Farmer Displacement and Marginalization: A Transaction Cost Explanation from an Irrigation Project in India

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Abstract

In developing countries, the general principle followed in land acquisition for infrastructure projects is monetary compensation. The compensation is designed in a way that it enables farmers to buy comparable land assets. Despite this monetary compensation, a large proportion of farming population ends up not owning comparable assets, getting further marginalized in the process. We explain this using a transaction cost analysis of the dominant land acquisition framework in India (LAA, 1894). Based on the case of displaced farmers of Upper Krishna project in Karnataka, we show how specificities related to land characteristics, uncertainties in search for alternatives and information constrains impose high non-monetary transaction costs on farmers. We then assess whether or not the newly proposed land acquisition framework (RFCTLARR, 2015) promises to minimize transaction costs on farmers.

Keywords: *Land Acquisition, Transaction Cost Economics, Farmers Displacement*

JEL codes: *Q15, D2, O13*

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1. Introduction

After independence from the colonial regime in 1947, several big dam projects have been implemented in India. India stands fifth among the countries having most dams in the world, with more than 5000 large dams (GoI 2009). The objectives of these projects have been irrigation supply along with hydropower generation and flood control. But in this process, a large population has been affected due to involuntary appropriation of land and displaced nearly 60 million people in India since independence (Choudhury, 2013). Cernea (2004a) lists the effects of displacement as loss of land, homes, jobs, marginalization, food insecurity and community disarticulation. In the absence of effective resettlement, these are the negative impacts of involuntary transactions[2] imposed on farmers due to development projects. The efforts displaced farmers need to make in order to regain their income and standard of living are transaction costs imposed on them. Institutional arrangements for rehabilitation and resettlement (R&R) of displaced people are designed by governments to minimize such transaction costs, given the constraints of limited post-displacement opportunities, and capabilities and skills of farmers.

However, organization of the R&R component is a very complex process and is generally given less importance in project implementation (Cernea, 1997). Mainly there are three disruptions from involuntary transactions of farmers' land and houses – social, physical, and economic. Hence, in order to minimize impacts of disruption, rehabilitation of all the three types of disruptions need to be considered by project authorities (Jaamdar, 2006). Physical rehabilitation implies restoring houses and basic infrastructure facilities like water, electricity, road, and public transport. Socio-cultural rehabilitation implies restoring social capital, relations, or networks, and keeping culture and beliefs intact. Economic rehabilitation implies restoring peoples' income at least to their previous level. Until recently, in India, the Land Acquisition Act (LAA) 1894 was the broad framework for land acquisition and farmers' rehabilitation. The general principle followed for acquisition of land and other immoveable assets of farmers for infrastructure projects like irrigation is *monetary compensation*. It is implicitly assumed that monetary compensation achieves economic rehabilitation[3] and restores the original standard of living. In order to minimize the deviation from the market prices and so as to enable the farmer's ability to purchase comparable land assets, the value of monetary compensation is multiple times the registered value of the land. Yet, large

[2] Involuntary Transaction is a transaction that one participant does not wish to enter into, but is required to by some external force or dominant agent or regulations and laws (Pammachius, 2011).

[3] As we restricted this study to only economic rehabilitation, use of the term 'rehabilitation' in remaining parts of the article represents only economic rehabilitation.

proportions of them end up owning far less assets and thus get further marginalized (Cernea, 1997, Cernea, 2003, Kanbur, 2003, Mathur, 2006a). In this paper, we apply a transaction cost framework to explain why such a deviation takes place using the case of Upper Krishna Irrigation Project (UKP) in the northern part of Karnataka, India. We show how specificities related to land characteristics, uncertainties in search for alternatives, and information constrains impose high non-monetary transaction costs on farmers. We use the same analytical framework to make a preliminary assessment of the new draft legislation called the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) (Amendment) Ordinance, 2015, which replaces the older legislation. We try to gauge whether the new legislation minimizes the burdens of transaction costs on farmers.

The remainder of the paper has five sections: Section 2 describes the problem of rehabilitation in Upper Krishna Project. Section 3 discusses theoretical foundations of transaction cost approach and reviews related literature. This approach facilitates us to hypothesize that they are the high transaction costs that farmers incurred, which led to their failure to regain their income post-displacement and marginalization. Complexities of land purchase transactions and rehabilitation is analyzed in Section 4, which presents the *ex-post* transaction costs incurred by the farmers. The comparative transaction cost analysis of new and proposed R&R is done in Section 5. Finally Section 6 provides the conclusions and scope for further research.

2. The Problem of Rehabilitation in Upper Krishna Project

River Krishna is an inter-state river passing through one Western and two Southern states of India namely Maharashtra, Karnataka, and Andhra Pradesh. The river inflow is very high during the monsoon and low during the summer. In order to regulate the wide fluctuation of the river flow and provide irrigation throughout the year, the Government of Karnataka proposed an irrigation project called UKP in the year 1963. The objectives of the project were to provide irrigation to the drought prone rainfed areas, to increase agricultural production, farmers' income, and employment as well as to generate electric power. The project covers the districts of: Bagalkot, Bijapur, Raichur and Gulbarga (GoI 2010). Two dams have been already built in the region: Almatti and Narayanpur dams. In total, 833,600 hectares of agricultural land is estimated to be irrigated under the UKP providing a Full Reservoir Level (FRL) of approximately 524 meters (*ibid.*). Upon completion, the project also generates power of about 150 megawatt (MW). However, even as the UKP provided irrigation to a large area and thus benefited the farmers living in the *command area*, it has also

displaced large number of farmers, nearly a population of 487,576 and displaces 201 villages, in the *catchment area* (*ibid.*).

As can be seen in Table 1, in the first two stages of the three-stage project, 179 villages and a city have been submerged and 400,000 people have been displaced. The third stage of the project is still under implementation and is set to submerge 22 villages displacing a population of 87,576 villagers.

Table 1: UKP Implementation, Land Acquisition, and Displacement

Sl. No	Stage	Dam	Implementation period	No. of villages affected	Population displaced	Land acquisition (Hectare)
1	Stage I	Narayanpur and Almatti	1982-1997	138 (+54)	320000	38668
2	Stage II	Almatti	1997-2000	41 (+1)	80000	66338
3	Stage III	Almatti	Yet to be displaced	22	87576	45875
	Total			**202 (+55)**	**487576**	**150881**

Note: Figures in the parenthesis indicate the partly submerged villages.
Source: Own compilation from various government reports (GoK 2006, 2012, 2013).

The affected villagers are provided monetary and non-monetary compensation based on the evaluations of experts and as per the land acquisition rules of the government (kindly refer Table 5 in Section 4). However, the standard of living and social status of most of the people have deteriorated after their displacement (GoK, 2004). This resulted in several small and marginal farmers becoming landless labors. Parasuraman (1996) analyzes the cases of UKP stage I and finds that medium farmers became small and small farmers went below poverty line after displacement. Many of the landless farmers migrated to nearby big cities for construction work. World Bank (1998) evaluated involuntary resettlement impact of Upper Krishna projects of Karnataka and Maharashtra, and found that 80-90 per cent of the displaced people were not able to purchase comparable land at all and those who could, either purchased lesser quantum or poorer quality land. This shows that although the farmers have been offered monetary compensation for their lost land and houses (under the R&R program of LAA, 1894) the problems of rehabilitation remain.

This is despite the fact that the compensation design of R&R is flexible and takes two forms: the ‘consent award’ (CA) and the ‘general award’ (GA). Based on a three year average registered and prevailing market value of the land in the vicinity, an evaluation committee fixes the land value. In

the CA, farmers receive a compensation amount that is multiple times (to bring it as close as possible to market price) the fixed value of land. In return, farmers have to sign a consent agreement that they would not approach the court for claiming further compensation. In case the farmers find the compensation amount of the CA inadequate, they can reject the CA and opt for the GA. In the GA, farmers initially get the compensation just equal to the registered value and are allowed to claim higher compensation through litigation. However, the litigations could run up to several years and the amount is dependent on the several factors like cropping pattern followed by a particular farmer, location of land, etc.[4]

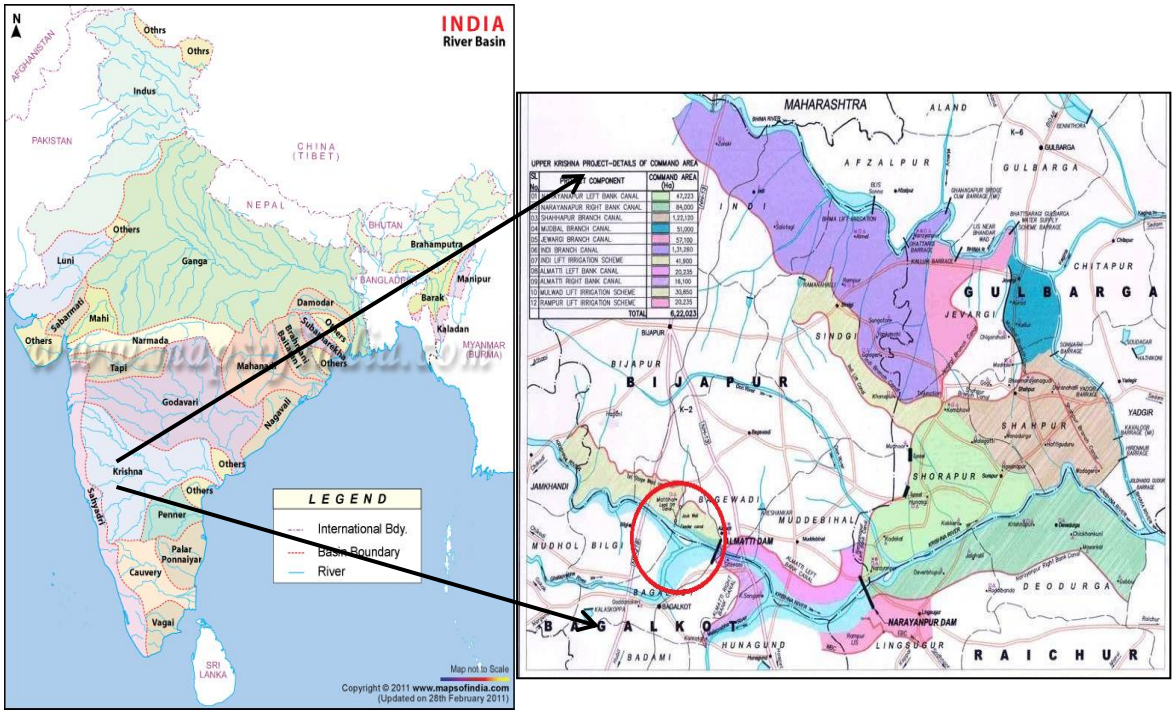

Figure 1: Enlarged View of Upper Krishna Project Index Map
Source: Modified using the maps taken from MoI (2012) and GoI (2014).

[4] Major cropping pattern in the submerged area is seasonal crops like Maize, Cotton, Onion, Wheat, and vegetables; annual crops like Sugarcane; and perennial crops like Grapes, Lemon, Pomegranate, Sapota, etc. Valuation of land with perennial crops also includes valuation of plantations and associated structures like fence, drip irrigation, supporting structures, etc. Hence land valuation is usually higher in case of plantation crops.

Table 2: Farmers' Scenario after Displacement

Sl. No	Particulars	CA			GA			t test
		Marginal & small holdings	Medium & large	Total	Marginal & small holdings	Medium & large	Total	
1	Percent of total sample	41	14	55	34	11	45	
2	Farmers not purchased land (%)	44	8	52	37	11	48	
3	Farmers purchased land (%)	33	29	62	25	13	38	
4	Farmers purchased land less than they lost (%)	32	36	68	12	20	32	
5	Illiterate (%)	50	8	58	32	10	42	
6	Less educated (upto 10^{th} standard) (%)	41	12	53	34	13	47	
7	Farmers whose income reduced (%)	43	11	54	35	11	46	
8	Minimum time taken to claim (months)	6			24			
9	Maximum time taken to claim (months)	36			$180^{\#}$			
10	Average time taken to claim (months)	11			40			0.00***

Notes: # The figures indicate only those who received the compensation amount so far. There are a few farmers who are in the middle of pursuing litigation; Marginal & small holdings refer to less those having than 2ha, and medium and large refer to 2ha and above (Misri, 2006).

Source: Author's own compilation

Since secondary data is not adequately available on the figures of the population choosing between CA and GA, we conducted 200 farmer interviews in the year 2013 in eight randomly selected villages that are displaced in UKP (Figure 1). Information was collected on farmers' pre and post displacement socioeconomic status. Questions about their choice of the award in claiming the monetary compensation and problems faced in that process were asked. Interviews were also conducted with 25 government officials and questions on the organizational aspects and issues of land acquisition, apportionment methods of monetary compensation, provisions of rehabilitation policy and their impact of displaced farmers were included.

As shown in Table 2, 55 per cent of the interviewed farmers chose the CA, while 45 per cent opted for the GA. It took a minimum of six and maximum of 36 months to claim the compensation through the CA (with an average of 11 months). For the GA, it took a minimum of 24 and maximum of 180 months (with an average of 36 months) to receive compensation[5]. In the rest of the paper, we argue that an important reason for farmers getting worse-off in spite of a flexible compensation mechanism is the high *ex-post* transaction costs imposed on them due to a faulty governance structure of compensation.

3. A Transaction Cost Perspective: Theoretical Foundations

The literature examining marginalization of people displaced due to development projects largely focuses on the compensation principle. There is evidence showing that compensation is underestimated and that resettlement policies are compensation-centered and not income-centered (Cernea, 2004b, Mathur, 2006b). Cernea (2003) shows that displaced farmers misdirected their compensation to non-income generating activities. Moreover, the value of assets appreciate after the determination and distribution of compensation, due to which farmers' purchasing power diminishes. De Wet (2006) ascribes the main cause of marginalization to a lack of national legal frameworks and policies, political will, funding, planning, consultation, and enforcement. Post-displacement loss of social capital is yet another cause (Kanbur, 2003).

[5] The figures for GA are not exact as some of the litigations have not yet been resolved.

In addition to direct compensation mechanisms and its variants, other policy measures are needed to tackle the problems of displacement (Cernea, 2003, Kanbur, 2003). Kanbur (2003) proposes "generalized safety nets" as a complement to the project specific compensation mechanisms in order to achieve equitable benefits. Cernea (2003) prescribes "development-oriented investment," along with compensation to ensure sustainable income generation of displaced people. In India, compensation for land is based on historical registered value, which neglects the subjective value of landowner and subsequently results in under-compensation. This is important as the subjective value is a part of the opportunity cost of land acquisition (Lueck and Miceli, 2004a). Several studies on land acquisition focus on the link between compensation and investment decisions of landowners before actual land acquisition and displacement (Lueck and Miceli, 2004b). However, rarely do studies focus on the link between the compensation and land owners' *post-displacement* investment decisions to restore their income. This is critical as farmers in India usually have very low levels of literacy and hence have little skills other than agriculture and allied activities. The prime input for agriculture is land. Being engaged in irrigated agriculture before displacement, most of the farmers prefer to continue in agriculture, which however, requires land. The projects base their efficiency criteria on cost-benefit analysis and ignore post-displacement organizational aspects of R&R. This is despite the fact that there is growing awareness among the scholars, as discussed above, and policy makers that the monetary compensation principle of land acquisition fails to regain income of displaced people. We therefore bring in a discussion of transaction cost economics (TCE) which helps understand how the post-displacement situation could be an important departure from realization of efficient rehabilitation.

TCE applies to the study of different kinds of economic organization of transactions (Williamson, 1985). Development projects involve involuntary transactions like the acquisition of land and houses, and displacement of farmers. TCE addresses the problem of organizing transactions, by comparative analysis of different governance structures employed in the transaction of a good or service. According to Williamson (1985) "a transaction occurs when a good or service is transferred across a technologically separable interface. One stage of activity terminates and another begins" (p.1). Organizing the transactions through a different mode of governance depends on the characteristics of transactions and the transaction cost incurred in the respective mode (Williamson, 1987b, Williamson, 1998).

There are three distinct generic modes of governance (Williamson, 1991): markets, hybrids, and hierarchies. Williamson (1991) differentiates these three modes of governance based on their contract law, adaptability to consequential disturbances, administrative control, and use of incentives (Table 3).

Table 3: Distinguishing Attributes of Leading Generic Modes of Governance

Governance attributes	**Governance modes**		
	Market	**Hybrid**	**Hierarchy**
Incentives	High-powered	Medium-powered	Low-powered
Administrative support by bureaucracy	Nil	Some	Much
Contract law regime	Legalistic	Contract as framework	Firm as own court of ultimate appeal (Fiat)

Source: Adapted from Williamson (2003)

In the market form, transactions are laterally integrated between known (or unknown) actors in a fairly impersonal setting (Williamson, 1991). For example, farmer water markets involving buying and selling of bore well water. Actors act autonomously and make their own decisions while adapting to disturbances, as they are not relied on administrative controls. A farmer decides from whom to buy water and if there are any changes in the expected prices, and quality or quantity, he accordingly adapts and buy from other sellers. Hence, there is no bilateral dependency between the actors in market as there is high incentive intensity.

In a hierarchical mode of governance, transactions are vertically integrated, and highly administratively controlled with bureaucratic costs (Williamson, 1991). For example, a way of organizing irrigation water by a farmer through drilling a borewell on his own farm, instead of buying water from others through some arrangements. Intended cooperation between the actors needs to be high while adapting to the disturbances in organizing transactions through hierarchy. Hence, there is a strong bilateral dependency and low incentive intensity.

The hybrid mode lies in between market and hierarchy forms in terms of contract law, adaptability, administrative control, and use of incentives. For example, a farmer drills a borewell on another farmer's farm and makes a long-term contract for the provision of

irrigation water with safeguards against *ex-post* uncertainties. Actors enjoy some autonomy, which encourages acting efficiently without consulting the other. Hence, hybrid form is featured with an intermediate degree of administrative control and semi-legalistic contract law regime, and semi-strong adaptations and incentives (Williamson, 1991). Depending on attributes of the transaction and their differential costs (Ménard, 2004), a transaction is best organized under one of these three governance structures. The main principle here is based on the efficiency criteria for managing transactions through alternative governance structures. That is, discriminating alignment hypothesis – economizing based on transaction costs (Williamson, 2005). Complex transactions involve (transaction) costs due to their particular attributes. Hence, a system that minimizes the transaction costs is more efficient in allocating the property rights (Lueck and Miceli, 2004a).

The three important attributes of a transaction are: asset specificity, uncertainty, and frequency (Williamson, 1981). Asset specificity refers to the degree to which the investments are necessary for durable, transaction-specific assets (Williamson, 1987b). The value of next best alternative use of such assets is significantly low. This attribute gives rise to a condition of bilateral dependency. The dependency between the actors intensifies as asset specificity deepens and actors locked into the transaction (Williamson, 1981). Therefore, both the parties have to make special efforts to protect investments and continue cooperation either by implementing, monitoring, and enforcing contractual safeguards through credible commitments (Williamson, 1987b, Rindfleisch and Heide, 1997) or by way of unified ownership (hierarchy) (Williamson, 1987b). As Williamson (1998) emphasizes, asset specificity can be physical asset specificity, human-capital specificity, site specificity, dedicated asset specificity, brand name capital, and temporal specificity. For economic rehabilitation under contemporary framework, physical asset specificity (land), site or location specificity (nearby their location) and human capital specificity (agricultural skills) are common forms.

The main distinguishing assumption of transaction cost theory is bounded rationality. That is, transacting actors have incomplete information and limited mental capacity, because of which they incur high transaction costs due to uncertainty they face about unforeseen events and outcomes (Shirley and Ménard, 2005). Uncertainty is considered broadly under two sources, environmental variability and behavioral uncertainty (Rindfleisch and Heide, 1997). Environmental uncertainties are of unintentional kind, such as uncertainty due to lack of

communication between actors, uncertainty due to random natural acts and technological uncertainty dealing with the difficulty to foresee and anticipate changes in the relevant environment (Rindfleisch and Heide, 1997). Williamson (1987a) considers strategic behavior (opportunism) as a behavioral uncertainty. To safeguard against unforeseen environmental uncertainties, making complete contracts is difficult for which renegotiation and adaption is required (Williamson, 1979). With this theoretical understanding, we analyze the complexities involved in post-displacement transactions of rehabilitation under the contemporary mode of governance.

4. Complexities of Land Purchase Transactions and Rehabilitation

The objective behind monetary compensation mechanism is to minimize the deviation from the market prices so that farmers can buy comparable land assets. Rehabilitation process involves two interconnected sub-transactions - apportionment of monetary compensation by the government to displaced farmers and purchase of comparable land assets by the displaced farmers from other land sellers. This resembles a hybrid governance structure, when viewed from the transaction cost perspective (Figure 2), where there is an 'administrative support by bureaucracy' in provision of monetary compensation but then leaves the farmers in an open land market where only medium powered incentives are available.

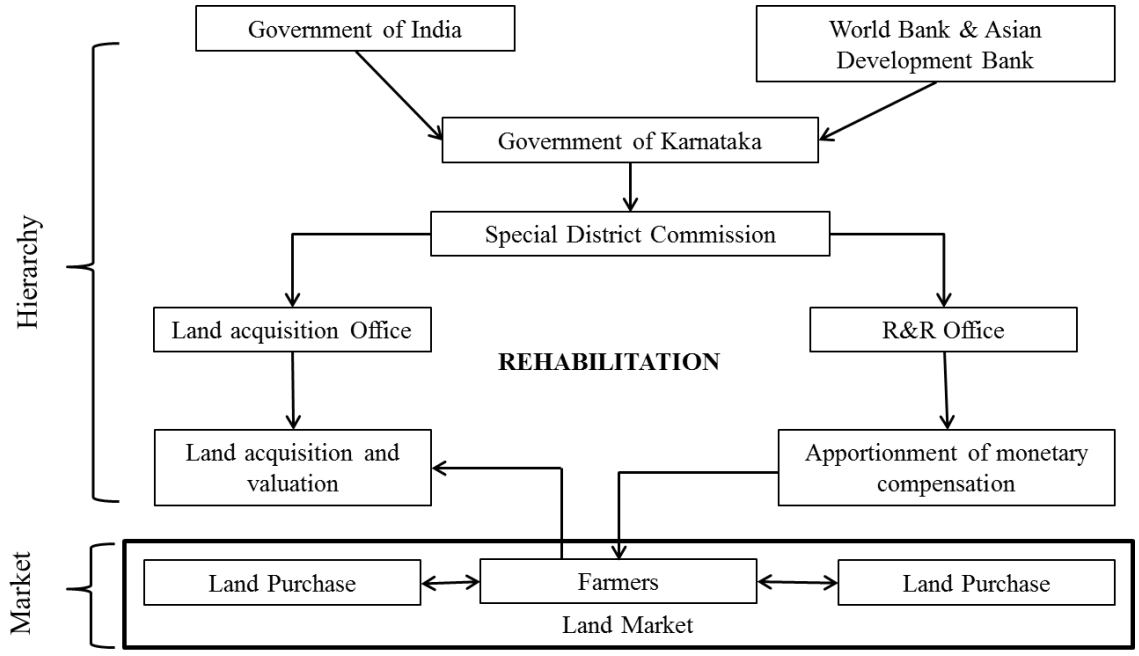

Figure 2: Contemporary Framework of Rehabilitation
Note: Arrow indicates the transaction
Source: Author's own compilation

Figure 2 shows that with funding and institutional assistance of Government of India and international funding agencies like the World Bank and the Asian Development Bank, the Government of Karnataka currently governs land acquisition and rehabilitation of affected people. The Land Acquisition officers and R&R officers jointly conduct land valuation, land acquisition, apportionment of monetary compensation, and other rehabilitation processes. Until here, the process is governed in a hierarchical form. After this, farmers are autonomous decision makers to allocate their compensation amount for their future income generation. However, as lack of education and skills could create a lock-in situation for farmers to move out of agriculture, it is inevitable for them to purchase land in order to generate income through agriculture. Therefore, farmers have to organize land transactions in land market by themselves (Figure 2).

However, rehabilitation of affected people as a whole is a very complex transaction, which creates interconnectedness among different actors like government, displaced farmers, and land sellers in the land market. The complexity is mainly because of interconnected sub-transactions, the attributes of rehabilitation, and characteristics of actors involved in the action situation. Under apportionment of compensation, there are complexities involved in the valuation of submerged land, compensation amount to be apportioned, and *ex-post* inflation of land price. Purchase of land is also a complex transaction because of the distorted land market in India.

Farmers have less information, knowledge, and predictive capacity about the post-displacement outcomes as well as land availability, quality, location, and inflation of land price in the vicinity. Hence, rehabilitation agreement between the farmers and the government is incomplete. In addition, during interviews many farmers expressed about the strategic behavior of the land sellers based on the information about the compensation amount they got and high demand for land in the vicinity. These explanations are evident in our study area. Among the total number of farmers interviewed, 25 per cent of farmers are illiterates and 75 per cent of the farmers are educated less than the high school ($<10^{th}$ standard) (kindly refer Table 2). The survey also shows that 74 per cent of the displaced farmers could not purchase any land using the compensation amount. Among 26 per cent of those farmers who could purchase land, 48 per cent purchased land less than their original holding. In addition, for 85 per cent of the farmers their net income reduced. Among these, 53 per cent are those who opted for the CA and 47 per cent who opted the GA. These

investigations clearly show that the farmers are marginalized as compared to pre-displacement scenario.

Table 4: Attributes of Land Purchase for Sampled Farmers

Attributes	Details	Sample scenario
Location	Average distance from newly purchased land to allotted dwelling place (Kilometer)	20
Type of land	Percentage of farmers purchasing dry land	61
	Percentage of farmers purchasing irrigated land	39
Land quality	Among the farmers who purchased land, those got poorer quality of land than previously owned	50
	Same quality land than previously owned	39
	Better quality land than previously owned	11
Time	Average time taken to purchase land (years)	3.7
Information	Farmers having no information about compensation claiming methods *ex-ante* (%)	74
	Farmers having information about compensation claiming methods *ex-ante* (%)	26
Compensation utilization	Farmers who spent their compensation amount on non-income generating activities either fully or partially (%)	66
	On an Average, percent of compensation amount spent of non-income generating activities	61

Source: Compilation using survey dataTable 4 gives attributes of farmers' land transactions post-displacement. An average distance from the allotted dwelling place to newly purchased land is 20 kilometer (km), which means there is uncertainty of getting land even if farmers go up to 20 km. Although farmers go up to or beyond 20 km, there is uncertainty of getting similar quality of land as they had earlier. Among the farmers who purchased land, 61 per cent purchased dry land, whereas they had irrigated land earlier. More than 50 per cent of the farmers purchased poorer quality land in terms of fertility, irrigation, and other characteristics. From these dry and poor quality land, farmers realize less income than before. In addition, farmers were uncertain about the time needed to search and buy the land. On an average, farmers took three years and seven months to purchase land after they received their

compensation amount. This temporal gap in purchasing the land is one of the main reasons that widen the gap between compensation amount and price of land per acre. These uncertainties yield high *ex-post* transaction costs on farmers making them incapable to purchase land for their future income generation. Even if they purchased, they could purchase less than what they had forgone in acquisition process. Among the sample farmers who purchased land, 48 per cent purchased lesser than that they lost (kindly refer Table 2). Even if the farmers purchased same or larger sized land than what they forgone, either that land was dry land or poor quality land (as mentioned above). As a result, majority of the farmers (66 per cent) invested their compensation either fully or partially on non-income generating activities like marriages, repayment of previous loans, house construction, and alcoholism among others. This reflects farmers' lack of portfolio management skills in utilizing their compensation amount.

TCE presents an option of internalizing a transaction in the absence of credible commitment through safeguards for post-contractual hazards. Since the Government of India has recently drafted a new form[6] of organizing economic rehabilitation, we compare it with the present mode and try to analyze whether provisions of the new legislation address the *ex-post* transactions costs incurred by the farmers.

Table 5 gives the main differences in the newly drafted legislation called the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR, 2015) [7]. That is, in the new legislation, the government internalizes some

[6] The new law was passed in 2013 but ever since there was a change in government which brought new amendments and hence the change is still in process.

[7] The basic prescription of the ordinance is as follows:

"An Act to ensure, in consultation with institutions of local self-government and Gram Sabhas established under the Constitution, a humane, participative, informed and transparent process for land acquisition for industrialization, development of essential infrastructural facilities and urbanization with the least disturbance to the owners of the land and other affected families and provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition and make adequate provisions for such affected persons for their rehabilitation and resettlement and for ensuring that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto." (for details refer RFCTLARR (Amendment) Ordinance, 2015 and its previous versions).

aspect of open market land purchase and provides 'land for land' compensation instead. The rest will continue to be made through cash compensation. Cash compensation for remaining land has been increased few folds in the new ordinance, that is, two times the market value of land in urban areas and four times the market value in rural areas. Farmers will also be provided minimum land by the displacing agency itself in case of irrigation projects. In addition, a provision for guaranteed job has been introduced, where one person in each family gets a job in either the private or government sectors. This aims to address concerns of farmers and those whose livelihoods are dependent on the land being acquired, while at the same time facilitating land acquisition for industrialization, infrastructure and urbanization projects in a timely and transparent manner.

Table 5: Provisions of Current and New R&R Frameworks

Sl. No.	Provisions	Current rehabilitation framework (LAA, 1894)	New framework (RFCTLARR (Amendment) ordinance, 2015)
1	Monetary compensation	Fixed based on the evaluation committee	Four times the market value of the land in rural area and two times in urban
2	Land for land lost in irrigation projects	No	At least one acre land should be given in command area of the Irrigation project
3	Job provision clause	5% job reservation in government departments	Compulsory provision of job to one person in each affected family
4	Solatium	15-30% of total compensation amount	100% of total compensation
5	Farmers' consent for acquisition	No	Consent of 70 to 80% of land owners in private based projects
6	Information provision	Yes	Yes
7	Preparation and appraisal of SIA study by an expert group	No	Yes

Source: Adopted from the government reports and RFCTLARR (Amendment) Ordinance, 2015

5. Comparative Transaction Cost Analysis of New and Proposed R&R

Table 6 presents a comparative view of the important sources of transaction costs for farmers in the current and newly proposed frameworks. The first and second attributes, refer to the

human capital specificity and the physical specificity of land that is prime input for the farmers to regain their income. This is mainly because farmers have low education levels (kindly refer Table 2) and have limited income generating skills other than agriculture. This limits the income generating opportunities farmers have outside agriculture. Hence, farmers are skilled specific to agriculture, and land is high physical asset specific for the farmers' future income generation in the current mode of rehabilitation (Table 6). Whereas, in case of new mode of organizing rehabilitation, there are provisions of 1-2.5 acres of land in irrigation projects and compulsory job to one person in each family. These clauses in the new mode make the land comparatively less physical asset specific.

Table 6: Transaction Characteristics in Existing and Proposed R&R

Sl. No.	Attributes of transaction	Current mode	New mode
1	Human capital specificity (farmers' skill limited to agriculture)	High	High
2	Physical asset specificity (land)	High	(Comparatively) Low
3	Locational asset specificity (location of land)	High	Low
4	Information (information about the compensation claiming methods)	Low	High
5	Uncertainty A (location of land to be purchased)	High	Low
6	Uncertainty B (uncertainty of land price)	High	Low
7	Uncertainty C (about availability of comparable land (size))	High	Low
8	Uncertainty D (about water availability and other quality parameters of land)	High	Low
9	Uncertainty E (time to search and buy land)	High	Low

Source: Compiled from field work observations and review of reports of current and new rehabilitation provisions.

The third attribute refers to locational specificity of land. Farmers are allocated house plots for their physical rehabilitation in current mode and they have to purchase land by themselves in the current mode of organizing rehabilitation. Farmers look for land preferably not far from the allocated house plot. Land in the vicinity becomes high locational specific asset for the farmers to rehabilitate economically. This high locational asset specificity increases the demand of land in the surrounding areas. As mentioned elsewhere, the land sellers behave strategically as a result of this high demand and based on the compensation announcement of

land. Hence, there is an uncertainty about the location of land and its distance from their dwelling place, and price of land (Uncertainty A and B). Whereas in case of new mode, as land for land and house site is allocated in the benefited area of the irrigation project, land is less location asset specific for the farmers. Since government itself allots land, farmers will not face uncertainty of land price.

As mentioned elsewhere, farmers have incomplete information about land markets and bounded rationality to deal with land transactions (lack of information). In addition, majority of the farmers have marginal and small land holdings (75 per cent in the study sample (kindly refer Table 2)), searching similar sized land takes some more time and cost. As a result, they faced high uncertainty in getting comparable land of their preferred size (Uncertainty C). Among those who purchased land, majority of them (more than 50 per cent) purchased dry and poor quality land. This shows the uncertainty of getting irrigated and better quality land (Uncertainty D).

As a results of these specificities and uncertainties, there are high uncertainties in terms of time required to search and purchase land (Uncertainty E), where they may or may not get land immediately. Even if farmers are able to buy the land, they are uncertain about irrigation water availability, soil type, and soil fertility as compared to their submerged land. Under new R&R framework, the government takes up the responsibility to allocate land in the benefited areas, thereby reducing uncertainties for the farmers.

Even though the new legislation intends to address the *ex-post* transactions costs through internalizing land transactions enforcement will remain an important challenge. However, a discussion of that is beyond the scope of this paper.

6. Conclusion and Policy Note

Development-induced displacement imposes involuntary transactions on farmers. These transactions, especially in developing countries, are very complex and interconnected, which cause social, physical, and economic disruptions to farmers. But in this process, a large population has been affected due to involuntary appropriation of land and displaced nearly 60 million people in India since independence (Choudhury, 2013). The general principle followed for land acquisition is *monetary compensation,* which, from the neoclassical cost-benefit approach, is assumed to be sufficient for rehabilitation of farmers. However, it has

failed to realize the desired outcome of rehabilitation, and large proportions of displaced farmers end up owning far less assets and thus get further marginalized. Therefore, we enquire why the present approach of rehabilitation leads to such a deviation using the case of Upper Krishna Irrigation Project (UKP) in the northern part of Karnataka, India. Comparative transaction cost reasoning is used to explain this, which emphasizes that when the transaction costs arises due to *ex post* uncertainties and asset specificities; rehabilitation may be inefficient.

One objective of governance is to protect the interests of the respective parties and adapt the relationship to changing circumstances (Williamson, 1987b). As discussed elsewhere, a system that minimizes the transaction costs of the farmers in their rehabilitation is more efficient in allocating the property rights (Lueck and Miceli, 2004a). Monetary compensation is most likely to be efficient in rehabilitation of farmers when costs of finding the land are relatively low. Therefore, we show how specificities related to land characteristics, uncertainties in search for alternatives, and information constrains impose high non-monetary transaction costs on farmers. We use the same analytical framework to make a preliminary assessment of the new draft legislation called the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) (Amendment) Ordinance, 2015, which replaces the older legislation. We try to gauge whether the new legislation minimizes the burdens of transaction costs on farmers.

Our analysis shows that the R&R component in the UKP did not result in the intended outcome of economic rehabilitation despite adequate incentives because of high transaction costs imposed on farmers in search of alternate suitable land. The farmers are exposed to uncertainties due to unforeseen *ex-post* changes. Farmers, before displacement, do not have information about *ex-post* changes of land prices, land availability, location, and quality. These uncertainties are created because of the hybrid mode of governance enacted by the legislation (LAA, 1894) where the state appropriates land as part of a hierarchical system but then leaves 'limitedly informed' farmers in the open market.

A newly proposed legislation intends to address these transaction costs through 'land-for-land' and employment provisions but the impact of which can only be assessed in the future.

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