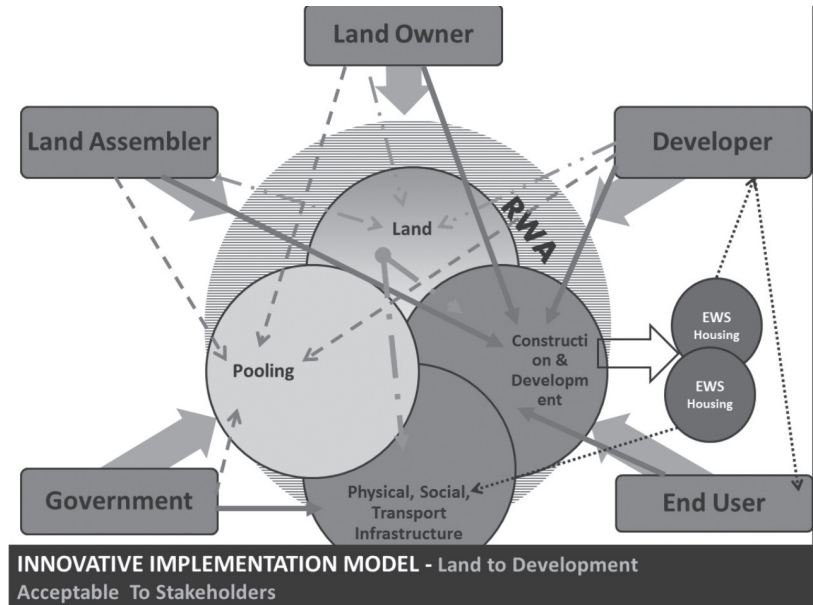


Fig 8 Framework of shared implementation of land pooling in Delhi for rural urban continuum

urbanization mosaic can be patched up by offering direct land purchase, land acquisition, land pooling or land owner as shareholder or partner in development- in the same city location (Fig 6). The farmland can coexist with urbanization for fresh supply of food and dairy products as urban farming has easier access to markets with higher returns.

Emerging structure or model of development: The area distribution for development in draft regulations (MPD 2021 revised), projected for land pooling in urban extension of Delhi has been tabulated at Table 7. Since the scheme is under formulation the marketing/ prelaunch of real estate is not permissible, new innovative framework of shared development are emerging in which the concept of stakeholder as partner is touching new heights by encompassing not only land owner or assembler (Stakeholder1-LR) or government or developer (Stakeholder2-SD) but also bringing under its fold consumer/buyer (Stakeholder3-DD) (Fig 7).

Pending formal notification of policy, DD or end user is being made a partner by giving ownership of land in proportion to the proposed allotted floor area ratio (FAR)/built-up area (BUA) of the selected real estate product. Through this medium the Land Assembler LR is pre-empting the likely exorbitant escalation in land price once Land Pooling is officially declared open. By selling notional land fragment he is financing the purchase of land through DD at the same time keeping on right side of a fine line of what can be legal? Thus, opting for safe option (SAO) also obtained through factor analysis.

The final development and construction would be through the constitution of RWA (Resident Welfare Associations) to be democratically formed out of final DDs of residential component mix approx. 2575 in number. Derived if popular product mix is assumed say 25% 2BHK+Study (92.5 sqm), 50% 3BHK + EWS (144 sqm), 25% 4BHK + EWS (176 sqm) and 7.5% additional EWS (36.80 sqm) for Government. Yielding a mutually acceptable framework of shared development (Fig 8). BHK is bedroom house kitchen.

The PSP and Commercial component is being retained by farmer as LR or Developer for future commercial exploitation. Thus speculative option (SPO) is also obtained through factor analysis in the same project. It is noteworthy that in some cases LR and SD had merged to form one entity by evolving as land assembler as developer with government providing common infrastructure by levying external development charges which is being paid by DD. Land assembly and readjustment is a useful tool, for it reduces the financial pressure on the government to provide public facilities and facilitates sharing of the benefits and costs of a project (Lin 2005). Government retains small interests in commercial and housing but total control on Industrial lands there by playing its role as provider for social, infrastructure and economic development. There can also be a possibility to retain pockets of farmland of those farmers wishing to continue agriculture within close vicinity.

Summing up it can be inferred that in this era, where there is a mismatch between demand and supply, spiraling land prices and speculative nature of land markets in urban areas of the developing world legal access to land is challenging. Land pooling is emerging as Preferred Mode of Development and, the present research is indicative that land pooling is a possible solution to ease the problems of land assembly. It is a win-win situation for all where R&R-relief and rehabilitation is not a stigma or dole, or previous land owner perceived as an oustee but is a flourishing part of the society on equal footing, i.e. land owner as a partner in development.

Thus, development framework of land assembly is sensitive to local sentiments and the stakeholder is suitably compensated through innovative land policies. Thus the hypothesis that there may be common emerging mode acceptable to all three categories of stakeholders has been accepted.

This paper will help the researchers to get useful inputs

in terms of land assembly for the development from local to regional scale respecting landowners concerns. It would be meaningful to further follow up the evolving land markets in view of policy level initiative taken in the past and the new law “The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013”. It would also be interesting to delve into the follow-up action taken by the governments in accordance with the provisions in this law and new initiatives to absorb the fallout of the same. An analysis of the extent to which the government sector or the private sector or the entrepreneur is prepared to reconcile to the higher implication of land assembly or sentiment of agriculturist under the new law or some rollback is expected, which the present study also helps to explore.

So the land use patterns must always be understood as the outcome of both political and economic frameworks as well as the reactions of local stakeholder (Bittner Sofer 2012).

On a global stage there is further a need to introspect whether current system of agriculture would continue or new less land intensive processes are required to release land for urbanization. This study will set the scene for future research, that if high rise building, greater densities with smaller footprints are call of the day or what would be the measure of fair and judicious land distribution balance between rural and urban requirements? or can farming be soil/land independent and also go vertical? How the rural-urban continuum is to be achieved or synergy generated for mutually beneficial interdependence for country, would be a key to inclusive economic growth. This may also pave the path for future research in which the urban and agricultural researchers to work in tandem for discovering unified solutions to joint economic mobility.

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