Comparing the effectiveness of land distribution and integrated development as shelter and poverty alleviation strategies.

Evidence from Nouakchott, Mauritania

(This paper is still a work in progress. The results shown are based on preliminary fieldwork. Please do not distribute or quote without the author’s permission)

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INTRODUCTION

In this paper, I examine two strategies implemented in marginalized settlements at the urban fringe and compare their effectiveness in terms of enhancing participants’ income and improving their shelter conditions. The first is a minimalist land distribution strategy where squatters are granted titles to land parcels in the new sites to which they were relocated. The underlying assumption is that once the poor have been provided with secure property titles, they would incrementally consolidate their houses using their own resources and gradually work their way out of poverty. The second approach, often labeled ‘Integrated Development’, functions on the premise that secure landownership is often not enough per se to alleviate poverty, especially in remote marginalized settlements. The idea therefore is to provide a comprehensive assistance package that combines instruments from shelter and poverty alleviation strategies for the purpose of catalyzing physical improvements and promoting participants’ socio-economic development.

The integrated approach, which has become an a la mode development model in the 1990s, simultaneously addresses two problems: how to enhance the revenues of the poor to lift them out of income poverty and how to improve their access to basic healthcare, education, shelter, and infrastructure services. One of the factors that have enabled this approach to gain grounds is the development community’s growing dissatisfaction with the limited capacity of such abstract notions as absolute and relative poverty in providing an understanding of the different typologies of poverty. What was needed instead was a more comprehensive, operational definition of poverty that goes beyond the conventional income-based explanation in an effort to understand the obstacles thwarting poor families’ self-improvement strategies, especially those dealing with their unsatisfied basic needs. The integrated development model relies on a more comprehensive, ‘people-centered’ perspective of poverty. This approach was widely endorsed during the World Summit for Social Development in 1995, especially as donor groups committed to implementing “integrated approaches to poverty eradication, sustainable livelihood, and social integration”.1

My research is based on fieldwork that I conducted in Dar El Beida, an economically and socially marginalized settlement at the periphery of Nouakchott, Mauritania’s capital, where an integrated development program, known as Twizé, was piloted in 1999. Twizé, the outcome of a public-NGO partnership, provides shelter construction finance, basic infrastructure improvements, capacity building, and revenue-enhancing schemes. Prior to participating in the program, Dar El Beida residents had received the titles to their land parcels as part of a squatter relocation program in 1995. A key component of the research, which is used in assessing the impact of the integrated development and land distribution policies, is a questionnaire administered to three randomly selected population samples consisting, respectively, of Twizé program participants, landowners who have not participated in the program, and squatters who have settled in Dar El Beida since 1995. In addition, a recent initiative to regularize land tenure in Dar El Beida’s squatter pockets provides interesting insights as to the logic underlying many households’ decision to squat.

The Twizé program is interesting because it represents the first comprehensive effort to tackle poverty and social exclusion in Nouakchott’s marginalized settlements starting with the urban fringe. The fight against poverty in Mauritania, of which Twizé is a key component, gained prominence in the late 1990s. The Mauritanian government prepared a ‘Strategic Framework for Poverty Alleviation,’ which became the official development policy document as per the requirements of the International Monetary Fund/World Bank Highly Indebted Poor Countries’ debt initiative. The reward came in February 2000 with the cancellation of 40% of Mauritania’s multilateral debt on the condition that the freed resources are devoted to poverty alleviation programs. This responsibility falls primarily on the Commissariat aux Droits de l’Homme, à la Lutte Contre la Pauvreté et à l’Insertion, which was created in 1998. Its

1 Garson 1999, pp.2-3
mandate is to improve living conditions for the 50% of Mauritania’s 2.6 million inhabitants who live in poverty and mitigate structural adjustment’s negative impacts during the 1990s. One of the Commissariat’s key initiatives was to finance the Twizé program to improve living conditions in urban areas, in collaboration with NGOs.

This paper is organized in four sections. The first background section analyzes the impact of rapid demographic growth and inefficient land management on reinforcing the condition of poverty and marginalization in which more than 40% of Nouakchott’s population lives today. It is against this background of social exclusion, especially in low-income fringe settlements, that the Twizé program was conceived. The second section introduces the program and examines its methodology and financial framework. In the third section, I assess shelter improvements and enhanced family earnings in Dar El Beida, respectively, as a result of participation in Twizé’s housing finance and revenue-enhancing schemes. Twizé’s impact is compared with the effect that secure land tenure—the product of the 1995 squatter relocation program—might have had on housing conditions and family income. Concluding remarks are presented in the final section.

BACKGROUND

Nouakchott’s population grew from just 5,000 inhabitants in 1960 to about 800,000 in 1999, which amounts to an average growth rate of 14% per annum over the four decades. Between 1961 and 1997, the city’s urban primacy (the ratio of its population relative to that of the three next largest cities combined) grew sevenfold. Today it houses 30% of all Mauritanians and half of the urban population. The city’s sharp population growth was mainly fueled by a massive in-flow of rural migrants and nomads who sedentarized as a result of severe droughts in the 1970s. Both factors have radically altered the population distribution in post-colonial Mauritania. In 1960, at the eve of independence, only 3% of all Mauritanians lived in urban areas whereas more than 75% were nomads. Today, half of the population lives in urban areas and all but 10% have abandoned their nomadic lifestyle. Efforts by national authorities to provide services, equip land parcels, or build shelter were completely incapable of coping with the rapid urbanization rate. In Nouakchott, traditional planning efforts failed to satisfy even the most basic needs of a rapidly growing population. Master plans still on the drawing board were already useless as population growth kept surpassing projected targets. In addition, the lack of a coherent development strategy and the quasi-absence of urban management tools, especially cartography and land registration, have led to two serious urban problems.

Nouakchott’s urban problems

The first problem is Nouakchott’s rapid and unplanned sprawl, which increases the cost of providing services. The city’s urbanized area grew from 500 hectares in 1964 to more than 10,000 hectares today. Overall, the city has low population and development densities, which are due in part to Mauritanians’ preference for large tracts of land and detached single-family houses. The urban fabric also contains considerable undeveloped ‘voids’ that include some 50,000 parcels in peripheral land subdivisions whose owners have been unable to develop due to the lack of property boundaries.

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2 In the analysis of Nouakchott’s dysfunctional land management, I rely on interviews that I conducted with public officials as part of a study prepared by the Center for Urban Development Studies at the Harvard Graduate School of Design, in which I participated (CUDS 2000).
3 Nouakchott’s growth rate is three times as much as the West African capitals of Dakar, Senegal, and Bamako, Mali, which were considered fast growing. URBAPLAN (2000) p.3
4 ADEF (2000) p.11
5 Cherif et al (1999) pp.6-8
6 43% of Nouakchott’s urbanized area has a population density of less than 100 persons per hectare (Bertaud 1995). In addition, only 1.5% of the population lives in apartment buildings (ONS 1991)
7 Interview with DBHU, Direction des Bâtiments, de l’Habitat, et de l’Urbanisme. CUDS (2000)
One of the consequences of Nouakchott’s sprawl is that the cost of providing infrastructure services is elevated. In addition, the geography of squatter settlements creates several interruptions in the primary networks, thus making the unit cost of extending services to legal but remote settlements far in excess of what their low-income population could afford. As a result, peripheral land subdivisions remain largely unserviced. To date, only 30% of the population is connected to the electricity and piped water supply networks. The rest of the population relies for water supply on public standpipes (on average, one standpipe services 2,000 inhabitants) and on vendors who charge exorbitant rates that penalize the more remote and often poorer settlements.

Second, Nouakchott is faced with a shelter crisis that affects its low-income population. For three decades, the poor have been building makeshift structures on squatter land in the urban fringe. Today, more than 40% of the population does not have secure land tenure. Half of all households live in makeshift housing and 60% live overcrowded in one-room units. In addition, 71% do not have access to latrines at all or rely on shared facilities.

The government has attempted since the early 1970s to tackle the problem by subsidizing low-income housing construction and by giving new migrants land parcels to build their own houses. The impact of the shelter construction program was negligible. SOCOGIM, the public company created in 1974 with a mandate to build low-income housing, could only develop 2,000 units in 25 years. The company’s output could not solve the shelter crisis in a city where the unmet demand exceeds 30,000 units. Even worse, SOCOGIM was forced to switch to commercially viable developments in 1989 after government transfers for low-income housing had dried up.

In contrast, the program to give land to the poor had a more significant impact, but it has not been without problems. The earliest effort took place in 1974 when the government provided land parcels to resettle the nomads who flocked to the city after the drought of 1972. Between 1974 and 1988, land distribution proceeded at a sporadic rate. However, since 1988, between 10,000 and 15,000 parcels, mostly in peripheral land subdivisions, have been allocated for residential use each year.

The scale of land distribution over the past decade only should have certainly covered all unmet demand in the city. According to the consultant developing Nouakchott’s new master plan, the number of land parcels that were distributed should have housed approximately 1.8 million inhabitants, or more than double the current population. How could it be then that after such large-scale land distribution, there is still a shelter crisis (as attested by the prevalence of squatter settlements and substandard housing conditions) that affects the majority of the population in Nouakchott? To solve this contradiction, we need to understand how the cost of Nouakchott’s inefficient land management process was largely borne by the poor.

**Land management inefficiencies**

Three key aspects of Nouakchott’s dysfunctional land market have adversely affected the low-income population. The first problem is that municipalities have no real authority to attribute urban land even though the decentralization law of 1986 has devolved the power to them. In reality, national and regional authorities still control the process. Government’s reluctance to transfer land distribution prerogatives is primarily attributed to municipalities’ limited human resources and lack of urban management expertise. Giving up the power to allocate urban land, which is by far the lowest risk, highest return investment channel due to the absence of alternative economic opportunities, also means losing a major source of
political clout. Municipalities’ exclusion from land distribution led to a major problem because the same law put municipalities in charge of providing and maintaining infrastructure services. Municipal service delivery is clearly unfeasible in the absence of revenues generated from land sales, which ends up affecting poorer, unserviced settlements more than other areas of the city.

The second problem is that the State’s distribution of land at heavily subsidized prices has encouraged speculation. With market prices fetching as much as 10 times the so-called social price charged for land in new peripheral subdivisions, many beneficiaries sell their attributed parcels to realize substantial windfall profits. The large price gap also encourages squatting in the hope of tenure legalization in the future, with the result that public land today is squatted upon up to 40 kilometers beyond the urbanization perimeter. Meanwhile, the absence of infrastructure services and construction finance, and the inaccessibility of new extensions severely constraint land development. Many people therefore acquire land without intending to develop and occupy it, but rather to sell it.

Measures to curb speculation are hard to implement. Issuing a land title, which is the legal basis for land transfers, is a very complex process that requires paying large sums of money. As a result, only 12,000 land titles are recorded nationwide. Yet, the absence of titles has not stopped land transfers. Cadis (judges) and Sheikhs (acting as public notaries in the presence of two witnesses) accept occupancy permits as a basis for land transfer. As such, most property transfers remain undocumented, which contributes to the loss of significant fiscal revenues that could have financed the delivery of services.

The third problem is that the low social price charged for land does not generate enough resources for government to finance the delivery of infrastructure services, with the result that land subdivisions for lower-income groups do not usually have more than few public water standpipes. Other services are provided later, only after a settlement acquires a significantly large population to lobby public officials. The absence of services deters most beneficiaries from occupying their parcels. Most fringe settlements therefore have low population densities, with a concentration of poverty and marginalization.

The geography of poverty and marginalization in Nouakchott

In trying to map the geography of poverty and marginalization in Nouakchott, an obvious starting point is squatter settlements. These fall into two categories: gazzras and kébbés, which differ in their population density, housing typologies, and, more importantly, in the level of community organization and their interface with the authorities. Of all squatters, kébé residents are the poorest and live in the most insalubrious conditions. Kébbés (meaning garbage dumps) contain the city’s highest population densities, sometimes exceeding 600 persons per hectare. The lack of de jure land tenure or de facto security (residents are often faced with eviction threats) explains the absence of permanent structures. The extent of blight makes authorities reluctant to regularize kébbés, and their development density hinders service provision efforts. As a result, residents perceive kébbés as temporary locations associated with the stigma of poverty. Their best hope is that authorities would relocate them at some point to any legal land subdivision.

Gazzras differ from kébbés in that they are premeditated settlements that form through a gradual invasion process. Occupants anticipate new subdivision plans and they build to a lower density (150 to 300 persons per hectare, compared to 450 to 600 persons per hectare in a typical kébbé). Most importantly, residents perceive their gazzra as a terminal location. In the more established settlements, residents with means and political connections preempt authorities from evicting them by building permanent housing structures. They then fight for the legalization of their properties in accord with a provision in the 1983 Property Act.

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14 CUDS (2000)
15 Bertaud (1995)
16 Bertaud (1995)
Compared to kébbés, gazzra residents are by and large more politically vocal about settlement restructuring and their integration in the city’s social fabric.

Yet, poverty and marginalization in Nouakchott are far from being confined to the map of illegal land tenure in the city. Many of the city’s poor, if not the poorest, live in legal land subdivisions located in the urban fringe. These settlements are for the most part accessible via unpaved paths only. Residents are forced to walk for long distances before finding collective transportation, and thus end up spending large amounts of time and money commuting to employment centers. Although these settlements usually have few public standpipes, the poor water quality causes the spread of waterborne diseases and its scarcity hinders construction. No services can be found in these settlements, at least until they become densely populated. Finally, basic necessities are sold in few small informal shops at large profit margins due to their isolation-induced monopoly.

Given the hardship of living in these settlements, many poor landowners end up selling their parcels to more affluent groups who can afford to wait for services to come in the future. In this case, speculation slows down the settlements’ densification, which further delays the arrival of services. As for the poor who have no choice but to settle in these settlements, physical isolation and social exclusion thwart their self-improvement efforts.

THE TWIZÉ INTEGRATED DEVELOPMENT PROGRAM

The Twizé integrated development program assists low-income families in three ways. First, it provides credit to finance the construction of a minimally appropriate shelter. A special fund is used to improve basic infrastructure services, especially water supply. Second, it provides revenue-enhancing schemes in the form of financial and technical assistance to families operating small and micro-enterprises (SMEs) and skilled and unskilled jobs in the labor-intensive shelter construction process. Finally, the program builds the capacity of community members by providing basic literacy classes and training modules teaching skills useful for future income generation in the building trades and artisanal work.

The Commissariat finances the program, which GRET coordinates. Twizé is gradually scaled up over three phases. The first is the pilot project phase, which was implemented in Dar El Beida in mid-1999. It was followed by a one-year intermediary phase in which the program was expanded to cover four peripheral settlements. In the final phase, which was due to start in mid-2001 with co-financing from the World Bank, the aim is to replicate the program with the collaboration of local NGOs in all marginalized settlements in Nouakchott, including kébbé Marbat, the city’s largest squatter settlement whose legalization started in 2001. A management board administers the program and monitors implementation. Its membership includes representatives from GRET, the Commissariat, and the municipality of Nouakchott.

SOCOGIM participated in the first two phases during which it provided technical assistance in construction work.

Dar El Beida is located near a municipal dump ground at 7 kilometers from the city center. The site was selected in 1995 to relocate squatters after a fire destroyed their shacks. Population density was initially very low due to the lack of property delimitation and the settlement’s isolation. Accessibility improved however when the Commissariat financed the stabilization of two unpaved access roads in 1998. Until Twizé started, the only infrastructure service available was water, supplied by one public standpipe.

Program methodology

The program combines shelter finance with revenue-enhancing schemes with the aim of creating viable neighborhoods where residents have access not only to adequate shelter, but also to jobs and improved revenues. The idea is to minimize resident turnover in peripheral

17 The absence of services causes numerous hardships. For instance, families spend large sums of money to transport children to other neighborhood schools. The absence of health centers requires that emergencies be transported to the city, which is very complex in the absence of transportation means or telephones.
18 Facts in this section draw on project documents (Allou and Ould Moulaye Zeine 1999) and interviews.
settlements. Job creation and the assistance to SMEs are also intended to increase participants’ revenues, which should improve loan repayment rates. Shelter construction is used as an entry point to the neighborhood to generate visible results soon enough, which should build residents’ confidence in the program.

Two innovative features characterize the program’s integrated approach. First, Twizé uses a demand-driven approach to fill the gap between participants’ shelter needs and what they can afford to pay. The strategy is to maximize the ratio of program investments in construction that is localized in the settlement to benefit residents through job creation. Twizé also addresses the supply side by adopting incremental construction and reduced planning standards to lower housing costs. By not restricting its focus on supply-driven measures, the integrated approach addresses a key shortcoming that is often attributed to such housing strategies as self-help.

Second, the program uses two sequences in delivering shelter and revenue-enhancing schemes. Usually, there are two distinct income groups within the community that differ in their priorities. The first consists of low-income families earning less than US$75 per month, which was deemed the minimum earnings level that could comfortably meet the monthly shelter loan repayments of US$13. These families are encouraged to start with the program’s revenue-enhancing schemes, which it is hoped would improve their earnings so that they could afford the required down payment. Increased earnings should also improve their capacity to service their debt. The second group consists of moderate-income families with earnings exceeding US$75 per month. Shelter construction is their top priority. They can initially afford the relatively large down payments and are expected to meet their financial obligations without the help of revenue-enhancing schemes. In their case, microcredit for economic activities is intended to trigger the process by which they can permanently step out of poverty. This dual sequence therefore tailors differentiated assistance packages, which avoids imposing a universal formula to all participants.

Twizé is also unusual in that it builds on existing community-based structures. Twizé, meaning together, exemplifies a tradition of solidarity in rural areas and among nomads who cooperate in building houses and digging wells. Twizé-type solidarity seems well suited for interventions in Nouakchott’s fringe settlements since communities there usually consist of relatively homogeneous ethnic groups that have settled relatively recently in the city. For this reason, the program administers shelter and economic activity loans to solidarity or Twizé groups that assume collective liability for individual defaulters. Program administrators also promote group communication to avoid the individualization of the process. The aim is to enable the building of a collective voice for residents so that they could participate effectively in the decision-making and management of their neighborhood. To achieve this goal, Twizé promoted two community-based initiatives. The first and rather successful initiative was to create a neighborhood assembly that meets each month to discuss problems and concerns. The second was to form community-based committees to manage collective facilities including public water standpipes. However, the settlement’s political leaders ended up appropriating most jobs for their family members.

Finally, Twizé adopts a progressive housing finance strategy that matches the incremental shelter construction method used by most low-income families to reflect their priorities. In this strategy, the shelter package is unbundled into its most basic components: a room, a latrine, and a perimeter wall. Financing can be contracted for each element separately in the form of short-term loans given to solidarity groups, and for all components using the sequence that is most appropriate for each family’s needs. The strategy is particularly suited for the program’s target groups who have no assets to offer as collateral, who can only contract limited debt amounts with short-term maturities, and who are more likely to sustain

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19 In 1999, 14% of all surveyed families had monthly revenues below US$75, whereas 80% earned between US$75 and US$200 per month, which was supposed to be the maximum income threshold for participation (Ould Moulaye Zeine 1999 p.13). My survey however indicates that the income limit was not enforced.
debt repayments that follow flexible schedules. Collective liability for individual defaulters within a solidarity group and the prospect of subsequent, larger loans for groups with an excellent credit history provide incentives for prompt repayment.

Financial framework

Shelter components are financed using a three-tiered package. Participants make upfront down payments equal to 25% of construction cost, which the Commissariat matches with a subsidy of equal amount. The remaining 50% are in the form of a zero interest loan repayable over two years. To be eligible for housing finance, families have to provide a proof of legal occupancy. Housing loans carry no interest in accord with the Islamic law, Shari’a. The decision to subsidize shelter construction was intended to balance the debt burden with residents’ surveyed earnings.

Additional subsidies were however introduced in the intermediary phase. Commissariat officials reduced the down payment to 17% to make it more affordable. They also subsidized latrines and perimeter walls because pricing at cost had generated little demand. Residents now receive latrines upon payment of a fraction of the cost and walls are provided free of charge as an incentive for prompt shelter loan repayment. These modifications increased the ratio of subsidies to total development cost from 31% at the end of the first phase (including the forgone loan interest) to a whopping 59% by the time the entire shelter package is completed, which totally undermined the potential for cost efficient replication.

THE TWIZÉ PROGRAM’S ACHIEVEMENTS AND IMPACT ASSESSMENT

Methodology

To quantify the Twizé program’s impact relative to the previous land distribution strategy in Dar El Beida, I surveyed shelter and socio-economic conditions using a questionnaire administered to three randomly selected samples that represent the following population groups:

1. **Twizé participants.** These include shelter finance recipients and beneficiaries of revenue-enhancing schemes. All Twizé participants became legal landowners in 1995 following their relocation from their previous squatter settlement. As such, Twizé participants participated in both the integrated development and land distribution programs.

2. **Non-participating landowners.** These have not benefited from Twizé’s shelter finance or revenue-enhancing schemes. However, they obtained legal property titles after their relocation in 1995. When compared to Twizé participants, these families represent a satisfactory control group against which to measure the impact of the Twizé program, especially its revenue enhancing and shelter finance components. (Impact I in Graph 1.)

This treatment-control study is not free of imperfections, since two sources of bias are likely to have affected the selection of the first group of Twizé participants. The first is the agency bias. Program administrators are likely to have ‘hand-picked’ the first families to receive housing finance from the pool of eligible applicants to ensure the demonstration’s success. My fieldwork observations suggest that some population ‘creaming’ has in fact occurred by selecting some tribe leaders and relatively dynamic residents. A second form of bias, the population’s self-screening, is also likely to have occurred before the program had established a solid base in the neighborhood. It is conceivable that the more educated residents and formal sector employees might have better understood program requirements or were more likely than others to trust a publicly financed scheme. The socio-economic profile of household heads in the housing finance recipients’ sample seems to support in part the self-screening hypothesis.
I rely on multivariate regression analyses to control for the variables causing such biases. These biases should also be partly counterweighted by the random inclusion in the non-participating landowners’ sample of some families that were denied Twizé loans because their income exceeded the upper threshold and/or they had already consolidated housing. By definition, these families’ earnings and housing investment level exceeded those of Twizé participants before the program started. Their inclusion in the sample acts in the opposite direction to the aforementioned biases.

3. **Squatters.** Despite living in Dar El Beida, these families could not participate in Twizé because they did not have legal property titles. A core group among these squatters was relocated in 1995 from the same squatter settlement as with the other landowners. Some were omitted from the population census that preceded relocation because they were absent, while others were deemed ineligible because they did not have identity cards. Some were even given land parcels, but the entire sector that contained their parcels was subsequently expropriated for security purposes without compensating their owners.

With the exception of secure land tenure, these squatters were on the whole subjected to identical conditions as Twizé participants and non-participating property owners. Their properties are adjacent to the property owners’ parcels, which means that they have equally suffered from Dar El Beida’s physical isolation, the shortage in infrastructure services, and the lack of transportation means. They therefore provide an adequate control against which to measure the impact of the land distribution program on shelter improvements when compared with non-participating property owners (Impact II in Graph 1), and the dual impact of secure landownership and integrated development when compared with Twizé participants (Impact I+II in Graph 1).

![Graph 1: Housing investment in Dar El Beida](image)

**Key**
- *Twizé shelter finance recipients:* from squatters to landowners in 95 to shelter recipients in 99
- *Twizé microcredit recipients:* from squatters to landowners in 95 to microcredit in 99
- *Non-participating Landowners:* from squatters to landowners in 95.
- *Squatters:* did not get land titles upon moving to Dar El Beida in 95.
Housing construction: achievements and limitations

During the first 18 months, Twizé covered approximately 30% of the eligible population in Dar El Beida. A total of 130 one-room houses, 100 latrines, and 100 perimeter walls were built. Following the first year’s modest target of 50 houses, construction proceeded at a much faster pace. Water quality improved with the upgrading of the secondary network and the construction of three additional public standpipes. Finally, a comprehensive effort to delimit land parcels was initiated to facilitate the settlement’s densification.

Twizé catalyzed significant shelter improvements for many residents who have not managed to consolidate their shelter during the four-year period since their relocation. Preliminary fieldwork results indicate that only 7% of the surveyed landowners living in Dar El Beida had self-financed shelter improvements in the four years before Twizé was launched while 35% of the properties surveyed have changed hands during the same period. These findings contest the conventional assumption that secure land tenure is all what it takes to induce a large number of limited-income households to incrementally improve their houses using their own resources. In reality, land tenure is often granted to the poor in remote inaccessible locations such as Dar El Beida, and unless subsequent actions are taken to improve living conditions (e.g. infrastructure investments or adapted shelter finance instruments), the impact of land tenure per se will remain limited.

The variable I used to measure shelter improvement is the total amount that households invested in housing improvement and further land acquisition since their relocation to Dar El Beida. This includes formal and informal loans, but excludes any subsidies received. Obviously, the bulk of housing investments by Twizé participants occurred after the program start, whereas for the other groups, investments should in theory be more evenly spread over their entire stay in Dar El Beida.

I undertook a multivariate regression analysis using dummies for the Twizé shelter finance recipients and for landownership to determine the impact of both policies on families’ investment in improving their housing conditions. I controlled for the following factors that could have influenced the investment amount and timing: total monthly income, family size, the household head’s age and educational achievement, the percentage of informal employment (to control for insecure revenue streams), a single-headed household dummy, commute time to work (to assess the extent of a family’s isolation/connection to the city), their previous housing type (a proxy for socio-economic status), and finally the extent of financial assistance received in the form of subsidies and loans.

Controlling for these factors, the average family that received Twizé’s shelter finance invested in shelter consolidation and further land acquisition 229% as much as a landowning household with identical characteristics, except that it has not participated in the program (Impact II in Graph 1). In turn, the average non-participating landowning household spent 210% as much as an otherwise identical squatter family in improving their shelter condition (Impact I in Graph 1). The dummies for Twizé shelter finance recipients and for landownership are significant at the 10% and 5% level respectively. (See Table 1.)
Table 1. Regression results: Total household investment on land and housing

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Log total household investment in land and housing (N=63)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-square</td>
<td>62.92%</td>
</tr>
<tr>
<td>R-square-adjusted</td>
<td>55.79%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Coefficient</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly household income</td>
<td>0.0000405</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Twizé housing participation dummy</td>
<td>0.8558</td>
<td>(0.074)</td>
</tr>
<tr>
<td>Landownership dummy (Twizé &amp; non-Twizé)</td>
<td>0.7745</td>
<td>(0.013)</td>
</tr>
<tr>
<td>Household size</td>
<td>-0.0816</td>
<td>(0.098)</td>
</tr>
<tr>
<td>Household head educational achievement (years)</td>
<td>0.1031</td>
<td>(0.091)</td>
</tr>
<tr>
<td>Percentage assistance received</td>
<td>2.7522</td>
<td>(0.094)</td>
</tr>
<tr>
<td>Percentage assistance received squared</td>
<td>-2.8214</td>
<td>(0.134)</td>
</tr>
<tr>
<td>Commute time to work</td>
<td>0.0048</td>
<td>(0.302)</td>
</tr>
<tr>
<td>Previous permanent housing dummy</td>
<td>-0.5462</td>
<td>(0.320)</td>
</tr>
<tr>
<td>Household head’s age</td>
<td>0.0219</td>
<td>(0.204)</td>
</tr>
<tr>
<td>Single-headed household dummy</td>
<td>Non-Significant</td>
<td>Non-Significant</td>
</tr>
<tr>
<td>Percentage informal employment</td>
<td>Non-Significant</td>
<td>Non-Significant</td>
</tr>
<tr>
<td>Constant</td>
<td>7.5935</td>
<td>(0.000)</td>
</tr>
</tbody>
</table>

The evaluation of Twizé’s merit as a shelter strategy per se as opposed to an integrated poverty alleviation and shelter program uncovers a critical bottleneck that affects the efficiency of the housing delivery system. In an attempt to localize program investments within the settlement, Twizé trains residents in building trade skills. However, the scale of the training program is not proportional to the size of housing demand. The shortage in skilled labor therefore affected the overall pace of shelter delivery. The modification of Twizé’s financial framework by offering below-cost shelter products has also ruled off any possibility for cost efficient replication.

By the end of the first phase where only core houses were financed, Twizé had leveraged significant resources from participants towards shelter improvements. For each Ouguiya of public subsidies, residents spent on shelter improvements and further property acquisition an average of 3.4 Ouguiyas in the form of equity and debt. The subsidization of latrines and perimeter walls however reduced the overall leverage ratio by 60% to just 1.4. If anything, the issue of subsidizing the latrines and perimeter walls is a manifestation of the classic conflict over planning and design standards between public officials and operational NGOs. Public officials deem the one-room shelter standard proposed by GRET as too low. Politicians clearly do not want to be accused of financing the construction of slums, hence their efforts to improve sanitation and the settlement’s physical appearance even if at the expense of the program’s financial sustainability.

Finally, the program resulted in an interesting indirect multiplier effect. Survey results show that some non-participating property owners perceived the Twizé program as a sign of government’s ‘recognition’ of their hitherto marginalized settlement, which led them to self-finance shelter improvements that they had thus far been reluctant to undertake. Had such a multiplier been anticipated in program design, measures to facilitate land development (e.g. an earlier property delimitation effort) and to reduce construction costs (e.g. large-scale production of building materials) might have catalyzed more housing consolidation in the settlement.

Revenue-enhancing schemes: achievements and limitations

The program created approximately 70 new construction jobs in Dar El Beida, evenly divided between skilled and unskilled work. 100 borrowers received microcredit to develop or

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20 The results shown in this paper are based on the preliminary fieldwork that I conducted in Dar El Beida in May 2000 and in which I interviewed 63 households. The final results will be based on a sample of 142 households, which I interviewed in Dar El Beida in March 2001.
expand small businesses and many received technical assistance in the two prevailing economic activities in the settlement (textile dyeing and couscous processing) to improve their productivity, product quality, and distribution network. Finally, the program trained 20 women in textile dyeing and 30 men in building trade skills.

I undertook a multivariate regression analysis to determine the predictors of monthly household income using dummies for landownership and for participation in Twizé’s microfinance program. I controlled for the following factors that were expected to affect household earnings: family size, number of workers, a single-headed household dummy, the household head’s age and educational achievement, the percentage of informal employment, commute time to work, and the family’s previous housing type.

All else equal, Twizé’s microfinance program could be credited to have increased monthly household income by as much as 17% over a landowning family and by 48% over a squatter family, both having otherwise identical characteristics. These results are however inconclusive because of the preliminary fieldwork’s limited sample size (Table 2, model A). In turn, secure land tenure explains a 29% increase in monthly income over an otherwise identical squatter household (significant at the 5% level).

Interestingly, the extent to which a family relies on income generated from home-based activities (HBAs) is a significant predictor of monthly earnings (significant at the 10% level). The monthly income of the average landowning household that derives half of its earnings from HBAs is predicted to be 17% higher than an identical family that does not have any HBA-derived revenues (Table 2, model B). This finding strongly supports the extension of microcredit since it is given in assistance to economic activities that almost always take place at home.

Table 4. Regression results: Monthly household income

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Model A</th>
<th>Model B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Log monthly household income (N=63)</td>
<td></td>
</tr>
<tr>
<td>R-square</td>
<td>58.19%</td>
<td>60.39%</td>
</tr>
<tr>
<td>R-square-adjusted</td>
<td>48.15%</td>
<td>50.88%</td>
</tr>
</tbody>
</table>

**Variables included:**

<table>
<thead>
<tr>
<th></th>
<th>Coeff (Significance level)</th>
<th>Coeff (Significance level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household size</td>
<td>0.0276 (0.117)</td>
<td>0.0267 (0.119)</td>
</tr>
<tr>
<td>Number of workers</td>
<td>0.2033 (0.000)</td>
<td>0.2026 (0.000)</td>
</tr>
<tr>
<td>Single-headed household dummy</td>
<td>-0.1185 (0.325)</td>
<td>-0.2175 (0.095)</td>
</tr>
<tr>
<td>Household head educational achievement (yrs)</td>
<td>0.0321 (0.156)</td>
<td>0.0233 (0.284)</td>
</tr>
<tr>
<td>Percent employment in the informal sector</td>
<td>-0.3034 (0.051)</td>
<td>-0.399 (0.012)</td>
</tr>
<tr>
<td>Landownership dummy (Twizé &amp; non-Twizé)</td>
<td><strong>0.2532 (0.023)</strong></td>
<td><strong>0.2677 (0.011)</strong></td>
</tr>
<tr>
<td>Twizé microcredit dummy</td>
<td>0.1372 (0.351)</td>
<td>(*)&amp;</td>
</tr>
<tr>
<td>Percent reliance on home-based activity income</td>
<td>(*)</td>
<td>0.3185 (0.06)</td>
</tr>
<tr>
<td>Household head’s age</td>
<td>0.0776 (0.092)</td>
<td>0.0946 (0.037)</td>
</tr>
<tr>
<td>Household head’s age squared</td>
<td>-0.0009 (0.079)</td>
<td>-0.0011 (0.032)</td>
</tr>
<tr>
<td>Commute time to work</td>
<td>0.0088 (0.061)</td>
<td>0.0092 (0.042)</td>
</tr>
<tr>
<td>Commute time to work squared</td>
<td>-0.0001 (0.035)</td>
<td>-0.0001 (0.017)</td>
</tr>
<tr>
<td>Previous shelter type (perm=1;shack=2;tent=3)</td>
<td>-0.1698 (0.095)</td>
<td>-0.2052 (0.041)</td>
</tr>
<tr>
<td>Constant</td>
<td>8.4443 (0.000)</td>
<td>8.1908 (0.000)</td>
</tr>
</tbody>
</table>

(*) The percentage of income derived from home-based activities and the microcredit program dummy are modeled separately because of their strong correlation.

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21 These results should be treated with caution due to the preliminary fieldwork’s small sample size. In addition, the tendency to underreport earnings is likely to differ largely among three groups. Income underreporting serves squatters more than others in communicating their plight to public officials, thus reinforcing their claim for tenure legalization.

22 The results shown in this paper are based on the preliminary fieldwork that I conducted in Dar El Beida in May 2000 and in which I interviewed 63 households. The final results will be based on a sample of 142 households, which I interviewed in Dar El Beida in March 2001.
The efficiency of the microcredit program was initially hindered by the NGO’s non-specialized nature. Many borrowers did not acknowledge the idea of collective liability because each group member pursues her own economic activity individually and thus does not want to find herself liable for others’ ‘laziness’. In addition, the program’s fieldworker was initially put in charge of loan collection without receiving specialized training. This has affected repayment rates because her close interaction with residents sometimes made her lax in collecting loan repayments from those faced with unexpected hardships. Such issues point to a shortcoming that is often observed in integrated development schemes, when a single institution (GRET in this case) is in charge of implementing all program components. As much as the consolidation of activities in the hands of one entity could ensure coordination and reduce administrative costs, it is often the case that the staff lacks some of the required specialized skills, thus affecting the program’s efficiency.

Most issues affecting the efficiency of the microcredit program were subsequently addressed with the development of new procedures. A separate credit officer function was created. Prospective borrowers are now required to save before accessing program funds in order to develop a gradual savings habit and provide a collective guarantee against defaults within each group. Finally, a flat charge—labeled application and administrative fees—was added to the monthly loan repayment in lieu of interest, as is common in programs operating under the Shari’a. One issue still needs to be addressed, namely borrowers’ heavy reliance on program administrators for equipment maintenance and product marketing. In effect, this last issue points to a key weakness in integrated development schemes, which is the tendency to provide participants with too much assistance. This threatens to reinforce their dependence on the intermediary organization, which certainly undermines the sustainability of the program’s impact in the long term.

Lastly, my analysis shows mixed results with respect to Twizé’s strategy of maximizing the ratio of program investments that are recycled in the settlement and retained by residents. The construction work that trainees secured in other areas of the city during the transition period in which construction activities were stalled attests of the high quality of the training program. As such, more emphasis however should have been placed on training a larger number of community members, instead of creating temporary unskilled construction jobs whose benefit cannot be expected to last beyond the end of the project.

Housing construction and tenure regularization: achievements and limitations

Most recently, the program enabled approximately 400 squatter families who had been living in Dar El Beida since 1995 to resolve their land tenure problem. In December 2000, at the demand of the Commissariat, authorities expropriated adjacent parcels that had not been developed for five years since attribution (as per the 1983 Property Act) and their titles were redistributed to squatter families. The authorities launched this pilot initiative—the first land expropriation in Nouakchott—with the aim of testing the process and implementation procedures to be applied in the forthcoming World Bank-financed citywide regularization program. The interesting aspect of the process was the decision to closely associate NGOs in the design and implementation of regularization initiatives.

Overall, GRET’s involvement in the Dar El Beida pilot experience has produced mixed results. The NGO’s most significant achievement was their successfully lobbying of authorities to grant land titles to the female household members in Dar El Beida. The process nevertheless revealed many implementation shortcomings. The NGO’s desire to streamline the process led them to distribute attribution letters to the new parcels without requiring squatters to submit a proof of identity, which created a confusing situation from which many community members tried to profit. Other problems included the omission of several eligible residents (e.g. those absent for personal or work-related reasons such as housekeepers and guards) and the inclusion of ineligible persons who never lived on site (e.g. those who were notified of the census by family members or those who paid the squatter leader ‘a right of entry’). By far the most recurrent issue was the tendency of families to break up into the...
smallest nuclear entities in the hope of obtaining more than one parcel. However, unlike conventional land distribution programs in Nouakchott, the NGO’s involvement has significantly reduced the magnitude of the problems because of its established presence in Dar El Beida.

The NGO’s involvement in the process was particularly useful in preventing attributions to the many families who already owned land in Dar El Beida yet who had erected shacks in the adjacent squatter settlements in the hope of obtaining more property. In fact, about 15% of the names listed in the preliminary squatter population census were landowners from Dar El Beida or their dependents, including recipients of Twizé’s shelter construction assistance. In addition, a random survey of 80 landowners living in Dar El Beida shows that more than 30% had erected one or more shacks in the squatter pockets within the settlement. Several factors explain the decision to squat by landowners. Some were aiming to get a second parcel so that they could use the sale proceeds to build their first lot. Many spouses were hoping to obtain land parcels to secure their children’s future or their own in case of separation (the land title being in this case in the name of the husband). Others had received land parcels in 1995 that were relatively distant from the urbanized core and thus opted to squat in proximity of the population mass.

My survey findings suggest that for the many households that have limited alternative economic opportunities, squatting represents a surrogate form of investment or employment. The decision to squat seemed in most cases to be the rational outcome of a trade-off between squatting costs and benefits. The opportunity cost of squatting is minimal for many residents including, for instance, unemployed housewives, those whose home-based economic activities are not affected by the displacement (e.g. sewing and textile dieing activities), and those who derive benefits from locating in the squatter settlement (e.g. proximity to family members). The others who face high displacement costs just erect a shack in any of the squatter zones and continue to inhabit their previous accommodation. In contrast, the likelihood that squatting will be compensated with the attribution of a land parcel is high since authorities have tended to adopt a mild stance with squatters, especially in peripheral settlements where land values are relatively low.

As such, it could be argued that in this particular context, squatting is a rewarding form of economic activity. This explains the emergence of a small group of “professional squatters,” who either own shacks in different settlements that they occupy on a rotating basis or build over time several makeshift structures in the same settlement where they distribute their extended family members to maximize the benefits from future legalization. For these individuals, squatting is not necessarily just the regrettable outcome of the unequal distribution of resources but rather an ingenious solution to the pervasive lack of economic opportunities, as it consists one of the few avenues available for wealth accumulation.

Finally, the land expropriation in Dar El Beida was not without problems. It was largely expected that the expropriated parcels would belong mainly to speculators and higher-income households who were waiting for the delivery of infrastructure services to, respectively, sell their valorized parcels or move in. It turned out however that a large number of expropriated parcels belonged to lower income households who could neither afford to develop their parcels nor move to Dar El Beida for several reasons. The most important factor was the lack of infrastructure services and the settlement’s physical isolation, which deterred most landowners and especially those whose meager household budgets could not sustain the high cost of water supply and transportation. As such, many families opted to rent shacks in other locations to live near their workplaces or their children’s schools. For others, the nature of their work required their absence (e.g. night guards and housekeepers). Measures to compensate the poor owners whose parcels were expropriated are currently underway.

**CONCLUDING REMARKS**

This paper addresses one of the workshop’s important debates about the effectiveness of land tenure security as a poverty alleviation strategy, versus a more expensive integrated program.
The Dar El Beida experience demonstrates that secure land tenure is not sufficient per se to guarantee the achievement of the desired poverty alleviation and shelter improvement results, let alone induce a significant occupancy level, in the absence of infrastructure services and adapted housing finance instruments to stimulate housing construction, or revenue-enhancing schemes to counter the economic marginalization of isolated settlements. In the face of such circumstances typical of most peripheral land subdivisions in Nouakchott, the provision of basic services and microfinance for housing improvement is hoped would trigger a densification process that is a necessary precondition in transforming marginalized settlements into viable neighborhoods. The emphasis on developing strategies to enhance residents’ revenues gains particular importance in the case of Nouakchott where squatting is perceived as an economically rewarding activity.

Unless the inefficiencies of land management and development in Nouakchott are addressed, land distribution and tenure legalization efforts are likely to cause more harm than good. In the absence of a simplified land registry and revenues with which to deliver services, sustained land distribution efforts following the 1990s pace will only further erode Nouakchott’s functional efficiency. Similarly, if the large price gap that fuels speculation persists, tenure legalization plans are only likely to induce more squatting, which is what happened in Dar El Beida.

The most interesting aspect of the integrated development approach, as implemented in Twizé, is that it seems to have successfully tackled, albeit at a high cost, the main shortcomings that are frequently attributed to land distribution, tenure legalization, and sites-and-services strategies. These issues are: the isolation and social exclusion that occur in remote project locations, the displacement of beneficiaries by speculators and middle-income families in search for affordable housing, the neglect to support local enterprises and create sustainable jobs, and the selection of credit instruments that are not adapted to the affordability and priorities of the poor. The approach has also managed to tailor differentiated assistance packages that respond to the different needs of the population. Finally, fieldwork results indicate that the Twizé integrated program can be credited for significantly improving living conditions in Dar El Beida.

Yet, the program’s cost per housing unit or job created ('hard cost' items) is high because of the extent of 'soft cost' components. Most importantly, a significant part of the technical assistance cost was written off budget. The World Bank covered part of GRET’s program administration cost and SOCOGIM provided unremunerated technical assistance. Excluding off budget items, in the first 18 months, 84% of the Commissariat funds were spent on hard costs and 16% on soft costs including capacity building and empowerment activities, and the balance of the administrative costs. Interestingly, Commissariat officials are unsatisfied with this ratio. They want more spending on shelter construction. In contrast, GRET, which has in past projects kept the hard-to-soft-cost ratio around (60:40) wants more funds earmarked for empowerment activities and capacity building of grassroots organizations in order to facilitate the transfer of decision-making and day-to-day management and phase out the intermediary organization’s role. The Commissariat-GRET conflict represents a key issue for the larger development community that often opposes donors and NGOs.

Overall, Twizé seems to have provided a comprehensive poverty reduction framework at the expense of efficient shelter delivery. The most critical blockages seem to arise from an attempt to reconcile poverty alleviation and shelter improvement goals. The first is the subsidy increase, which made the process more affordable at the expense of the cost effectiveness required to scale up. The second is the decision to localize program investments by training residents in the building trades. Construction could arguably proceed more efficiently through subcontracting or by hiring skilled labor. The efficiency of shelter delivery is critical because the Twizé integrated development methodology and the Commissariat-NGO collaborations were endorsed as key aspects of future housing policies.

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23 See for instance Keare and Parris (1982), and Varley (1987)
If, as implemented to date in *Twizé*, the integrated development approach is not a cost-efficient way to deliver shelter, it nevertheless seems to be an effective way to build livable neighborhoods through public-NGO collaboration. The traditional process of *infrastructure delivery in the pre-occupancy stage* would not only be cost prohibitive and necessitate large subsidies, but also it would inevitably trigger a process of down raiding by middle-income families in search of affordable housing in Nouakchott. In contrast, *incremental infrastructure delivery in the post-occupancy stage*, while simultaneously ‘building’ a community and fostering residents’ social inclusion is more likely to reconcile the two seemingly conflicting objectives of minimizing property turnover (as community members gradually develop a stake in their neighborhood) and enhancing land values (as residents progressively improve their shelter). The indicator that suggests that *Twizé* has somewhat succeeded in its community-building objective is the recent community-initiated garbage collection effort in Dar El Beida.
BIBLIOGRAPHY


