

A Study in Development by Dispossession

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1. The Setting of the Problem.

Capitalist development as a transformative process of earlier modes of production has been analysed from different angles through ages. Adam Smith viewed this as a process of gradual establishment of the market system coordinated by the price mechanism that provides a suitable framework for raising labour productivity through the division of labour and specialization. David Ricardo foresaw growing pressure on limited natural resources (land) as an inevitable outcome of this process which would raise the rent on land resulting in distributive conflict between the landlords and capitalists and stifle economic growth. Although Karl Marx is known for placing the distributive conflict between the capitalists and workers at the centre of his political analysis, he diagnosed historically this transformation as an intertwined process of class formation and accumulation. It originates in the violent dispossession of peasants from their land. Dispossessed of their traditional means of livelihoods they are gradually forced to join the industrial working class, while the 'primitive accumulation' by the emerging capitalist class is made with the aid of the legal and repressive power of the state. Economists in modern times seldom return to analyse the origin of capitalistic development. Instead most tend to celebrate capitalism as an on-going process raising continuously the productive capacity of the economy. Schumpeter in particular admired it as a process of 'creative destruction' driven by continuous innovation and entrepreneurship. In the context of underdeveloped economies Arthur Lewis sketched in a similar vein the transformation as a process driven by the terms of trade between agriculture and industry as the centre piece of the price mechanism in a dual economic structure with unlimited supply of labour in the traditional sector being gradually absorbed in to the modern industry as wage labour at a constant real wage rate.

To varying extent these visions highlight important aspects of a complex process of transformation. At the same time however many elements in each narrative is specific to the time and place of the observer. Naturally none fit adequately the specificities of other experiences. Against this background, in this paper we propose to analyse a

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central aspect of a similar transformation process through land acquisition that is underway in India.

As a predominantly agrarian economy with massive poverty, India is attempting to modernise its economic structure through achieving higher economic growth in the specific context of a significantly more globalised world economy and an internal political set up of a functioning multi-party democracy. Achieving a higher rate of economic growth has been identified by successive governments as central to this strategy particularly since 1991 when market oriented liberalisation of the economy became more or less the official doctrine. Our aim in this paper is to analyse this process of economic growth in which land acquisition plays a central part.

The term 'accumulation by dispossession' leaves open the question of the routes by which dispossession is carried out by one class against another usually with the help of the state.¹ The method of dispossession varies from case to case and various methods usually coexist. The imperialist state often resorted to direct force for dispossessing the peasants in the colonised state of their land for natural resources. It appeared primarily as a conflict of the coloniser state against the colonised people and gave birth to anti-colonial struggles of emergent nationalism. Colonial exploitation supplemented direct force whenever necessary with the colonial revenue and trading system. Extensive rural indebtedness and a structural deficit in international trade were the result. Rural indebtedness of the direct producers has continued to be an important method of alienating land from the peasants. 'Primitive accumulation' by which the state redefines rights to land to dispossess the peasantry is yet another route but the situation changed with political independence. The question remains in what way dispossession still continues.

In the multi-party democracy of modern India land acquisition using state power under various legal and semi-legal guises has become the dominant method in recent years. In this respect it bears resemblance to the method of 'primitive accumulation' described by Marx (1977). However, important variations have been introduced on account of a multi-party democratic system and the pre-existence of a developed capitalist class. Private as well as communal land and related common property resources are acquired by the state for 'public purpose'.² They are subsequently

transferred in most cases to private corporations on favourable terms to stimulate growth and development. 'Land' can be used as a reasonable proxy for natural resources because almost all significant common property resources like common village land, forests, mountains, rivers, water bodies, coast lines, underground mineral resources etc. require access to land in some way. Legally land acquisition and dispossession proceed by diluting or denying both individual and communal property rights to land in 'public interest' through successive revisions of the land acquisition act. In more extreme cases the land is simply acquired by blatantly bending laws with the compliance of the government. In this respect the primary role of the state has not been to promote efficient working of the price mechanism in the land market, rather to suppress the price mechanism through acquisition at arbitrary price. False, indefinitely delayed or partially implemented compensation price and procedures full of bureaucratic harassments for the ordinary peasants leave the system open to manipulations at every step.

In the developmental politics that is played out in this context laws for acquisition are enacted to suit 'public purpose' or even 'public private partnership' as defined by the state. It is presented as the compulsion for achieving higher economic growth needed for the development of even those who are being dispossessed. The state defines public purpose in the name of development and intervenes to acquire land for promoting development. The old Ricardian conflict between landlords and capitalists makes its appearance but the 'landlords' in this case are usually small peasants and tenants. They are mostly poor people who depend for their livelihood on agriculture and common property resources in various ways. In addition to ordinary cultivating peasants, they may be tenants and agricultural workers, fishermen, boatmen or vegetable cart-pullers. They all derive a meagre livelihood based on transporting agricultural produce to local markets; at times nomadic tribal with animal husbandry as their sole livelihood in arid areas. In this way the epicentre of the conflict of dispossession becomes a confrontation between the state and ordinary poor people in the countryside.

'Land' as a general proxy for natural resources has an apparently paradoxical aspect. It often appears that less land is required for the same activity in the modern sector in urban areas. For instance, high-rise urban dwelling, urban markets or malls save space

compared to similar activities in rural areas. This impression is misleading because the supporting supply lines of power, water and other infrastructure need land indirectly in such activities. Electricity generation would require hydroelectric power from dams on rivers; mines for coal for thermal power, iron ore, bauxite for construction and machinery occupying land not only in mining areas but also requiring transport facilities; similarly food processing, coastal fishing need transport, even refrigeration facilities which in turn require electricity. Such examples can be multiplied. These indirect requirements are in addition to land needed for direct activities and facilities in urban areas like roads, transit system, bridges and so on, which in turn require coal, iron etc. Together they usually add up to considerably higher natural resource intensity per unit of output in industrial production especially in urban areas. This amounts to more land needed indirectly to save land directly.³

Use of land as a composite proxy for all natural resources also implies that a variety of livelihoods are destroyed in the natural sector when land is acquired for industry. And yet, a development strategy that is premised on the assumption that the 'investment climate' for private corporations can be improved by transferring land in their favour implies that a variety of livelihoods must be destroyed first as the 'cost of development'. This is an extension of the standard assumption that improving the climate for private investment has to be the central piece of development strategy which has shaped conservative fiscal policy (Kalecki, 1943). It tends to downplay the role of public investment and nationalised industry, encourages a hostile attitude towards the role of the public sector and budget deficit combined with subsidization supported at times by privatization to favour private business. In an apparent paradox land acquisition by the state for 'public purpose' provides a relatively new avenue. The paradox vanishes when it is realised that the aim of the public purpose is to favour the improvement of the investment climate for the private sector. This is done mostly by handing over the land acquired by the state at low price to large private business and corporations as incentives for them to invest. This is often accompanied by almost free water, electricity, road connectivity and other infrastructural facilities partially or wholly provided by the state in addition to tax and fiscal incentives to encourage private investment particularly in infrastructure.⁴

Nevertheless, creation of adequate new employment in place of the livelihoods destroyed becomes the most vulnerable point. With the technology highly mechanised and automated relatively few jobs are created. Jobs created in the corporate sector have high labour productivity and high wages; but wages are seldom in line with productivity rise. The surplus generated from higher productivity in relation to wage cannot be absorbed by demand generated in the domestic market. Since expansionary fiscal policy is also ruled out in the conservative fiscal regime neither private nor public consumption demand expands sufficiently. At the same time, foreign trade fails to provide an escape route to deficiency in demand, except for a handful of fortunate countries that succeed in achieving sufficient export surplus to offset the contraction of domestic market (India is not one of them with import exceeding export with current account deficit in most years). In this economic climate, incentive for private investment tends to weaken against the barrier of insufficient demand. It becomes all the more important for the government to overcome the problem of demand deficiency by providing investment incentives to private business. Cheap access to natural resources and land transfer becomes crucial.⁵

However, providing large corporations and industrial houses favourable access to land and natural resources in this way has negative repercussions on traditional employment and livelihood. On balance it destroys more livelihood than creates employment. It is 'efficient' in so far it entails higher productivity of those employed in the corporate sector compared to those in the traditional sector. Even aggregate output increases in many cases and GDP records high growth but employment and opportunities for livelihood decreases. Schumpeter's vision of capitalism as a continuous process of creative destruction comes into play as jobless output growth. As the destruction of livelihoods of the number dispossessed continuously out-paces the creation of new jobs through corporate led industrial development, unemployment grows along with output. And, the more the government tries to reduce unemployment and demand deficiency by raising the incentive to invest through transferring land and other natural resources, the greater becomes the number of those dispossessed without jobs. Creative destruction driven by corporate led growth begins to appear like a trap in which an increasing number of people are caught.

Along with unemployment and excess supply of labour, another imbalance typically arises because the direct and indirect natural resource intensity of output produced is higher in the corporate sector on account of both the nature of the technology used and the types of goods produced. In addition, large corporate industries have as prerequisites large infrastructural investments in economic and social overheads. The pressure this creates for natural resources leads to destruction of nature, forests, mountains, rivers and coastlines. Traditional tribal and rural communities who do not have a strong political 'voice' and often live in areas exceptionally rich in natural resources make them particularly vulnerable to this intensified hunt for natural resources. The destruction of these communities proceeds along with attempts to increase corporate led growth.

The other side of dispossession of people with no 'voice' is the continuous creation of a surplus labour force arising from destroyed livelihood in the traditional sector. However dispossession through land acquisition does not necessarily create unlimited supply of labour at a constant real wage rate available from the traditional sector as had been postulated by Lewis (1954). It is mostly not a process of creation of wage labour from a passive reservoir of labour in the traditional economy, but a process of altering both the form and the content of supply of labour. In the migration that occurs to urban industrial areas, individuals or families mostly do not work as part of the regular industrial work force but rather coexist uneasily with it because they have been driven largely by 'push' away from the traditional sector instead of being the 'pulled' by expectation of higher wage in the modern industrial sector. Destruction of traditional livelihoods forces people to eke out an alternative existence wherever they can, and in whatever way possible. The earning opportunities vary enormously depending on the circumstances. The outcome is a proliferating informal sector as an integral part of the dispossessing growth process. The diverse range of economic activities and labour forms in the informal sector defy easy characterization. Never the less, three features seem relatively common.

First, the unit of labour used for production is often different from wage labour in factory employment. 'Self-employment' is a prominent form implying the whole or a significant part of the family including children together form the unit of labour used. Generally this entails longer hours of work for the family unit as a whole with earning

per hour per person lower compared to that of wage labour, but total earning at times higher with no valid distinction between profit and wage.

Second, many in the informal sector, who are not self-employed, do not often have a single employer. They combine several different part time occupations with different employers on different terms. Some might also combine part time self-employment with contract wage labour. Assigning 'principal status' to the nature of their occupation is problematic in all such cases, e.g. time disposition by different occupations might differ substantially from the income earned from those occupations.⁶

Third, the 'legality' of their occupation is often in question without proper legal entitlements to paid or unpaid access to resources. Bribes and side payments in various forms are recurring costs which depress net earnings substantially in some occupations.

Most of those who join the unorganised labour force of the informal sector in urban and semi-urban areas live in illegal shanty towns. They try to have urban facilities like electricity, water supplies, schools, hospitals to which they are often not considered legally entitled. Yet their economic activities depend crucially on their access to urban economic infrastructures like water, electricity and transport. While as illegal occupants in urban areas, they may not have legal access to some of these urban facilities, they cannot survive without them. Illegality becomes an unavoidable compulsion of the situation as it gives rise to the strange spectacle of a large number of citizens of a democratic country being forced to make a living by breaking laws! Not surprisingly it gives the 'law and order' machinery a special, often arbitrary power to threaten and blackmail them at will, while a relatively new brand of politicians make their entry into democratic politics as 'service providers'. They work through the labyrinth of legality, illegality and bureaucracy as go-between agents, bribe givers as well as bribe takers, responsible for providing these services. At the same time, another class of agents emerges in areas where land has been acquired. They act as agents dealing with purchase, lease or sale of land in various capacities and, operate in large numbers particularly in real estate development as middlemen for housing complex, shops, malls, private schools and other allied activities. An array of local lawyers also finds this business lucrative enough. In this maze of legality and illegality the law enforcing machinery gets entangled with the new politics of patronage that develops around land

acquired by the government for 'public purpose' for private profit.⁷ Some more successful service providers achieve prominence in local politics and graduate to higher levels by pressing for bending rules for their supporters while law makers at higher levels often yield to the pressure of their support base by enacting and amending laws. The distinction between illegal and legal corruption begins to disappear fast.

The relation between the formal and the informal sector often turns out to be ambiguous, a mixture of conflict and cooperation at times. For instance, they may compete in the market for final product and infrastructure facilities but have a mutually beneficial cooperation in terms of sub-contracting arrangements of half-finished inputs or part time labour contracts. These relations are difficult to characterise as they vary from enterprise to enterprise. Nevertheless, competition over urban space, infrastructure and natural resource availability are sufficiently general features that seem to dominate the overall scene. The growth of the informal sector affects adversely the productivity of the corporate sector by expanding its claim on resources while the corporate sector grows by contributing to the growth of the informal sector through dispossession. Such a pattern of inter-dependence becomes the characteristic feature of development by dispossession.

A typical outcome of absorbing labour displaced by dispossession into the informal sector is steady deterioration of urban facilities, quality of life and pollution on account of over-crowding and congestion by so-called 'illegal' users of urban space and infrastructure. External diseconomies of various kinds arise in so far as the organised large business sector is concerned. Labour productivity in that sector is affected negatively through congestion and infrastructure bottlenecks. Irregular supply of power and water, transport bottlenecks resulting in delays that upset regular production and delivery schedule; poor housing, sanitary conditions and pollution cause ill health and absenteeism of workers. These factors contribute to depressing labour productivity below its technologically feasible level. Acute infrastructural bottleneck is loudly lamented by industrial lobbies and seen as a major hurdle to improving the investment climate. The typical response of the government is to intensify attempts at land acquisition in support of the strategy of corporate led growth which aggravates the problem further.

The urban problems are accelerated by growing rural distress. Those among the dispossessed left behind in rural areas are often too young or too old, without any experience of outside life, isolated spatially or linguistically. They are the most vulnerable, sacrificed at the altar of corporate led development with their means of livelihood destroyed as land, river, forest, coast line and other common property resources are acquired by the government and large businesses. Common grazing lands vanish, reducing viability of raising animals in the village to supplement income and threaten many nomadic groups with extinction in arid areas. Agricultural communities lose their livelihood due to diversion of land to mining, pollution of water bodies and construction of dams on rivers for hydroelectric power. The latter is seldom meant for them but to supply power to large industries and cities. Traditional fishing communities are threatened as coasts are taken over by large scale mechanised fishing and big hotels catering to the tourist industry. Reduced access to forest products and dwindling forest land snatch away the meagre livelihoods of forest dwellers. Forest dwelling population lose on an average around one thirds of their meagre income. With less land, water and other natural resources available villagers are forced to survive by diversifying their sources of livelihood through non-agricultural activities. In a way it becomes a mirror image as the importance of the informal sector increases in the rural economy.⁸

Intensification of the drive to capture land either by the government or the corporations does not necessarily mean that more land would be used for industrial development. The profit motive of private corporations determines how to use the land they acquire for public purpose. This usually results in violating or bending laws through illegal mining, exports of minerals meant for domestic use, diversion of land earmarked for industry to real estates. Often the route to highest profit is simply leaving the acquired land unutilized for future capital gains or selling mineral products by leaving it under the ground through various option schemes in futures markets. It amounts to sitting on mineral deposits or preventing its full exploitation contradicting the stated purpose. A significant amount of transferred land to corporations remains unutilised for these reasons in the face of acute shortage of natural resources.⁹

Nevertheless, even as only a fraction of transferred land is used for corporate led industrialisation, transferring land and natural resource to private corporations becomes one of the most potent political weapons. As the biggest sources of massive

transfer of wealth in favour of politically favoured corporations it forges mutual dependence between the state and selected capitalists, often known as 'crony capitalism'. It is also a mainspring of policy-induced corruption and huge scams. This corruption is not just illegal and personal, but legal and systemic because it stems from deliberate twist to policy is given by the government to promote corporate interests justified in the name of improving the investment climate. Ironically, the climate for investment gets twisted too in this process. Corporations seize the opportunity not to make profit through production but follow the quicker route to acquire wealth through cultivating the government for the benefit of favoured access to land and other natural resources. This form of corruption spreads through the system of governance as it involves players at several levels, the political class formulating policies for land acquisition, the bureaucracy in charge of implementing them, and the politically favoured corporations as the main promoter of this policy as potential beneficiaries. In this systemic arrangement the corporations need to return the favour not merely at a personal level to cut particular business deals by bribing concerned politicians and bureaucrats but foster systemic corruption of policies by using a general strategy of making handsome donations to political parties of all colours, and perhaps more donations to their favoured party and politician. As the compromised political class and obedient bureaucrats become accomplices for enacting and implementing land acquisition laws and policies, the distinction between making profit from production and the possibility of accumulating wealth through transfer of land and related resources begins to disappear. In short, dispossession of the poor remains but their development becomes almost incidental.

In the competitive electoral game of multi-party democracy, no party wants to be left handicapped in collecting funds for elections. Land and natural resource policies of every government in power are influenced heavily by this consideration. While in opposition all political parties tend to take a critical stance, in power they fall in line quickly under similar compulsions. The result is a growing disconnect between the vast majority of people threatened with dispossession and destruction of livelihood based on land, and the elected representatives of the people in government. The growing gulf between them has to be managed in a democracy of mostly poor people by changing the nature of representation in content but keeping the form. This is done by relying more

and more on a powerful corporate oligarchy. Their contributions to the election funds of political parties raise massively electoral expenditures. The 'entry price' to election is raised to serve as a barrier to direct political representation by ordinary citizens. Corporate contribution through paid advertisements in media is a powerful factor manipulating public opinion for success in elections. An increasing number of big industrialists or their agents also enter directly the parliament. They can secure tickets in exchange of handsome donations to fight elections under the banner of various political parties to become 'representatives of the people'.

Along this process of development by dispossession, big business does not only transform the nature of democracy, but also undergoes significant transformation itself. The focus shifts from making profit in production to acquiring wealth through natural resource transfer in its favour facilitated by the government. Labour movements and traditional trade unions are increasingly at a loss as the major source of profit shifts from exploitation of workers on the factory floor to land grabbing from people. Fierce competition operates less for increasing market shares, but more in cultivating the government for transfer of land. New entrants at times do better in this competition than the traditional heavy weights of the corporate sector due to their political closeness to ruling power. They are elevated quickly to the class of extremely rich in a short time by acquiring wealth through land transfer which would have been impossible through gradual accumulation of profit from production. India has had one of the largest increases in the number of dollar billionaires in the world in recent years. Their number increased from 8 to 52 in less than a decade. Many among these newly emerged 'individuals of exceptional net worth' are connected with transfer of land and natural resources (Gandhi and Walton, 2012). Privatization by undervaluing assets of state enterprises had been a major route to creating overnight billionaires in Russia in recent years. The Indian way has been 'growthmanship' of transferring land in the name of higher growth. The irony of the situation is apparent. The investment climate is being perverted in the name of improving the investment climate by making land acquisition far more profitable than production.

2. A Model.

For expositional simplicity no distinction is made between the organised industrial sector and its corporate sub-sector. Both are lumped together as having the common characteristic of higher productivity per worker than that in the traditional natural economy where people are being dispossessed. The natural sector includes small scale peasants, tenants, persons whose livelihoods are derived in many ways from land, river, water bodies, forest, mountains and coast. They generate activities like collection of forest products, fishing, animal husbandry etc. We concentrate on destruction of livelihoods on account of land acquisition in the natural economy in various ways. For expositional simplicity we assume an 'equilibrium' situation as the starting point or initial condition of the formal analysis. It allows us to focus on (discrete) changes in the relevant variables brought about by land acquisition.

Let n and c be subscripts for the natural and the corporate (or organised) sector respectively, and x_j be the labour productivity of sector j ($j = c, n$). If ΔL_n is the number of labour dispossessed from the natural sector, and ΔL_c the number employed in the corporate sector, the changes in net output and employment caused by dispossession becomes,

$$(1) \quad (x_c \Delta L_c - x_n \Delta L_n) = X, \text{ with } x_c > x_n \text{ by assumption.}$$

$X > 0$ implies growth of output, $X = 0$ implies stagnation, while $X < 0$ means decline in output. Since in the proportional rate of growth of output is

$$(2) \quad g = ((x_c \Delta L_c - x_n \Delta L_n) / (x_n \Delta L_n)), \text{ they correspond to positive, zero or negative growth rate of output.}$$

In particular, if all dispossessed workers from the natural sector are employed in the corporate sector without any time lag, $\Delta L_c = \Delta L_n$, and the rate of growth of output is at its maximum, $g_{\max} = [(x_c/x_n) - 1]$ with no unemployment. If none of the dispossessed find employment, $\Delta L_c = 0$ in (2) and the rate of growth is at its minimum, $g_{\min} = -1$ with unemployment at its maximum. In most actual situations to be analysed the growth rate would lie between these logical extremes.

Let a_j be the amount of land related natural resource directly and indirectly required per unit of output. Like labour land is not assumed to be produced inside the production

system, and in a linear production system the direct and indirect land requirement may be computed approximately through the Leontief inverse matrix of the input output table under certain assumptions.¹⁰ Let,

(3) $a_j x_j = k_j$ = direct and indirect land or natural resource requirement per unit of labour employed in sector j.

Using (1) and (3) the natural resource relation resulting from dispossession and development is given as,

(4) $k_c \Delta L_c - k_n \Delta L_n = K$, where $K > 0$ indicates excess demand, $K = 0$ indicates exact balance, and $K < 0$ indicates excess supply of natural resource or land .

A simple arithmetical example based on (1) to (3) illustrates a typical configuration of employment and natural resource.

	Corporate sector	Natural sector
Employment	$\Delta L_c = +4$	$\Delta L_n = -10$
Labour productivity	$x_c = 6$	$x_n = 2$
Output gain and loss	$x_c \Delta L_c = (6)(4) = 24$	$x_n \Delta L_n = 2(-10) = -20$

This implies from (2) a growth rate in output of $(24-20)/20 = 20\%$ and a decline in employment of $(4-10)/(10) = -60\%$.

Viewed as proportions the productivity ratio, $(x_c/x_n) = 10/4 = 2.5$ given in the two sectors, output level will remain unchanged so long as 250 persons are dispossessed for each 100 employed in the corporate sector. If productivity of the corporate sector is higher than 2.5 times that of the natural sector, say $(6/2) = 3$ as in the above example, it would mean unemployment with positive growth of output i.e. $X > 0$ and $K < 0$. On the other hand if the ratio is lower, say $(3/2) = 1.5$, this would mean negative growth in output with unemployment. Note, unemployment would appear in all cases with $x_c > x_n$ except when growth is at its technological maximum.

If natural resource directly and indirectly required per unit of output is $a_c = 2$ in the corporate sector, and $a_n = (1/2)$ in the natural sector, natural resource used per unit labour in the two sectors are: $k_c = a_c x_c = (2)(6) = 12$, and $k_n = a_n x_n = (1/2)(2) = 1$ respectively. Total natural resource needed by the corporate sector is $k_c \Delta L_c = (12)(4) = 48$ (from (3)) while natural resource made available through dispossession in the natural sector is $k_n \Delta L_n = (1)(10) = 10$. Therefore, in this example $(10 - 4) = 6$ unemployed persons coexist with excess demand for land related natural resource of $(10 - 48) = -38$. Although many such configurations exist, such a double deficit in employment and natural resource availability is typical of corporate led development by dispossession.

Dispossessed from the natural sector without alternative employment in the corporate sector, this uprooted population strives to eke out an existence in wherever they can. The outcome is a diverse range of economic activities that are fused together in the informal sector. Let ΔL_i stand for labour engaged and k_i for land related natural resource required per worker in the informal sector. Incorporating the natural resource requirement of the informal sector (4) is revised as,

(5) $k_c \Delta L_c + k_i \Delta L_i - k_n \Delta L_n = N$, with $N > 0, = 0, < 0$ corresponding to excess demand, exact balance or excess supply of natural resources in the presence of the informal sector.

Since we have assumed that the economy starts from an initial equilibrium there is no inherited initial unemployment. This sets an upper bound to employment in the informal sector as,

$$(6) \quad \Delta L_i = h.(\Delta L_n - \Delta L_c), \quad 1 \geq h \geq 0,$$

If h is less than unity, those who fail to join even the informal sector in any capacity are the extreme destitute without any survival strategy left for them even in the informal sector. Indeed, they are like 'sacrifices' offered to the process of corporate led development. However, for simplicity of exposition we would ignore these extreme cases of destitution and assume $h = 1$, i.e. all the dispossessed persons not employed in the corporate sector somehow find refuge in the informal sector.

In normal circumstances augmentation of the labour force through the informal sector would make excess demand for natural resources even more acute. However

expansion of the informal sector often has an unintended effect of reducing the natural resource imbalance by reducing the productivity in the corporate sector.¹¹ This operates typically through the problem of ‘congestion’ and over-crowding especially in urban housing, transports, power, water and several other economic and social infrastructural facilities. The deteriorating quality of life and pollution regretted usually by the more privileged urban middle class has consequences for labour productivity in the corporate sector through increase in absenteeism due to frequency of illness, late arrivals due to traffic congestion and overcrowding problem, disruption of power and water supply from time to time and irregular supply of inputs. They combine to reduce productivity from its technologically feasible maximum (q). We capture this congestion effect on corporate productivity through the following specific function,

$$(7) \quad (x_c/q) = [1/[1+(k_i\Delta L_i/k_c\Delta L_c)]]$$

Equation (7) specifies how actual productivity x_c decreases from its technologically feasible maximum productivity q, as the informal sector’s resource requirement ($k_i\Delta L_i$) increases from zero to some arbitrarily large positive number in relation to that of the corporate sector ($k_c\Delta L_c$).

From (7), with $h=1$, we obtain,

$$(8) \quad x_c = q(k_c\Delta L_c/(k_c\Delta L_c+k_i\Delta L_i))$$

On the assumption that natural resource demand and supply are in balance, strict equality holds in (5).

$$(9) \quad x_c = q((k_c\Delta L_c/k_n\Delta L_n) \text{ at } N = 0).$$

Thus the realised labour productivity of the corporate sector x_c is reduced from its feasible maximum q by a factor representing its share in the total natural resource made available through dispossession ($k_n\Delta L_n$).

The reduced labour productivity x_c in (9) due to the ‘congestion effect’ resulting from claim made on natural resources by the informal sector can be interpreted as an

‘equilibrium’ value adjusted to bring about natural resource balance at $N = 0$. In view of (3), we rewrite this supply side balance equation for natural resource (9) as,

(10) $\Delta L_c = w \cdot \Delta L_n$, where $w = (k_n/k_c^{\max})$, and $k_c^{\max} = a_c q$, i.e. the maximum natural resource requirement per unit of output of the corporate sector when its labour productivity is at its feasible maximum q . Since $k_c^{\max} > k_n$, the straight line on the $\Delta L_n - \Delta L_c$ plane is a ray ON passing through the origin with a slope less than $\tan 45^\circ$ (see Diagram 1). It represents the locus of equilibrium configurations at different levels of dispossession ΔL_n and employment offered by the corporate sector.

The supply side story of development by dispossession so far would be misleadingly incomplete without indicating how aggregate demand for the goods produced as a result of development by dispossession interacts with the supply side. For this purpose we assume, b_j = investment required per unit of output in sector j ($j=c, i, n$). Thus total investment of the corporate and informal sector is given as,

$$(11) \quad \Delta I = \{b_c x_c \Delta L_c + b_i x_i \Delta L_i\} + \Delta I_g,$$

where ΔI_g = investment by the government related to land acquisition, and $b_j x_j$ = investment per unit of labour in sector j .

Assuming fixed sectoral propensities to save (s_j), the savings of the economy is given as,

$$(12) \quad \Delta S = (s_c x_c \Delta L_c + s_i x_i \Delta L_i - s_n x_n \Delta L_n) + \Delta S_g,$$

where ΔS_g = savings by the government especially from transactions with corporations on account of land, and $(-s_n x_n \Delta L_n)$ is the dis-saving by the natural sector due to dispossession.

For expositional simplicity we assume that the dis-saving due to dispossession of the natural sector is balanced by the saving of the informal sector, i.e.

$$(13) \quad (s_i x_i \Delta L_i - s_n x_n \Delta L_n) = 0$$

Equality of investment (ΔI) and saving (ΔS) determines output through aggregate demand in the corporate and the informal sector. From (11), (12) and (13), $\Delta I = \Delta S$ implies,

$$(14) \quad [(b_c x_c \Delta L_c + b_i x_i \Delta L_i) - (s_c x_c \Delta L_c)] + G = 0, \quad G = (\Delta I_g - \Delta S_g)$$

In view of (6), at $h=1$, this is rewritten as,

$$(15) \quad u \cdot \Delta L_n + v = \Delta L_c, \quad u = [b_i x_i / (s_c x_c - (b_c x_c + b_i x_i))], \quad v = G / [s_c x_c - (b_c x_c + b_i x_i)].$$

Note that the sign of the square bracketed term in the denominator, $[s_c x_c - (b_c x_c + b_i x_i)]$ may be assumed positive in so far as it satisfies the usual one variable Keynesian income adjustment stability condition that saving is more responsive than investment to change in output (per worker).

Equation (15) shows the demand determined level of corporate employment ΔL_c that is consistent with the level of land acquisition and dispossession ΔL_n carried out by the government. On the other hand, equation (10) shows the corporate level of employment ΔL_c at a reduced labour productivity due to congestion cost that is consistent with the available supply of natural resources through dispossession. The interaction between (10) and (15) captures corporate employment proceeds with land acquisition. The resulting dynamics may or may not have an 'equilibrium' or rest point which would be stable only under certain conditions. We may represent it heuristically in following diagram 1 where ON represents equation (10). AD represents equation (15) assuming the intercept to be negative with government saving exceeding investment by the government on land acquisition.

(DIAGRAM 1 HERE)

The discrete dynamics presented above works in the following way. At an initial level of land acquisition P_0 along the horizontal axis, the demand determined level of corporate output is D_0 which necessitates land acquisition P_1 maintaining natural resource balance to make this level of output feasible from the supply side. However, this pushes up demand determined corporate employment further to D_1 which in turn raises further the demand for natural resources. The equilibrium point E is clearly unstable both from the right and from the left side. Instability arises because the slope of AD (measuring roughly corporate demand for natural resources at any given level of dispossession) is greater than the supply of natural resources available to the corporate sector in the presence of partial crowding out by the informal sector. The latter depresses corporate demand for natural resources and helps to balance it with supply

by depressing corporate labour productivity arising from congestion and infrastructural inadequacy. Note however if the inequalities in the slopes are simply reversed, equilibrium may not exist because it would exist only if, along with the reversal of slopes, the intercept OA is also positive. The existence and uniqueness of equilibrium and its stability are interlinked properties, as is known from simple linear systems and demonstrated through more exact analyses.

A more exact analysis of stability is easier to conduct on the assumption of continuous time. Since both natural resource balance in (10) and employment offered by the corporate sector in (15) are functions of dispossession ΔL_n , dispossession becomes the adjusting variable used by the government to help corporate investment by bridging the excess demand gap according to the equation,

$$(16) \quad (dl_n/dt) = \theta [(u \cdot l_n + v) - wl_n], \theta > 0$$

with ΔL_n redefined as continuous variable l_n , and u , v and w given from (15) and (10).

The general solution of (16) is given as,

$$(17) \quad l_n = Ae^{-(w-u)t} + [v/(w - u)], \text{ where } A \text{ is an arbitrary positive constant}$$

Equation (17) shows that the system is stable if,

$$(18) \quad w > u, \text{ i.e. } (k_n/k_c^{\max}) > [b_i x_i / [s_c x_c - (b_c x_c + b_i x_i)]]$$

This condition is violated in the above diagram making it unstable. It also shows that a positive equilibrium at $[v/(w - u)]$ exists in the stable case only if $v = G/[s_c x_c - (b_c x_c + b_i x_i)] > 0$ which in turn under the Keynesian one variable stability condition for income adjustment requires $(\Delta I_g - \Delta S_g) > 0$ which again was violated in the above diagram to accommodate the existence of a positive equilibrium in the unstable case.

We could also carry out some standard comparative static exercises in the stable case. For instance in only a part of the land made available to the corporations through dispossession is used ($1 > z > 0$) and the rest $(1 - z)$ left unused by them for future capital gains, the stability condition (18) would reduce to,

$$(19) \quad zw > u, 1 > z > 0. \text{ Thus the condition may be satisfied for a large enough } z, \text{ and, as a comparative static exercise we confirm the common sense result,}$$

(20) $(dl_n/dz) = -[wl_n/(zw - u)]$, i.e. use of a higher fraction of land available to the corporations reduces the extent of dispossession in the stable case.

Several similar comparative static exercises may be carried out as a routine exercise in the stable case. However, the structural instability implied in this model is more instructive.

First note from (19), if corporations hold a sufficiently high fraction of the land for future use (e.g capital gains), z is small and the model becomes unstable the critical value of z is reached at $z = u$. Thus a short time limit for execution is essential for land given to corporations.

Second, from (18) it is clear that sufficiently high natural resource intensive development of the corporate sector (k_c^{\max}) is incompatible with stability. In other words, the process of land and natural resource acquisition will continue to intensify under these conditions.

Finally, the model also hints at the role played by the method of land acquisition and corruption in government finance. The characterisation of the equilibrium with the positivity of the intercept condition (opposite of Diagram 1, see 18) suggests that, if the government invests relatively little to acquire land, say through semi-requisition, force and without local consultation, while receiving back more as saving from the corporations, the net balance on natural resource and land operation would turn negative i.e. $(\Delta I_g - \Delta S_g) < 0$ which would upset the possibility of the existence of a stable equilibrium even without popular resistance. From this point of view forcible land acquisition may turn out to be counter-productive for any stable process of development.

ENDNOTES

1. Although the expression, 'development by dispossession' is borrowed from Harvey (2004), our focus is different. In some ways it is closer to Marx's (1977) original formulation. Harvey discusses many methods of dispossession including relatively modern methods like privatization of public sector undertakings. However, he does not distinguish sufficiently financial claims (e.g. debt) from physical acquisition of land, natural resource etc. In contrast our focus is exclusively on land and related natural resources. The colonial 'eminent domain' clause (1894) establishing sovereign right of the state on land in the Indian case has undergone successive revisions intending to define the limits of this right.
2. The justification for acquiring land by the state depends crucially on of the scope and definition of the 'public purpose' for which land is acquired which undergoes continuous revisions depending on the government in power.
3. The ratio of indirect land used for direct saving of a unit of land would be a useful measure, somewhat analogous to direct to indirect labour embodied which is measured in mainstream theory by the labour/capital ratio. On the computation of indirect land used see also endnote 10.
4. These operations concerning land acquisition may involve both government investment expenditure on land (I_g) and government saving (S_g) in terms of what the government receives in return from allocating the land. As will be seen later the net effect ($I_g - S_g$) plays an important role both in defining the nature of 'equilibrium' in the land market, and in the politics of land acquisition in a democracy.
5. The politics of improving private 'investment climate' rather than higher public investment for countering business cycles was recognised early (1943) as the main thrust of conservative strategy by Kalecki in 'Political aspects of full employment' (1971, original 1943).

6. Chatterjee (2011) and Sanyal (2007) have analysed the role played by the informal sector in capitalistic development in modern times and its political consequences especially for Indian democracy.
7. Levien (2012) provides some interesting insights on this point based on field surveys.
8. In India in 1951 about 72 per cent were cultivators and 28 per cent agricultural labourers. In 2011 45% were cultivators and 55 per cent landless labours. With decreasing size of average land holding, more people seek partial or total livelihood outside. The vague category of non-agricultural rural sector is estimated to absorb around 3/4ths of the increase in rural labour force. Land acquisition accentuates this process of expansion of the rural informal sector.
9. No firm estimate of unutilised land is available (some observers based on field surveys put it between 40 to 60 percent), but different motive for holding unutilized land are stated. Among them bureaucratic delays, lackof minimum infrastructure and 'law and order problem' appear most important, but interestingly no land is taken back or surrendered back to free the 'blocked capital'.
10. The Leontief inverse, commonly denoted as $(I-A)^{-1}$ is an input-output matrix showing direct and indirect requirement of various commodities as circulating capital in producing outputs. So long as various services from land are considered it presents no serious analytical problem. However if the services are exhaustable (like mineral resources) this computation faces difficulty. These problems related to capital theory in general are beyond the scope of this paper. An elementary introduction is Dorfman, Samuelson and Solow (1953) and Pasinetti (1981). See also Sraffa(1960) for a deeper understanding of its relation to labour theory of value.
11. In a stationary state of output $x_c\Delta L_c + x_i(\Delta L_n - \Delta L_c) - x_n\Delta L_n = 0$, $h=1$, which reduces to, $(x_c - x_i)\Delta L_c = (x_n - x_i)\Delta L_n$. So long as the corporate sector has the highest labour productivity, the left hand side is positive and it is necessary that $x_c > x_n > x_i$, i.e. the informal sector has the lowest productivity in case of stagnant output with full absorption of the dispossessed in the informal sector. Similarly, with no excess demand for natural resource i.e. $K=0$ and $h=1$, we would have a similar ordering, $k_c > k_n > k_i$ as a necessary condition. Note however that this necessary condition about

the ordering among the sectors is derived by postulating partial fulfilment of the condition for a stationary state either in output ($X=0$) or in natural resource ($K=0$) at $h=1$. In general however no such ordering seems possible. For instance, in the above arithmetical example, if $x_c = 3$, $x_n = 2$, $L_n = 10$, $L_c = 4$, the output gained (3×4) = 12 falls short of output lost (2×10) = 20 by 8. It would still be a case of zero growth with constant X provided some or all of the dispossessed ($10 - 4$) = 6 find employment in the informal sector to compensate exactly that shortfall of 8. If all find employment in the informal sector, i.e. $h = 1$, productivity of that sector would be $x_i = (4/3)$, if $h = (2/3)$, $x_i = 2$; if $h = (1/3)$, $x_i = 4$. It is possible to construct examples in which the productivity of the informal sector is higher than that of the corporate sector, e.g. for $h_i < (4/9)$ in this particular example with stationary output.

12. Infrastructural bottleneck is probably the most frequent complaint made by the Chambers of Commerce. It is followed by the complaint of lack of labour market flexibility which makes 'permanent' workers shirk work due to lack of the fear of job loss. See also end note 5 on this point.

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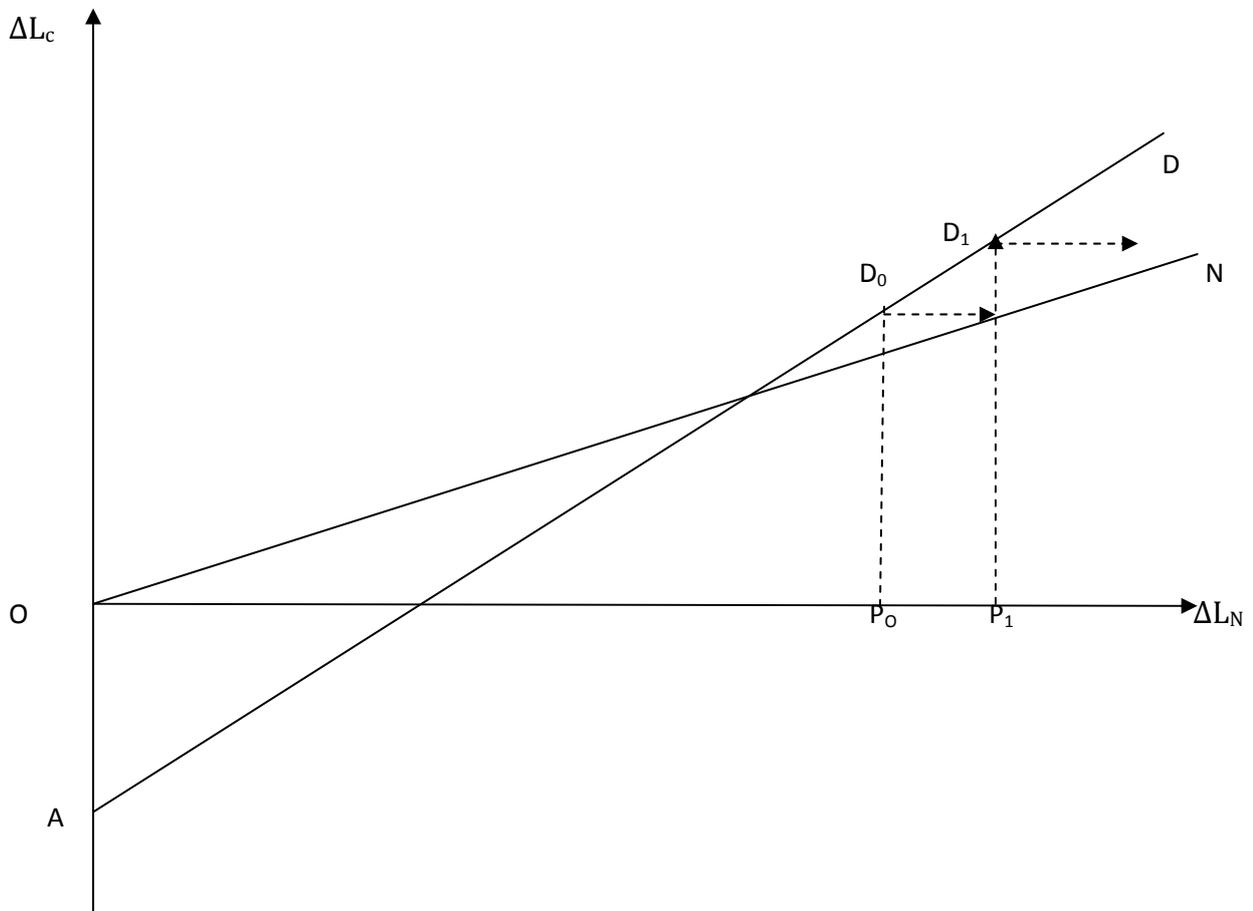


Diagram 1: Unstable

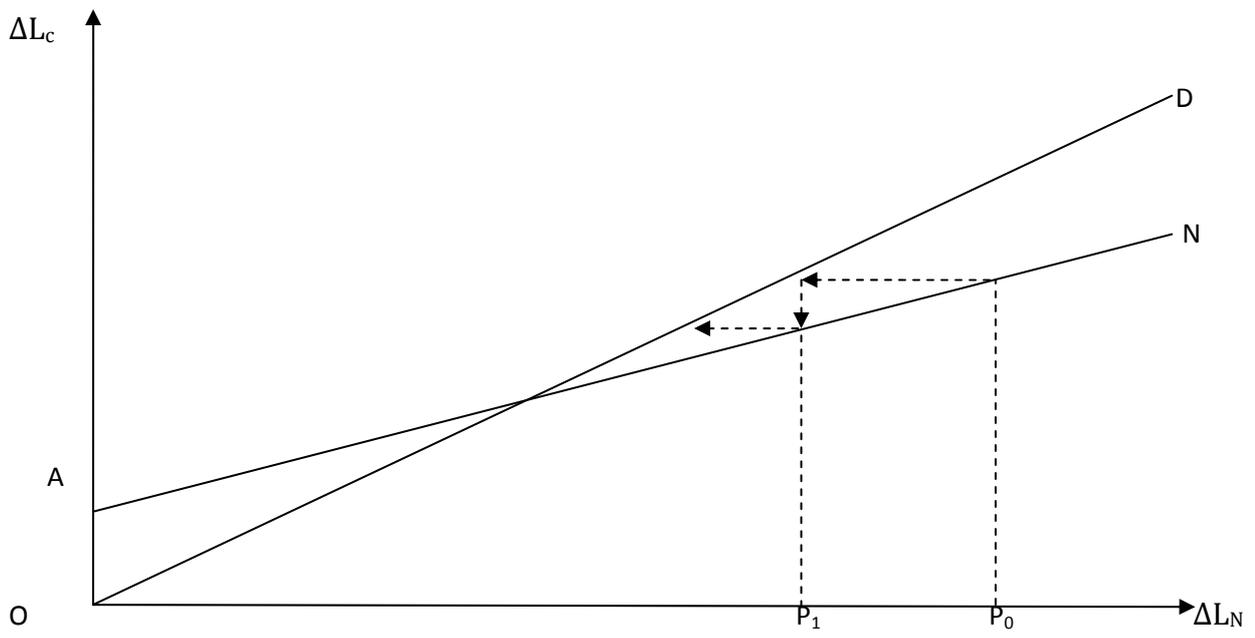


Diagram 2: Stable

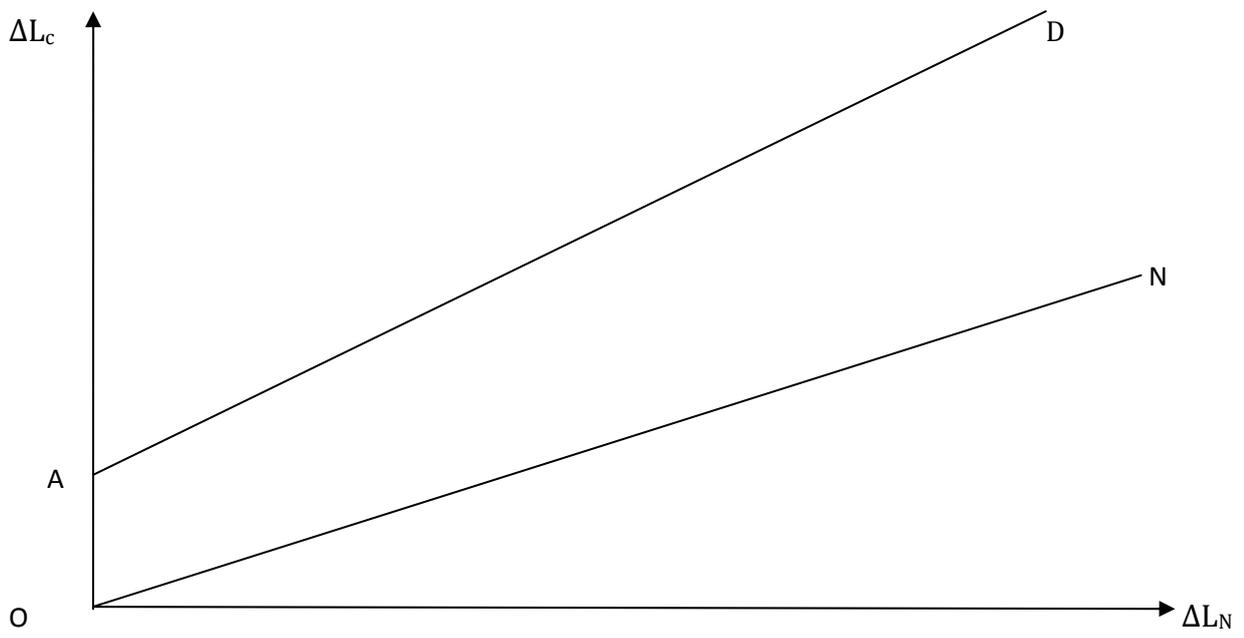


Diagram 3: Non-existence of equilibrium

