



Biofuels and Wasteland Grabbing: How India's Biofuel Policy is Facilitating Land Grabs in Tamil Nadu, India

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INTRODUCTION

Unlike the large scale, biofuels-induced land grabs occurring in Africa (Cotula et al. 2009; Sulle and Nelson 2009; World Bank 2010), the land grabstaking place in India involve smaller tracts of land and are more subtle and obscured. However, the outcomes on both continents pose equally deleterious threats to the rural poor. Motivated by both international and domestic policies to restrict feedstock cultivation to marginal environments, biodiesel companies in the South Indian state of Tamil Nadu have slowly been amassing plantations of privately owned ‘wastelands’, the government’s term for marginal lands, by purchasing lands from farmers at low rates and/or re-registering farmer’s lands without their knowledge or consent. After short-lived attempts at raising biofuel plantations and likely after receiving government subsidies for seedling procurement and land preparation, the companies are in the process of selling lands into real estate for at least double the purchase price per acre, according to government land records. Thus, instead of minimizing threats to food security and enhancing rural welfare, growing biofuels on marginal lands appears to be doing the exact opposite by dispossessing farmers of their agricultural land.

This paper examines the mechanics of the biofuels-induced land grabbing taking place in Tamil Nadu and its impacts on agrarian livelihoods. As will be demonstrated through a detailed examination of land records and interviews with key stakeholders, India’s wasteland-centered biofuels policy is reducing the extent of agricultural area and dispossessing poor farmers of their ancestral lands, one of the few assets this class of farmers have. After a literature review on the politics of wasteland mapping, the paper briefly reviews India’s current biodiesel policy and wasteland assessment procedures in Sections 2 and 3, respectively. The land grabbing examination is presented in Section 4 and concluding remarks are offered in Section 5.

SECTION 1: POLITICS OF WASTELAND MAPPING

Classifying wastelands in India is rooted in the colonial land settlement process. The term was applied under both the *zamindari* and *ryotwari* settlement systems, the two dominant land tenure systems of the colonial period (Gidwani 2008). It was broadly applied to various land types underperforming in terms of their revenue generating (ie. tax collection) potential (Gidwani 2008). A key function of land classification schemes in general, as both Gidwani and Gilmartin note, was to improve the productive capacity of lands and minimize efficiency loss (Gidwani 2008; Gilmartin 2003). Land classification hinged solely on the economic significance of a plot of land, thus minimizing any ecological, cultural or livelihood benefits it might also bestow on local communities and ecosystems.

The use of the term “waste” to describe underperforming lands is also indicative of the economic motivations of land classification. Gidwani traces the use of the term back to the 17th century writings of John Locke whose belief in the “inseparability” between personal property and freedom were a key influence on colonial governance (Gidwani 2008: 23). Gidwani credits Locke with integrating a moral dimension to land assessment via his *Second Treatise*. The essence of good government and good citizenship, according to Locke, is to improve the value of nature lying in waste; a goal best accomplished through land privatization (Gidwani 2008: 23

referring to Locke's *Second Treatise*). Land privatization thus became the main vehicle for minimizing the amount of wasteland.

Further, Whitehead argues the term ‘wasteland’ constructed artificial binaries to classify, or perhaps more appropriately, to divide, both people and lands in Indian colonial land settlement and forest policies (Judy Whitehead 2010). Lands were either “wastelands” or “value-producing” and in the context of forest policy, the groups associated with these lands were either tribals or castes. In the context of forest policy, tribals were often considered backward and in some instances, savages while castes were considered more civilized. The tribals occupying wastelands were more vulnerable to dispossession or enclosure because of policies designed to improve wastelands. As will be demonstrated in Section 4, similar binaries and policy mechanisms exist to this day on agricultural lands as marginal farmers have been dispossessed of their private wastelands by companies promising to improve the value of wastelands through biofuel production.

The process of classifying lands was wastecan be seen as an example of state simplification(Scott 1998). Certain state processes, such as establishing land and population surveys, are undertaken to make legible the actions of populations, which facilitates the state’s ability to monitor its citizenry (Scott 1998). Yet, this process often simplifies “exceptionally complex, illegible, local social practices” (Scott 1998: 2). As result, although such ordering processes “may be secure on paper, ... they are fragile in practice” (Li 1999: 298) and often fail to succeed in their goal of improving the human condition (Scott 1998). Such schemes have the potential to alter the landscapes of the communities in which they operate and the relationship between the state and its citizens.

It thus becomes imperative to examine what these schemes do, how they are carried out and what (seemingly) unintended consequences may result. This involves examining both how policymakers conceive of these programs and how they are imposed on the ground. Doing so will unveil the activities made invisible thorough acts of simplification and the “messy, contradictory, multilayered and conjunctural effects” the act of simplifying engenders (Li 2005: 384 In reference to Ferguson, 1994). The land grab documented herein is an effort in this regard.

SECTION 2: INDIAN BIODIESEL POLICY PROMOTION

Central government Jatropha promotion: Biodiesel program: 2003-2008

India established its biodiesel program in 2003 with the launch of the National Mission on Biodiesel (Government of India 2003). The Mission called for mandating a 20% biodiesel blending target by 2011-2012 using Jatropha as the primary feedstock. Although approximately 400 non-edible oilseeds can be found in India, the Committee selected Jatropha for the biodiesel program because of its higher oil content (40% by weight) and lower gestation period (2-3 years) in comparison with other oilseeds (Government of India 2003).

To meet a 20% blending target, the Committee recommended cultivating Jatropha on 17.4 million hectares of under utilized and degraded land (approximately 5% of India’s total land area), according to the following land types detailed below in Table 1.

Table 1: National Mission on Biodiesel Jatropha Cultivation Recommendation

Land Type	Area	Percentage of Wasteland Total
	million ha	%
Joint Forest Management (JFM) Forest lands	3	17%
Agricultural border fences	3	17%
Agroforestry schemes	2	11%
Culturable fallow lands	2.4	14%
Integrated Watershed Development wastelands	2	11%
Public lands along roads, railways, canals	1	6%
Government-designated wastelands	4	23%
TOTAL	17.4	100%
India total land area	328.7	5%*

* Percentage is targeted Jatropha cultivation area as a percentage of India's total land area
Sources: (Government of India 2003; CIA 2009)

The Mission was to be implemented in two phases: a research and demonstration phase from 2003-2007 (Phase I) and an implementation phase from 2007-2012 (Phase II). The main goals of Phase I were to bring 400,000 ha of land under cultivation, to establish a research network of 42 public universities and to enact a 5% blending target (B5). The program would be expanded under Phase II to achieve a 20% blending target (B20) by 2011-2012.

Although the biofuel blending targets were not codified, interest in Jatropha rapidly accelerated after the launch of the National Mission on Biodiesel. According to a global Jatropha market survey, India was the world's leading Jatropha cultivator in 2008, controlling approximately 45% (407,000 ha) of global cultivation (approximately 900,000 ha) (GEXSI 2008). Further, the GEXSI study anticipated India would remain a leading cultivator and projected nearly 2 million hectares would be under cultivation by 2015.

Despite India's initial progress in promoting Jatropha, the industry has experienced set backs because of declining international oil prices and because of continued variability in the agronomic performance of the crop. To date, there remains considerable uncertainty surrounding the seed yields, input and maintenance requirements for the crop (Achten et al. 2008), all of which have inhibited market development. Additional concerns surrounding the land tenure implications and rural livelihood benefits have further stymied the industry (FOE 2009).

As result, India's Integrated Energy Policy, released in 2006, recommended significant increases in research funding for Jatropha and Pongamia, another tree born oilseed (Government of India

2006). Further, the 11th Five Year Plan, which began in 2007, recommended a blending target of 5% biodiesel blends by the end of the 11th Plan in 2012, a significant reduction from the 20% target proposed under the National Mission on Biodiesel (Government of India 2007). In August 2008, a Group of Ministers decided to discontinue the National Mission on Biodiesel (Dey and Jayaswa 2008).

However, in September 2008, the Ministry of New and Renewable Energy (MNRE) resumed discussions on biodiesel and issued a draft National Biofuels Policy (Government of India 2008). The draft policy seemingly backed off the country's exclusive promotion of *Jatropha* and instead called for using any non-edible oilseeds grown on marginal, degraded or wastelands. The draft policy also recommended establishing 20% blending targets by 2017 for both ethanol and biodiesel.

National Policy on Biofuels: 2009-present

On December 24, 2009, the government implemented the National Policy on Biofuels (Government of India 2009). The policy establishes indicative 20% blending targets by 2017 for both ethanol and biodiesel.¹ The new policy is not feedstock specific, as was the case with the National Mission on Biodiesel. Instead, the policy calls for using non-food feedstocks grown exclusively on wastelands, both publicly and privately owned, in order to avoid conflicts with food security. According to the government, this provision will distinguish India's policy from other countries' biofuel programs. The policy does not mention *Jatropha* specifically but instead states the government will assess the potential of over 400 tree born non-edible oilseeds currently growing in India. However, as *Jatropha* is the most commercially advanced feedstock in this class, it is likely initial efforts will focus on *Jatropha*.

SECTION 3: WASTELAND ASSESSMENT

The policy does not provide additional guidance as to the extent of wasteland areas in the country or the proportion targeted for biofuel cultivation. As this section reveals, various competing wasteland classifications currently exist in the country each using different assessment criteria. While sporadic one-time assessments have been conducted to examine the economic significance of wastelands to rural livelihoods (Eswaran 2001) such analyses are currently not included in wasteland assessment procedures. Without addressing this dimension in wasteland classification, the efficacy of wasteland development schemes such as biofuels is questionable. However, as Section 4 demonstrates, additional clarity in wasteland assessment will not necessarily improve the welfare impacts of wasteland development. In fact, such clarity could hasten the wasteland land grab that is occurring in rural India.

The history of India's wasteland assessment program has been documented elsewhere (Eswaran 2001). At present, two main wasteland assessments are conducted, the Wasteland Atlas and the Nine-Fold Classification.

¹ According to the policy document, the targets will be revised and codified as additional research becomes available.

The *Wasteland Atlas of India*, funded by the Integrated Watershed Development Program (IWDP) is conducted by the National Remote Sensing Centre (NRSC).² The NRSC uses remote sensing techniques to categorize wastelands into 8 broad categories with 15 sub-categories (ie 23 total categories) based on the ecological characteristics of the land (National Remote Sensing Centre 2010).³ Data is compiled by District for each State and Union Territory. The Atlas is updated every 5 years using remote sensing images captured five years prior to the date of publication (ie. the 2010 Atlas is based on 2005 data). Classifications are made by comparing three seasonal images of each plot taken over the course of one year. In addition, limited ground truthing is conducted for a sample of plots.

The definition of wastelands used for the Atlas hinges on both ecological and economic characteristics of land types:

“Wastelands refer to degraded lands that are currently underutilized, and are deteriorating for lack of appropriate soil & water management or on account of natural causes. Wastelands develop naturally or due to influence of environment, chemical and physical properties of the soil or management constraints.”

(National Remote Sensing Centre 2010: 4)

According to the 2010 *Atlas*, 47.22 million ha (14.91% of total land area) are currently lying in waste (National Remote Sensing Centre 2010). The five largest wasteland categories in the 2010 Atlas are: land with dense scrub (2.95% of total geographic area (TGA)), land with open scrub (2.89% of TGA), under-utilized degraded notified forest – scrub dominated (2.71% of TGA), barren rocky (2.19% TGA) and snow covered/glacial area (1.29% of TGA) (National Remote Sensing Centre 2010). Neither the National Mission on Biodiesel nor the more recent National Biofuels Policy provide guidance on the precise wasteland categories that would be targeted for biofuel cultivation. However, based on field visits to biofuel production areas, the likely categories are land with dense scrub, land with open scrub, degraded pastures and grazing lands and under-utilized and degraded forests, scrub-dominated. Collectively, these categories represent 8.78% of TGA (National Remote Sensing Centre 2010).

While perhaps the most detailed source, the Atlas is not the definitive source of wasteland classification within India. A second main source of wasteland classification is the Agricultural Land Use Statistics, commonly referred to as the “Nine-Fold Classification” because it categorizes land into nine land use categories (Directorate of Economics and Statistics 2008).⁴ The assessment contains two wasteland classifications: cultivable wastes and uncultivable wastes. Cultivable wastes are lands that have not been cultivated in the last five years but were

² The NRSC is also housed within the Department of Rural Development.

³ The eight broad categories are: gullied/ravinous land, scrubland (with or without scrub), waterlogged and marshy land, land affected by salinity/alkalinity, shifting cultivation, scrub forest (underutilized, notified forest land), sands (coastal/desert/riverine), mining/industrial wastelands.

⁴ The nine categories are: forests, area under non-agricultural uses, barren and unculturable land, permanent pastures and other grazing lands, land under miscellaneous tree crops and groves, culturable wasteland, fallow lands other than current fallows, current fallows, net area sown.

cultivated at some point in the past. Uncultivable wastes have never been cultivated and include land types such as deserts and rocky lands.

The Directorate of Economics and Statistics within the Ministry of Agriculture compiles the assessment annually but there is a two-year publication gap (ie. the most recent statistics are from 2008). The agricultural land use statistics are based on village land settlement records (referred to as the A-Register) maintained by the Village Administrative Officer (VAO). Settlements are conducted annually at a village-wide meeting (*Jambandi*) held each May or June. The settlement records are passed along and consolidated at the District, State and Central government levels by the Directorate of Economics and Statistics. However, various stakeholders interviewed for this study expressed doubt regarding the validity and update frequency of village land settlement records.

Other authors examining the linkages between *Jatropha* cultivation and wasteland development in India have utilized the Wasteland Atlas in their assessments (Biswas, Pohit, and Kumar 2010; Pere Ariza-Montobbio 2010; Ariza-Montobbio et al. 2010). Yet, based on key informant interviews, the Nine-Fold Classification is the tool most commonly used in formulating wasteland development policies. Further, the village A-Registers were instrumental in facilitating the land grabs occurring in the study region because land brokers obtained the records and targeted lands classified as privately owned wastelands.

Lastly, despite the existence of wasteland classifications, corporate, government, civil society and village stakeholders interviewed for this study uniformly agreed there is no such thing as wastelands. However, the corollaries to this statement differed across stakeholders. Corporate and government stakeholders believed there is no such thing as wasteland, only wasted land; the lands should be put to a more productive (ie. economic) use. Civil society and village stakeholders, on the other hand, felt all lands are currently in use and serve an important purpose in the village. These perceptions of wastelands, as well as the mobilization of wastelands for *Jatropha* cultivation in Tamil Nadu, India are further explored elsewhere (Baka 2011).

SECTION 4: LAND GRAB MECHANICS: WASTELAND MARKS THE SPOT

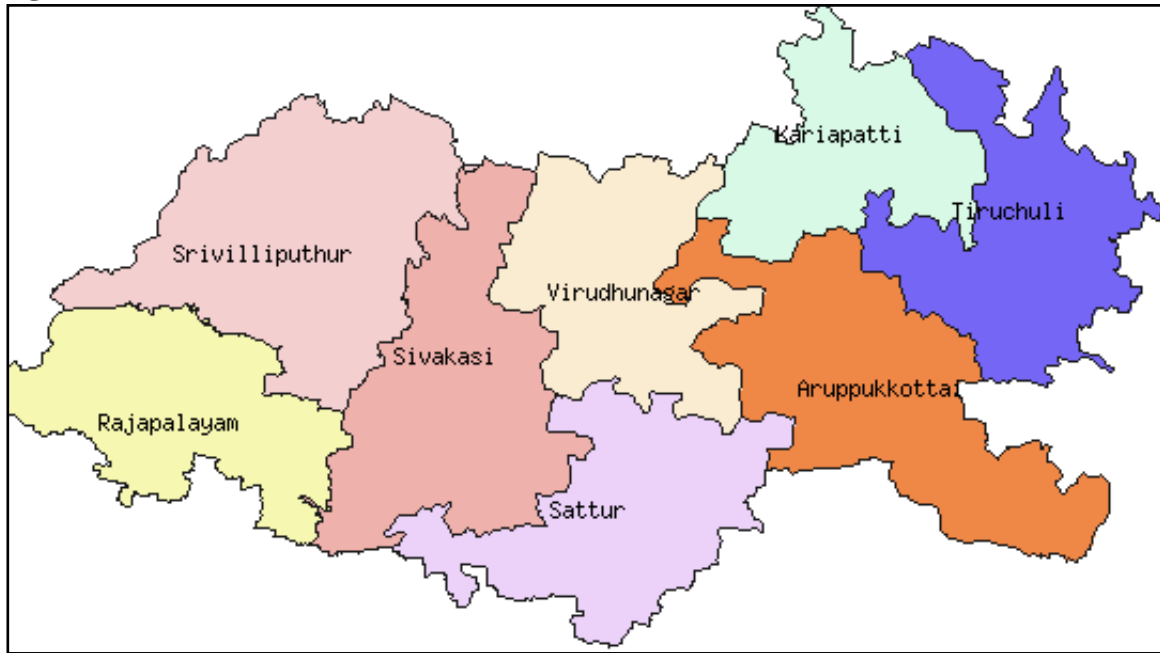
This section documents the mechanics of an 800-acre biofuels land grab that occurred in southern Tamil Nadu beginning in 2005-06. While the area involved is small, the number of affected farmers is likely in the hundreds as the average land holding size in this district of Tamil Nadu is 2.4 acres (Government of Tamil Nadu 2010). The exact number of impacted farmers is not yet known as evidence on the land grab is still emerging. In addition, land grabs of similar size and magnitude may be occurring in other parts of the district based on interviews with key stakeholders. This paper details the mechanics of one such land grab for which land records were available and impacted farmers were willing to discuss their cases.

Field Site

Fieldwork for the study took place from October 2010 and February 2011. The land grab took place in southwest corner of Sattur taluk in Virudhunagar District, Tamil Nadu. According to interviews with a former plantation guard and government officials, the plantation amassed by

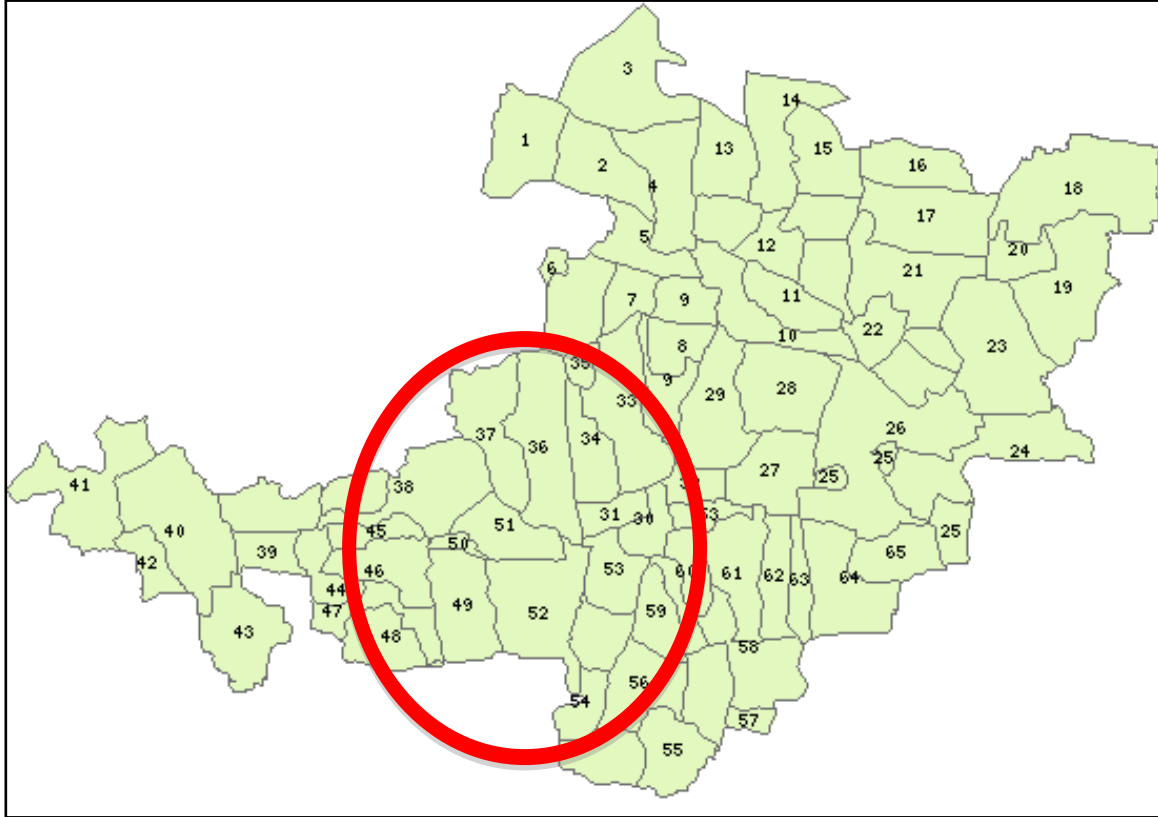
the company spanned 12 villages in this region with the largest portions of land acquired in the villages of Kongarakottai (village #38 in Figure 2) and Soorangudi (village #36 in Figure 2). Figures 1 and 2 below identify Sattur taluk and the plantation site.

Figure 1: Sattur Taluk



Source: Tamil Nadu Maps Online, www.tnmaps.tn.nic.in.

Figure 2: Villages Involved in Land Grab⁵



Source: Tamil Nadu Maps Online, www.tnmaps.tn.nic.in.

Methods

Details of the land grab were obtained through semi-structured interviews with 47 key stakeholders (Table 2). The names of the interviewees are withheld to protect their identities.

⁵ The villages involved are: Chinna Thambiyapuram (#31), O. Mettupatti (#33), Ottiyal (#34), Soorangudi (#36), Banduvarpatti (#37), Kongarakottai (#38), Sankarapandiyapuram (#39), Thulukkukurichi (#40), Muthandiapuram (#50), Muthusampuram (#51), Karasilpatti (#52), Periyampatti (#54).

Table 2: Summary of Key Informant Interviews, October 2010-February 2011

Interviewee	Count
Local land brokers	4
Shivaleekha land acquisition manager	1
Former Shivaleekha plantation guard	1
Village government officials in the Panchayat & VAO for nine of the 12 affected villages	12
Sattur taluk government officials in the Land Registration and Revenue Departments	4
Government document writer	1
Police officials in Virudhunagar District and Sattur taluk	4
Communist Party of India Marxist (CPM) officials	3
Lawyer representing one of the affected farmers	1
Local farmers familiar with by whose lands were not involved in the land grab	10
Shepherds	2
Entrepreneurs in Indian Agriculture	2
Biofuel company executives	2
Energy and agriculture NGO official	1
TOTAL	48

Additionally, 13 farmers from Kongarakottai (#38 in Figure 2), Soorangudi (#36 in Figure 2), Karasilpatti (#52 in Figure 2), and Ottiyal (#34 in Figure 2) whose lands were involved in the land grab were interviewed (Table 3). This is where the largest portion of the land grab took place and it is also where the CPM, the main political party involved in farmer welfare issues, staged an agitation to assist one family of five brothers in Kongarakottai get their lands back.

Table 3: Summary of Affected Farmer Interviews, December 2010-February 2011

Village	Interviewees	Interview Date Range	Note
	#		
Karasilpatti	1	Feb-11	
Kongarakottai	8	Feb-11	5 of the interviewees were brothers from the same affected family. The brothers got their lands back with the help of the CPM. The brothers, along with one other impacted villager, were interviewed together on the same day. The son of one of the brothers with knowledge of the case was interviewed separately on a different day.
Ottiyal	2	Dec-11 & Feb-11	both farmers' lands are in Soorangudi; they own neighboring plots and their lands were incorrectly listed on the same patta form prior to the land grab
Soorangudi	2	Dec-11 & Feb-11	
TOTAL	13		

Finally, various legal documents and land records were analyzed to verify details revealed in the semi-structured interviews (Table 4). Numerous documents were obtained from farmers who have taken actions to get their lands back. Additionally, Encumbrance Certificates (EC), which document land transactions for a particular plot for 24 years, were acquired for 201 surveys involved in the plantation. Analysis focused on the 201 surveys in these records.

Table 4: Summary of Land Documents Obtained

Type	Document Count	Survey Count	Source	Note
	#	#		
Encumbrance Certificates (EC)	22	201	Land record purchases and affected farmers	Includes 18 ECs purchased from government and 4 provided by farmers. Collectively, the records document land transactions for 201 surveys.
Land sale records: farmers to Shivaleeka	2	61	affected farmers	Document the sales of 61 individual surveys. Obtained from two affected farmers whose lands had been re-registered without their knowledge or consent.
Land sale records: Shivaleekha to real estate company	1	42	Shivaleekha land acquisition manager	Document the sales of 42 individual surveys.
newspaper ad listing survey nos of aquired lands	1	420	<i>Thinathanthi</i> , July 3, 2009	Lists the survey numbers for 420 survey numbers acquired by Shivaleekha.
legal complaint	1		affected farmer	Obtained from Ottiyal farmer whose lands were re-registered without his knowledge or consent. The complaint details how the lands were re-registered and requests the lands be returned to the farmer.
land sales recorded in village record books	19	93	Kongarakottai VAO	These are 19 pages of ledger entries detailing 93 individual surveys sold. They include area, soil type, irrigation source (if any) and current land use for each survey.
power of attorney document	1		affected farmer	
Patta forms	2	19	affected farmers	The two patta forms detail 19 individual surveys involved in the land acquisition. They include area, soil type, irrigation source (if any) and current land use for each survey.
Land ownership receipts	2		affected farmers	
tax payment receipts	2		affected farmers	
TOTAL	53	836		The analysis focused on the 201 unique surveys contained in the EC records. Many of the survey records obtained for the other sources are included in this batch. Additional research is needed to validate whether the 420 surveys in the newspaper ad have been sold.

Land Grab Mechanics

Synopsis

Starting in 2005-06, land brokers representing the New Delhi based T. Shivaleekha Biotech began approaching farmers in the village of Soorangudi (#36 in Figure 2) offering to purchase their rainfed agricultural lands. After obtaining lands in Soorangudi, the brokers started acquiring lands to the west in Kongarakottai (village #38 in Figure 2). According to villagers, by 2007, the company had acquired approximately 400 acres in Soorangudi, 300 acres in Kongarakottai and about 100 acres from the neighboring 10 villages mentioned previously.⁶

After amassing a plantation of roughly 800 acres⁷, the company is said to have planted *Jatropha* on roughly half the area (approximately 400 acres, based on interviews with villagers and a former plantation guard). However, they maintained the trees for less than a year and never harvested seeds. In 2009, they started selling off the plantation lands to real estate companies headquartered in Bombay, Raj Green Valley Developers and Raigad Infra Projects.

Although it is no longer maintaining the *Jatropha* plantation, Shivaleekha has links to the two main *Jatropha* companies currently operating in Virudhunagar District, each with strong international ties. Emami Biotech, a subsidiary of the Emami Group, a Calcutta based agricultural and herbal products conglomerate, has established *Jatropha* operations in Aruppukkottai District (Figure 1). In 2009, Emami Biotech acquired 100,000 acres of land in Northern Ethiopia to establish a *Jatropha* plantation (Goswami 2009). Based on an interview with Emami Biotech's Director, Emami Biotech helped Shivaleekha establish operations in Tamil Nadu, though the Director was vague as to the specific assistance Emami provided Shivaleekha.⁸

Additionally in 2010, ACS Alternative Fuels Private Ltd, a subsidiary of the Japanese company Allied Carbon Solutions (ACS), opened a *Jatropha* oil processing plant in Aruppukkottai (Balaji 2010). The former Chief Manager of Shivaleekha's Tamil Nadu operations, is now currently the Director of ACS Alternative Fuels Private Ltd (Agriculture Information 2008).⁹

Acquisitions

"Poor farmers can't fight" Karasilpatti farmer (not affected by the land grab) describing why the land grab is happening, February 12, 2011

⁶ Interview with Karasilpatti farmer not affected by land grab, February 12, 2011.

⁷ The exact area of the plantation could not be determined in the course of fieldwork because Shivaleekha is no longer operating in Sattur. The estimate of 800 acres is based on interviews with a former plantation guard (12/18/10) and with the land acquisition manager (11/11/10) who is still working in Sattur to sell off the plantation.

⁸ Interview with Emami Biotech Manager, January 22, 2011.

⁹ Interviews with Director of ACS Alternative Fuels Private Ltd, October 27, 2010 and January 20, 2011.

The brokers offered farmers prices of Rs. 3000-5000 per acre (\$67-112/acre). Although seemingly a pittance for one's ancestral lands, many farmers in this region had been unable to farm these particular lands for numerous years because of poor monsoon rains. Farmers interviewed for this study spoke embarrassedly of having to borrow from money lenders in these times to make ends meet. The price offered by the brokers allowed them to repay the money lenders, a debt trap that has been linked to numerous farmer suicides in Indian agrarian society (Assad 2008).

Further, if a farmer decided to sell land, he typically did not discuss it with others as doing so is considered shameful. This secrecy may have facilitated the land grab because the land brokers, many of whom were from a neighboring village, would likely have been aware of this cultural practice. When the sales and resultant land grabs were discovered within villages, fights erupted. In one family, an elderly farmer's children refused him food for a month when they learned he had sold the family's land.

In order to sell the lands, the farmers had to provide their land ownership documents to the brokers so that the plots could be transferred to the company. Once the brokers had these documents, they would re-register the lands in one of three ways: directly in the name of Shivaleekha, in the name of a middleman or power of attorney holder who in many instances, later sold to Shivaleekha or in the name of MS Greenenergy, a company that later sold to Shivaleekha. The purchases from farmers and sales to Shivaleekha via middlemen or middle companies took place in a matter of days.

One of the key land documents, the patta form, would include a list of all lands registered in the farmer's name. Based on interviews with affected farmers, the patta form may not accurately reflect the *de facto* use of the plots. In numerous instances, a farmer's patta mistakenly included neighbors' lands and/or did not reflect partitions within families. Once in possession of a patta form, the land brokers typically re-registered all the plots on the form regardless of whether the plots were purchased.

However, purchasing lands and obtaining documents from farmers was not the sole way the company acquired lands. According to villagers, the brokers frequently approached them with the requisite government land surveys and ownership details already in hand. These documents included the Village A Register and the land survey map. Within the village, such records are maintained by the VAO. In one village visited, the Taliari¹⁰ and VAO were transferred for allegedly selling survey details to the brokers.¹¹ According to villagers, brokers paid these

¹⁰ The Taliari is a village elder that works with the VAO to administer village affairs. He/she has equal access to all land transaction details and must approve all land purchases and sales.

¹¹ Interviews with Kongarakottai affected farmers, February 5, 2011. In addition, the Taliari in question has been reinstated in the position in the village. In an interview, he confirmed he had been transferred for a period of time but did not state the reason (interview December 15, 2010). Additionally, the VAO from Karasilpatti stated officials in Kongarakottai had been transferred because of the land deals (interview December 17, 2010).

officers Rs. 200 (\$4.44) for each survey obtained. As one affected farmer aptly quipped, “without the support of the government officials this (the land grab) could not have been done”.¹²

Equipped with the land records, the brokers were able to generate false legal documents to re-register lands, often without farmer knowledge. This often involved creating a power of attorney document whereby various farmers ceded control of their lands to a designated power agent. The power agent was then able to sell the lands on the farmers’ behalves without their signatures or knowledge. Generating a power of attorney document required the signatures, thumb prints and pictures of the farmers, which were easily forged, based on the experience of one such affected farmer from Ottiyal village (#34 in Figure 2) who had obtained a copy of the forged power document used to re-register his lands.¹³

Of the 13 affected farmers interviewed, three sold land to the company without disputes, 6 had their lands acquired without their knowledge or consent and 4 had additional lands acquired after initially selling some plots (Table 5). The total area involved is approximately 66 acres. Almost half of this area involved transactions where farmers first sold a portion of their lands and additional lands were acquired by the company without the farmer’s knowledge or consent.

Table 5: Land Acquisition Methods for Affected Farmers

Farmer Type	Count	Area Involved			
		Sold	Acquired	TOTAL	TOTAL
	#	acres	acres	acres	%
land sold without dispute	3	12.50		12.50	19.1%
land acquired without knowledge or consent	6		22.28	22.28	34.0%
land acquired without knowledge or consent after initial land sales	4	13.52	17.27	30.79	47.0%
TOTAL	13	26.02	39.55	65.57	100.0%

Source: Farmer interviews.

Broker’s Sales Pitch: A Lockean Narrative of Wasted Lands and Wasteful Farmers

According to both farmers and village officials, the brokers initially came in search of wastelands. More specifically, they approached the VAO asking for the locations and survey numbers of *tharasu* lands, a Tamil word for wasteland and also the word for “cultivable wastes” under the Nine-Fold Classification.

¹² Ottiyal farmer affected by the land grab, February 12, 2011

¹³ *ibid.* “General Power Documentation”, July 3, 2006.

The *tharasu* lands targeted by the brokers were often overgrown with *Prosopis juliflora*, an invasive drought-tolerant tree introduced in Tamil Nadu as part of Social Forestry initiatives in the 1950s (Arnold, Bergman, and Djurfeldt 1987). Once covered with *Prosopis*, farmers usually have no choice but to abandon their lands, rendering them *tharasu* as they cannot afford to clear the tree given its deep root structure. According to VAO officials, lands covered with *Prosopis* are classified as *tharasu*.

Interestingly, although *Prosopis* had invaded the majority of their rainfed lands over 20 years ago, the affected farmers interviewed for this study did not refer to their lands as wastelands. When asked if their lands were *tharasu*, the farmers unanimously disagreed. Instead, they referred to their lands as *karasilkadu*, black soil lands. In the study region, such lands are used for growing rainfed crops such as cotton and grams, which is how the farmers used the lands before *Prosopis* invaded. While some farmers used the word *velikadu*, literally meaning *Prosopis* lands, to refer to the lands all insisted their lands were not waste.

Within farming communities, the brokers approached farmers to buy their *Prosopis* lands asserting they could put the lands to better use. The brokers did not use the word *tharasu* or wasteland, according to interviews with farmers. If a farmer agreed to sell, the company would remove the *Prosopis* and restore the productivity of the lands. Further, the brokers claimed the company only wanted to grow *Jatropha* on a portion of the lands and would allow farmers to continue farming the remaining portions of the plantation.

Of the three farmers who sold their lands without disputes, none continue to farm their plots. Of the four farmers who sold land and had additional lands acquired without their consent, two continue to farm their lands and two have abandoned their lands. Of the six farmers whose lands were acquired without their knowledge or consent, five continue to farm their lands and one has abandoned his lands (Table 6). However, farmers often gave conflicting accounts as to whether they continue to farm the lands. Based on visits to the plantation lands, it is likely a given plot is partially cultivated and partially covered with *Prosopis*. However, once *Prosopis* covers the entire plot, the farmer will abandon the land.

Table 6: Current Land Use of Interviewed Farmers’ Plots Involved in Land Grab

Farmer Classification	Sample size	Continuing to Farm	Abandoned
	#	#	#
Sold land without dispute	3	0	0
Lands acquired without knowledge or consent	6	5	1
Additional lands acquired after initial land sale	4	2	2
TOTAL	13	7	3

Source: Farmer interviews.

Various farmers and village officials alleged the company was only interested in obtaining land documents for plots in the area: not in growing biofuels. Equipped with land documents, the companies would be able to apply for bank loans using the land as collateral. According to the former plantation guard, Shivaleekha wanted the lands for *kanakku*, for namesake only.¹⁴ At least one farmer in each of the nine villages of the plantation area visited claimed the company was taking government bank loans using the lands. It does not appear this loan motivation is a mere rumor circulating amongst villagers. The Karasilpatti VAO bluntly stated this was the key reason for the land acquisitions and the Sattur Sub-Inspector of Police, the highest-ranking police officer in the taluk, said this sort of crime happens frequently in rural India.¹⁵ While he was unaware of such land-loan scams within Sattur, he confirmed instances of corporate-sponsored land grabs taking place elsewhere in the District in recent years. As will subsequently be discussed in the land records analysis section, some of the plots acquired by the companies have been mortgaged.

Additionally, one official at the state Planning Commission who asked not to be quoted indicated agricultural lands must be classified as *tharasu* for three years before they can legally be sold for real estate. A review of Tamil Nadu land sell laws uncovered no such law but according to a recent newspaper article, the government has recently established a committee to consider increasing the classification period from three to 10 years before agricultural lands can be sold for non-agricultural purposes (anon 2011).

Why this Region

From the villagers' perspective, the company targeted this area because of its history of poor rains. As discussed above, farmers often abandoned their lands once *Prosopis* invaded. This also sparked labor shortages in the village because the landless laborers typically hired as day laborers on farms (ie. agricultural coolies) began migrating out of the area for work. Additionally, the coolies sought out jobs at nearby paper and fireworks factories that began opening in the 1990s. Coolies who remained in the village started demanding higher wages and transportation to the fields as the lands in Soorangudi and Kongarakottai were about three to four kilometers from the village. Farmers could not afford these added costs and abandoned their lands.

These changes also impacted labor decisions within land owning families as well. Younger generations have become reluctant to take up farming and in some instances, have opted to migrate to the Middle East for work. According to one villager, a farmer would decrease his social status if he were to stop farming his lands and take a job in a local factory. He can maintain his social status by going to the Middle East. The younger generations have also been more willing to sell the family's agricultural lands perhaps because the wider changes in agrarian life have reduced the symbolic significance of land within the communities.

¹⁴ Interview with former Shivaleekha plantation guard, December 18, 2010 (the guard also sold 6 acres of land to the company).

¹⁵ Interview with Karasilpatti VAO, December 17, 2010 and interview with Sattur Sub-Inspector of Police, February 11, 2011.

Caste Politics

In one region of the plantation, caste politics may have also helped facilitate the land grab. The Pillai community is the main caste in the affected area. As will be described further below, the CPM intervened to help the affected farmers from this community get their lands back. Seven of the 13 affected farmers interviewed for this study are from the Pillai community.

The Pillais are a Tamil speaking, land-holding agricultural community. According to interviews with CPM leaders and the Sattur Sub-Inspector of Police, they are a minority community in Sattur taluk.¹⁶ In contrast, the land brokers who worked in area were members of the Naicker and Devar communities, two of the main communities in Sattur. Historically, both were warrior communities and at present, both are the main land-holding communities in Sattur. The Naickers migrated to Tamil Nadu from Andhra Pradesh and speak Telugu as their first language. The Devars speak Tamil as their first language. The Member of the Legislative Assembly (MLA) for this region is from the MDMK party, the main Naicker political party.

When recanting the specifics of the land grab, the Secretary of the CPM Sattur, who is a Naicker, proclaimed “if they (the land brokers) had tried this with our community (the Naickers), we would have beaten them”.¹⁷ The Pillais first went to the police and the MLA for help when they realized their lands had been taken. They were told to bring the land brokers in for questioning. Realizing they were outmatched by the Naicker and Devar communities, they turned to the CPM for assistance.

Discovery

Farmers found out that their lands had been appropriated in 2009-10 mainly in one of two ways. First, after another season of crop failures, the government offered relief assistance to farmers. To qualify, the farmers had to present their land documents and when the government examined the records, the farmers were told their lands were no longer in their possession.

Second, in July 2009, Shivaleekha placed an ad in a local daily newspaper, “Thinathanthi” (Daily Telegraph), announcing they had purchased lands in Soorangudi and Ayan Kongarakottai. The ad listed the survey numbers for 420 plots the company bought and asked anyone with objections to the sales to contact a lawyer in Madurai within seven days (anon 2009). A typist at the Sattur Land Registration Office saw the ad and informed a Soorangudi farmer who happened to be in the office that day. The particular farmer’s lands were listed in the ad although he had not consented to sell his lands. He took the advertisement back to the village to alert other farmers.

¹⁶ India does not currently conduct a case-based census. Therefore, caste demographics were obtained through key stakeholder interviews. Interview with Tamil Nadu Farmer’s Association Secretary, February 3, 2011, interview with CPM Secretary, Sattur, February 3 and 12, 2011, interview with Sattur Sub-Inspector of Police, February 11, 2011.

¹⁷ Interview with CPM Secretary, Sattur, February 12, 2011.

Of the 10 affected farmers whose lands had been acquired without their knowledge or consent (Table 5), two learned of the land re-registrations via the newspaper advertisement and 8 learned when they presented their land documents to receive government assistance.

Actions

“If they can’t support us, we’re all going to die”, Kongarakottai farmer commenting on decision to approach CPM for help, February 5, 2011

As described above, the Pillai farmers whose lands had been taken enlisted the help of the CPM to get their lands back. The CPM confronted one of the land brokers and brought him to the Pillais’ village for questioning. The party also held a protest in the village in 2007 to get the farmers’ lands returned. In this instance involving five farmers, the tactics worked and the lands were returned.

Of the five other farmers whose lands had been taken without their knowledge or consent, three have filed court cases and two are still deciding what actions to take. Of the three court cases filed, one farmer has received his lands back. It took one year to receive the judgment and the farmer spent close to Rs. 12,000 (\$267) in legal fees. Cases are still pending for the two other farmers and have been ongoing for seven months. These two farmers are from the Naicker community while the farmer who received judgment is from the Pillai community. However, he does not live in the same village as the Pillais who received help from the CPM.

Table 7: Current Status of Lands Acquired without Farmers’ Knowledge or Consent

		<i>Land Ownership Status</i>				
		Lands Returned		Still Owned by Company		
Farmer Type	Count	CPM Assistance	Court Case	Court Case Filed	No Action Taken Yet	TOTAL
land acquired without knowledge or consent	6	1	1	2	2	6
land acquired without knowledge or consent after initial land sales	4	4	0	0	0	4
TOTAL	10	5	1	2	2	10

Source: Farmer interviews.

The Role of Jatropha in the Land Grab

Shivaleekha began selling the plantation lands into real estate approximately two years after the initial acquisitions. This rapid turnover casts doubt on the company’s intentions to raise Jatropha plantations because the gestation period for the tree is about four to five years (Achten 2010).

However, various government biofuel support programs existed at the time of the land acquisitions, which may have been the company’s rationale for initially cultivating Jatropha.

First, in 2002, the Tamil Nadu government began issuing 30-year leases of government-owned wastelands to companies to grow Jatropha (Government of Tamil Nadu 2002). The program allowed for leases up to 1,000 acres. Second, in 2006, the Tamil Nadu government initiated the “Two-Acre Scheme” whereby two acres of either government or privately-owned wastelands were redistributed to landless and marginal farmers (Government of Tamil Nadu 2006). Recipients would be eligible for other programs that helped with land clearance and tree sapling costs, including Jatropha. The Two-Acre program was active in Sattur (Virudhunagar District Government 2010). As part of the program, the Tamil Nadu Watershed Development Agency (TAWDEVA) provides a subsidy of Rs. 1,800 per acre to remove Prosopis trees (Tamil Nadu Watershed Development Agency 2007).

Additionally, the state government set a target of cultivating Jatropha on 100,000 ha between 2007-2012, primarily through contract farming (Government of Tamil Nadu 2009). The government provides a 50% seedling subsidy, currently Rs. 1.5 per seedling, to participating farmers. The Agricultural Department administers the program and the Tamil Nadu Agricultural University provides the seedlings.

In addition to the national biofuel policy objectives reviewed in Section xx, the National Bank for Agriculture and Rural Development (NABARD), the principal agricultural development bank in India, has provided credit to support both wasteland development and Jatropha cultivation in Tamil Nadu (National Bank for Agriculture and Rural Development 2008). For 2011-12, NABARD has allocated Rs. 563 crore¹⁸ for wasteland land development projects in Tamil Nadu (National Bank for Agriculture and Rural Development 2010). Further research is needed to determine what subsidies or government assistance, if any, Shivaleekha received. Table 8 summarizes the various biofuels and land development programs in existence at the time of Shivaleekha’s land acquisition activities.

¹⁸ A crore is 10 million. Rs. 563 crores is about \$ 125 million.

Table 8: Summary of Government Biofuel and Land Clearance Programs, 2002-Present

Program	Status	Dates	Government Agency	Jurisdiction	Description	Source
Wasteland leasing program	discontinued	2002-2006	Tamil Nadu Watershed Development Agency	state	30-year leases of up to 1,000 acres of government wastelands to companies	1
Two-Acre program	ongoing	2006-Present	Tamil Nadu Watershed Development Agency	state	Redistribution of up to two acres per family to landless and marginal farmers	2
Prosopis land clearance	ongoing	2006-Present	Tamil Nadu Watershed Development Agency	state	Subsidy of Rs. 1,800 per acre to clear Prosopis	3
Jatropha sapling subsidy	ongoing	2007-Present	Tamil Nadu Agricultural Department	state	50% (Rs. 1.5/saplings) subsidy for Jatropha saplings	4
Jatropha cultivation target	ongoing	2007-2012	Tamil Nadu Agricultural Department	state	goal of cultivating Jatropha on 100,000 ha through contract farming	4
Wasteland development loan assistance	ongoing	since at least 2008*	National Bank for Agriculture and Rural Development	state	Rs. 563 crore allotted for 2011-12	5
National Mission on Biodiesel	never implemented	2003-04	Planning Commission	central	Jatropha biodiesel 20% blending target by 2011-12; Jatropha cultivation on 400,000 ha of wastelands	6
National Policy on Biofuels	ongoing	2009-Present	Ministry of New and Renewable Energy	central	20% biodiesel blending target by 2017; sole use of non-edible oilseeds grown on public and private wastelands	7
Biodiesel subsidies	under consideration		Ministry of New and Renewable Energy	central	National Policy on Biofuels calls for implementing minimum support prices (MSP) for oilseeds procurement and minimum purchase prices (MPP) for biodiesel	7
Preferential financing for biodiesel	under consideration		Ministry of New and Renewable Energy	central	National Policy on Biofuels calls on NABARD to provide farmer loans to establish biodiesel feedstock plantations	7

Note: * Three bi-annual NABARD State Focus Papers for Tamil Nadu are available online from 2007-2010. Each indicate the availability of wasteland development lending assistance. The start date for these programs is not mentioned in the reports.

Sources:

1. (Government of Tamil Nadu 2002)
2. (Government of Tamil Nadu 2006)
3. (Tamil Nadu Watershed Development Agency 2007)
4. (Government of Tamil Nadu 2009)
5. (National Bank for Agriculture and Rural Development 2010, 2008, 2007)

6. (Government of India 2003)

7. (Government of India 2009)

Other Land Grabs: This is not a Unique Occurrence

Based on stakeholder interviews, the land grab described above does not seem to be a one-time occurrence. Farmers mentioned they had heard of similar land acquisitions of about 1,000 acres each in Sevalpatti village (#41 in Figure 2) and Periyampatti village (#54 in Figure 2). Further, police officers at both the district and taluk level indicated such land crimes have been occurring in the region in recent years.¹⁹

Most starkly, when discussing the land grab with a businessman in Coimbatore, Tamil Nadu, he chuckled and said if I had investigated an area a little further to the Southeast, I would have uncovered his land grab.²⁰ Through the course of fieldwork, land grabs appeared to be an open secret in rural India. Land brokers inevitably showed up to numerous interviews when word spread through the village I was asking questions about land deals. No one was malicious and instead, most were over-eager to help me purchase lands, if that was my intention. Interestingly, the brokers appeared most quickly when interviewing government officials such as Panchayat Presidents or VAOs. While it is uncertain whether the government officials called the brokers, they were never turned away from the interview once they appeared. Only one government official interviewed, a VAO, expressed any semblance of sadness or shock over the land grabs taking place in his area.

Finally, it is likely the owners of many of the lands involved in the acquisition are not yet aware their lands have been re-registered. When the group of brothers from Kongarakottai were asked how many other farmers may be affected, they responded three categories of farmers are involved: (1) farmers who have gotten their lands back, (2) farmers who are fighting to getting their lands back and (3) farmers who are unaware their lands have been re-registered.²¹ When asked to identify the largest category, the emphatically stated category 3.

Outcomes

Land Prices

According to land brokers interviewed, low land prices and the abundance of abandoned land were the main factors in selecting this area for the plantation. At the time of the initial land purchases in 2005-06, the government prices of the plots in the plantation area, referred to as Guideline Values, ranged from Rs. 7,500-10,000 per acre (column 3 of Table 9).²²

¹⁹ Interview with Virudhunagar District Superintendent of Police, February 10, 2011, interview with Sattur Sub-inspector of Police, February 11, 2011.

²⁰ Interview November 20, 2010. The informant's identity is withheld to protect his identity.

²¹ Interview February 5, 2011.

²² Average of 2005-06 Guideline Values for plots involved in acquisition for which records were obtained. Guideline Values available at the Tamil Nadu Registration Department website: http://www.tnreginet.net/igregn/guideline_value.htm.

Additionally, based on the accounts of farmers and key informants, the price of lands along the roadsides had increased to over Rs. 100,000 per acre making remote sections of land more attractive.²³ As witnessed during fieldwork, much of the lands along the roadsides have been demarcated for new housing settlements such “VIP Nagar” and “New Sattur Town”.

Farmers were often aghast recounting how land prices have escalated since the land acquisitions began. Current land prices are Rs. 20,000-50,000 per acre, according to the farmers. Land brokers generally confirmed this account as each broker interviewed stated Rs. 50,000 per acre as the current market price. However, despite her best attempts to convince interviewees she was a student, the brokers and farmers continually offered to sell land to this author, which may have inflated the prices stated.

Land sales ultimately increase the Guideline Values for lands once sales are registered with the government. The current Guideline Values for lands involved in the plantation for which sufficient²⁴ records were obtained range from approximately Rs. 11,000-21,000 per acre (column 2 of Table 9). These values became effective August 1, 2007. The largest increases occurred in Soorangudi, the village with the largest area of the plantation. Guideline Values increased from around Rs. 8,300 in 2003-07 to Rs. 21,000 per acre in August 2007; nearly a 150% increase (column 5 of Table 9). The Guideline Values in 2002-03, the last set of Guideline Values available before the land sales in 2005-06, was roughly Rs. 7,500 per acre (column 4 of Table 9).

In all four villages for which land records were obtained, the August 2007 Guideline value increases over the 2003-2007 levels were statistically significant at an alpha value of 0.05 (column 7 of Table 9). None of the previous increases in Guideline Values from 2002-03 to 2003-07 were statistically significant at this threshold (column 8 of Table 9).

²³ Interview with Ottiyal farmer, February 12, 2011.

²⁴ A sufficient record for this analysis includes survey number, subdivision and area.

Table 9: Historic Guideline Values (GLV), 2002-Present¹

Village	Sample Size	GLVs			% Increases		T-tests for Diff's in Means	
		Current	2003-July 2007	2002-March 2003	2003-07-Current	2002-02-2003-07	2003-07-Current	2002-02-2003-07
	#	Rs	Rs	Rs	%	%	p-value	p-value
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Ayan Kongarakottai ²	103	11,106.80	7,470.87	6,962.14	48.67%	7.31%	0.0000*	0.0693**
Inam Kongarakottai	43	12,302.33	8,825.58	8,074.42	39.39%	9.30%	0.0003*	0.3016
Karasilpatti	14	17,521.43	10,321.43	9,042.86	69.76%	14.14%	0.0008*	0.4359
Soorangudi	41	21,000.00	8,317.07	7,536.59	152.49%	10.36%	0.0000*	0.0706**
TOTAL	201	61,930.56	34,934.96	31,616.00				

Notes:

1. In the government records, GLVs are listed as Rs/acre. The GLVs presented in Table 10 are the village averages of the calculated GLV for each survey (ie. the product of GLV and survey area).

2. Kongarakottai is split into two villages for the 2002-July 2007 GLVs.

* Values are statistically significant at an alpha value of 0.05.

** Values are statistically significant at an alpha value of 0.10.

Source:

Government Guideline Values (http://www.tnreginet.net/igreg/guideline_value.htm).

Land Record Analysis

Various land records were obtained from the farmers and through government purchases to triangulate the mechanics of the land grab described above (Table 4).

Encumbrance certificates (EC) were purchased from the government for 123 surveys involved in the land grab for which the requisite legal information was obtained.²⁵ The 123 surveys represent approximately 175 acres. In addition, farmers provided EC records for an additional 78 surveys, representing just over 63 acres. In total, records were obtained for just over 238 acres, approximately 30% of the total plantation area (800 acres). However, the survey area was missing for 18 of these surveys. Unfortunately, the farmers did not know the current patta number for these plots and updated ECs and area information for these plots could not be obtained.²⁶

The EC documents are 24-year ownership histories for each survey. They reveal each time a particular survey is sold or mortgaged and record the date and value for each transaction. The transaction value recorded in the EC documents appears to be based on the government Guideline Value for each survey. Based on interviews with key stakeholders, the Guideline Values are often lower than the market price of land in the fieldsite area. Thus, the sale values recorded in the EC documents may not accurately reflect the actual amount transacted in the land purchases.

Additionally, the EC records do not appear to document all of the surveys involved in a particular transaction; they will list only the survey numbers for which records were requested. Thus, without knowing the total number of surveys involved, it is challenging to determine the total area involved in a particular transaction. However, based on comparisons with other land documents collected from the farmers, the transaction values listed on the ECs reflects the entire value of the transaction. When necessary, the average area per survey from Table xx below was used to estimate the area involved in EC record transactions. Table 10 summarizes the EC records reviewed for this analysis.

²⁵ This includes land survey number and subdivision, survey owner, village, survey area and patta number, the number identifying all plots owned by a specific owner. Partial EC records were obtained from farmers for an additional 78 plots.

²⁶ After the lands were sold/acquired the company changed the patta number.

Table 10: Encumbrance Certificates Descriptive Statistics

	# Surveys				Area	Average Area/Survey
	EC Requests	Obtained from Farmers	Total	# Missing Area Data		
	#	#	#	#	acres	acres
	[1]	[2]	[3]	[4]	[5]	[6]=[5]/[3]
Ayan Kongarakottai	70	33	103	1	130.16	1.26
Inam Kongarakottai	1	42	43	16	20.32	0.47
Karasilpatti	14	0	14	0	43.91	3.14
Soorangudi	38	3	41	1	43.89	1.07
TOTAL	123	78	201	18	238.28	1.51*

Note: * TOTAL Average Area/Survey is area-weighted average.

Source: EC records database.

Each transaction in the EC records contains a unique document number. This proved to be a more useful variable by which to trace sales records in the EC record database because each transaction also contains the previous document numbers related to the transaction. The EC records acquired contained 113 unique document numbers. Of these, 106 transactions were related to Shivaleekha activities.²⁷ These transactions included transfers²⁸ from farmers to Shivaleekha, MS Greenenergy, or middlemen, exchanges between middlemen, sales from Shivaleekha to real estate companies, lien removals and mortgages. Additionally, some transactions are transfers to Shivaleekha, MS Greenenergy, or middlemen that have not been sold into real estate.

²⁷ These transactions included land partitions within families (n=5) and some land sales to agents outside the date range of the Shivaleekha transactions (n=2). The latter transactions involved the same two agents for seven individual survey purchases.

²⁸ The word transfer is used because it cannot be determined whether a given transaction included purchases from farmers and/or acquisitions without farmers' knowledge or consent.

Table 11: Land Transactions in EC Record Database Related to Shivaleekha (SL) Activities by Transaction Type

Category Code	Category Description	#	%
1	Farmer transfers to SL that are later sold to real estate	29	27.36%
2	Farmer transfers to middlemen	11	10.38%
3	Exchanges between middlemen	4	3.77%
4	Middlemen sales to SL	9	8.49%
5	SL sales to real estate	22	20.75%
6	Mortgages	4	3.77%
7	Lien removals	4	3.77%
8	Farmer transfers to SL or middlemen that have not been sold to real estate	23	21.70%
	TOTAL	106	78.30%

Source: EC records database.

These 106 transactions were screened to identify transactions that corroborated the farmer narratives; namely, plots that were acquired from farmers and sold to real estate companies. Of the 63 farmer acquisitions contained in the database (categories 1, 2 and 8), 40 were sold into real estate (categories 1 and 2) and three were later mortgaged. These transactions took place only in Ayan Kongarakottai and Soorangudi. None of the land records obtained from the 13 affected farmers interviewed revealed sales to real estate. However, five of the affected farmers have received their lands back and the remaining farmers do not know the current patta numbers for their lands. Therefore, their land records could not be accessed.

The 29 transfers from farmers to Shivaleekha (category 1) were registered at Rs. 564,225. As previously mentioned, the EC records do not contain the complete area involved in a given transaction. The area involved in a transaction was estimated using the average area per survey by village and the average Guideline Value on the transaction date for the survey numbers contained in the EC record (Table 10). Based on this estimate, just over 64 acres were involved in these transactions. Shivaleekha sold these plots to two real estate companies, Raj Green Valley Developers, Mumbai and Raigad Infra Projects Ltd, Mumbai.²⁹ These transactions were registered for approximately Rs. 1.3 million, nearly 150% more than the registration value at the time the plots were acquired from farmers.³⁰ The acquisitions from farmers occurred from April

²⁹ The number of transactions for the sales to real estate (n=10) is lower than the number of transactions for the farmer acquisitions (n=29) because the lands acquired from farmers were bundled into larger sections. The number of previous transactions involved in each of the sales to real estate ranged from one to five.

³⁰ Due to the small number of document numbers involved in the transfers/sales, tests of statistical significance cannot be performed on the changes in land registration values. However,

to July 2007 and the sales to real estate took place just two years later in September-October 2009. These transactions are summarized below in Table 12.

changes in Guideline Values drive the changes in registration values. The changes in Guideline Values for the survey villages were statistically significant (Table 9).

Table 12: Summary of Shivaleekha Acquisitions from Farmers and Sales to Real Estate

	<i>SL acquisitions from farmers</i>					<i>SL sales to Real Estate</i>					<i>Changes in Plot Values</i>
Village	# Trans.	Value	Derived Area	Value/Area	Trans. Dates	# Trans.	Value	Derived Area	Value/Area	Trans. Dates	% change
	#	Rs	acres	Rs/acre	date	#	Rs	acres	Rs/acre	date	%
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]=[9]- [4]/[4]
Ayan Kongarakottai	1	12,530	1.42	8,846	May-07	1	87,875	6.95	12,637	Oct-09	42.86%
Soorangudi	28	551,695	63.05	8,750	Apr-07- Jul-07	9	1,181,570	52.56	22,481	Sept-09- Oct-09	156.94%
TOTAL	29	564,225	64.47	8,752		10	1,269,445	59.51	21,331		143.73%

Source: EC records database.

The Shivaleekha acquisitions via middleman transfers reveal a similar pattern. Middlemen acquired approximately 182 acres from farmers valued at nearly Rs. 1.6 million. About 91 acres were then sold to Shivaleekha, registered at a value of Rs. 788,000. Shivaleekha sold about 147 acres valued at Rs. 1.96 million to real estate companies, nearly a 56% increase from the registered acquisition prices. The area sold to real estate is roughly equal to area initially acquired from farmers. However, the area transferred to Shivaleekha from middlemen is only half the area acquired from farmers. This indicates not all EC records relevant to these transactions were obtained. The farmer acquisitions took place in 2006 and the sales to real estate occurred in 2009. These data are summarized below in Table 13.

Table 13: Summary of Shivaleekha Acquisitions from Farmers through Middlemen and Sales to Real Estate

	<i>Middleman acquisitions from farmers</i>					<i>Middleman sales to SL</i>					<i>SL sales to Real Estate</i>					<i>Changes in Plot Values</i>
Village	# Trans.	Value	Derived Area	Value/Area	Trans. Dates	# Trans.	Value	Derived Area	Value/Area	Trans. Dates	# Trans.	Value	Derived Area	Value/Area	Trans. Dates	% change
	#	Rs	acres	Rs/acre	date	#	Rs	acres	Rs/acre	date	#	Rs	acres	Rs/acre	date	%
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]=[14]-[9]/[9]
Ayan Kongarakottai	10	1,330,296	149.64	8,890	June 06-Aug 06	3	540,146	60.31	8,956	May-07	7	1,716,790	135.86	12,637	Oct-09	41.09%
Soorangudi	1	250,180	32.23	7,761	Oct-06	1	247,410	30.81	8,029	May-07	1	245,180	10.91	22,481	Oct-09	180.00%
TOTAL	11	1,580,476	181.87	8,690		4	787,556	91.12	8,643		8	1,961,970	146.76	13,368		54.68%

Source: EC records database.

Lastly, there are three mortgage transactions in the database linked to land in Ayan Kongarakottai. These lands were sold by Shivaleekha into real estate after middleman acquisitions (Table 13 above). The registration value for the mortgaged plots, which were registered between July and December 2010, totals Rs. 70,000. Using the current Guideline Value and average area for plots in Ayan Kongarakottai, this value implies an area of 5.5 acres.

Finally, the value of the 23 records for lands acquired by Shivaleekha but not sold into real estate (category 8 in Table 11) totals nearly Rs. 1.06 million. The derived area for these transactions is approximately 72 acres. The largest valued transactions are located in Karasilpatti while the largest area of transactions is located in Ayan Kongarakottai. These transactions are summarized below in Table 14.

Table 14: Summary of Shivaleekha Acquisitions that have not been Sold to Real Estate

Village	Transactions	Value	Derived area	Date Range
	#	Rs	acres	date
Ayan Kongarakottai	13	424,785	48.02	Mar-06 - Jul-07
Inam Kongarakottai	1	43,290	7.05	Jun-06
Karasilpatti	8	567,275	15.16	Jan-07 - Mar-07
Soorangudi	1	22,375	1.61	Jun-07
TOTAL	23	1,057,725	71.84	

Source: EC records database.

The EC document analysis generally confirms the specifics of the farmers' narratives; Shivaleekha acquired the lands and soon after sold the parcels into real estate. Further, mortgages have been taken for a handful of plots, lending credibility to farmers' assertions the acquired lands have been used to obtain bank loans. However, additional research is needed to better investigate these claims as only three mortgages were listed in the EC documents.

SECTION 5: CONCLUSION

Based on the above analysis of farmer interviews and land records, it is specious whether restricting biofuel cultivation to marginal lands would bestow development benefits, as India's current biofuel policy alleges. In fact, the policy may be facilitating land grabs of government-classified wastelands owned by marginal farmers: a perverse outcome currently dispossessing farmers of their lands and agricultural livelihoods in at least one region of Tamil Nadu. Thus, instead of minimizing threats to rural welfare, biofuel cultivation on marginal lands may be exacerbating and amplifying these threats. Further,

marginal farmers often control the marginal lands in question; a class of farmers that typically lacks the political capital needed to challenge welfare threats such as the land grab described herein.

Further, the motives of the companies acquiring lands allegedly to grow biofuels are also questionable. If their intention is to sell lands into real estate, as indicated by occurrences in Sattur, the ability of biofuels grown on marginal lands to contribute to a country's energy security is also doubtful. Marginal farmers will not be the only ones at risk if this is the case.

Li, Scott and Ferguson's collective advice (Section 1) to examine the mechanics and outcomes of policies within the communities targeted for development has never been more sage.

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