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**Malagasy Local Land Offices:
What are the Determinants of their Integration in the Local Governance?**

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Abstract

In 2005, Madagascar embarked on a major land reform whose foundation is inter alia based on the establishment of new decentralized land administration operated by the Communes: the Local Land Office (LLO or Guichets Fonciers). Upon its establishment, the LLO is facing three main challenges: its effective management and valuation by local authorities, its ownership by the population, and over all its financial sustainability. Six years after the first LLO was inaugurated, the overall statement depicts mixed statuses related to their performances, ownership by local stakeholders and perpetuation. This paper aims at highlighting the determinants that could influence the upholding of these Local Land Offices as well as the quality of their operation, and targets to unravel key conditions towards their sustainability. On the basis of a set of in-depth studies and field experiences conducted by the Malagasy Land Observatory on LLO and local governance, the paper uses a general assessment covering more than 300 Communes in 2012. The paper delineates the stakes and challenges related to the decentralization of land management and the institution of LLO. It compares the local context, the operating conditions and the social interactions of 3 groups of LLO according to their upholding pathways.

Keywords: autonomy, Communes, governance, Local Land Offices, Madagascar

1. The Local land office: background and rationale

1.1. Reshuffling the legal foundations of land rights

Legal pluralism and the dual concepts of customary and modern land rights, particularly the « *tanim – panjakana* »¹, were always present in Madagascar's history since the royalty period. Over the centuries, their gain on legitimacy had evolved between the two sides, the local and the central. The land reform in 2005, acknowledging local practices in terms of land rights management, has moved the cursor towards the legitimation of the *lex loci*.

The reform has brought key innovations in terms of legal and institutional shifts. The first change addressed the abandonment of the principle of state property (domanialty) presumption on customarily occupied land. The Law 2005 – 019 brought a new definition and structured the legal statutes of land tenures. Henceforth, any occupation on land not titled and legitimized by the community is acknowledged belonging to private property. The Law 2006 – 031 transfers the legal competence of the management of the now – called “Non – Titled Private Property” from the state land administration to the Communes, provided that a Local Land Office (LLO or “*Guichets Fonciers*”) is set – up. A new document warranting full property rights, the Land Certificate (“*Certificats Foncier*” or “*Kara – tany*” in Malagasy), is issued at the end of a process based on the local recognition of the requestor's rights by the communities and the local authorities.

Beyond the empowerment of the mayor to issue legal document, decentralization of land management spans all aspects regarding the customary land rights formalization and transfers some of the central prerogatives to local institutions. Thus, the Municipal Council is enabled to emit a legal decision (the “sentence arbitrale” or arbitration award) pertaining to conflicts and claims in the process of land certification. A democratic Local Recognition Committee constituted by the *raiamandreny* (traditional leaders, elders), the Chief of *Fokontany* (village), a representative of the municipal administration, and the neighbouring community, is in charge of attesting the validity of the requestor claimed rights and performs mediation in case of claimants' opposition.

1.2. Conciliating customary rights formalization and technology

The process of land management decentralization has brought on board the use of new technology. In interrelation with the empowerment of local institutions and practice, the land certification procedure is all built around the use of the PLOF or Local Land Occupancy Map (Plan Local d'Occupation Foncière). The PLOF is a GIS-based tool constituted of a satellite or aerial background imagery on which is overlaid the delimitation of existing land titles, which were beforehand digitized and their geographic coordinates assigned. This proceeding will allow first to demarcate the areas of competence of the LLO, provided land certificate cannot overlap on previously established land titles.

¹ Literally: the land of the *Fanjakana*, the State. Prior to the colonization, this term referred to the absolute rights of property of the King or the Queen on all land within the kingdom territory. From 1896, the meaning has been translated to the domaniality and the absolute rights of colonial administration. In the aftermath of the declaration of independence (1960), the principle of domaniality presumption has been remaining until 2005.

On the second hand, using visual reference points or lines such as roads, trails, streams, makes the identification and the demarcation of the requested plot limits easier on the map.

The introduction of this costly technology has influenced the capacity of Communes to access to LLO. Indeed, acquisition of satellite imagery may cost from 35 to 50 USD per square kilometer.

Considering that the average size of a Malagasy rural Commune approximates 150 square kilometer, the sole acquisition of the PLOF (satellite imagery acquisition, land titles digitization and overlaying) amounts 7,000 USD.

Moreover, its use requires a computer and the existence of an electricity source, which is only the case of 10 % of Malagasy Communes.

1.3. The National Land Program

Beyond the renovation of legal texts, the decentralization of the land management through the establishment of local land offices has become a specific countrywide program in the scope of the National Land Program (PNF, Programme National Foncier). From 2006 to 2011, setting – up LLO has benefitted up to 25 millions USD with the contribution of thirteen major donors (Andrianirina – Ratsialonana et al., 2011). By the end of 2012, more than 460 LLOs were created throughout the Malagasy territory (representing one – forth of the national territory), of which 97 % were supported by external donors. The establishment of the remaining 3 % has been either self – funded by the Commune, supported by the administrative Region or by the state land administration (Andrianirina – Ratsialonana, 2009 b).

International aid combined with often systematic certification operations, motivated by the objective of massive land security, fostered the issuance of more than 90,000 land certificates – out of 170,000 requests – by the end of 2012 (**figures 2 and 3**).

Categories of financial support that LLO may benefit from external funding include:

- funding for initial investments : building of the LLO office (often set – up apart from the Commune main office), desktop computers, PLOF, office furnitures, means of transportation (motorcycle, bicycle),
- initial training of municipal staff (LLO, mayor, local recognition committee) and periodic tutoring on activities management,
- the operation cost for a certain period (usually two years): agents wages, motorcycle fuel, office supplies, other charges (electricity consumption), etc.

The overall investment cost to set – up a LLO may amount from 8,000 USD up to 30,000 USD while annual operation cost comes to 2,000 USD. These figures may seem disproportionate compared to the annual operating budget of a medium – sized Commune which totalizes approximately 3,000 USD.

1.4. The land certification process

Depending upon the existence of electricity sources, there are two types of LLOs. The first is the computerized LLO which is supplied with IT equipment (computer, printer, and scanner). The LLO is independently operated by the Commune. The second type is called the “paper” LLO, for the Communes which are not electrically powered. Five to ten neighboring paper LLOs, constituting an OPCI (inter - municipal cooperation public body) are structured around a CRIF (land information and resources center). The CRIF is a computerized Commune which is performing the entire land certificates edition, from demarcated plot digitization to land certificate printing. Paper LLOs operation is not then autonomous (Andrianirina – Ratsialonana, 2009 a).

Two key local stakeholders are playing parts in the land certification process: the Commune administrative staff and the Local Recognition Committee (see section 1.1). The LLO agent manages all the technical certification process, from request registration to land certificate issuance. GIS – trained, he is in charge of storing the land certificates digital database. The mayor is the official authority signing the land certificate.

2. The international aid aftermath

2.1. The 2009 political crisis: the unexpected early handover?

When supporting the creation of a LLO, the donor or its implementing entity often sets a memorandum of understanding, describing the terms of collaboration with the Commune. The duration of the assistance is often set to two years, after which the Commune is supposed to take over all the operating cost. Sometimes, an extension period is granted when statement is made that the Commune is not yet ready to independently manage the LLO activities.

In March 2009, a political coup ousting the democratically elected president Marc Ravalomanana led to a transition government which was not acknowledged by the international community. When land reform key donors withdrew their resources, more than 300 LLOs created between 2008 and 2009 were suddenly left without assistance (see table in **figure 1** below).

<i>Year</i>	<i>Number of new LLO created</i>	<i>LLO cumulative number</i>
2006	13	13
2007	24	37
2008	198	235
2009	109	344
2010	39	383
2011	30	413
2012	49	465

Figure.1 Evolution of the number of LLOs (source: land observatory). Peaks of LLOs created are displayed in 2008 and 2009.

2.2. The paradox of crisis and LLO maintenance

The donors' withdrawal mainly impacted the Communes autonomy – gaining slow process. Without an effective handover strategy, the sudden cut – off had adverse consequences for the communes that were used to external support:

- **Incompleteness of training sessions** leading to uncertain skills for local stakeholders (mayor, LLO agents, fokontany chiefs, CRL). Mastering new skills related to the decentralized land management tools, documents and procedures required hours of apprenticeship that had not been completed. This deficiency may lead to some erratic procedures, legal irrelevancies or abuses that could undermine property rights recognition.
- **Issues on financial sustainability** – The suddenness of the suspension of financial support meant that the LLOs takeover issues had not yet truly been addressed. No strategies had yet been established to take charge and extend the LLO operation, and on a mid – term perspective to link property formalization and land taxation.
- **Uncertainty regarding the continuum of the formalized rights** and the conservation of the already – registered land certificates. The questions of the competence related to the management and the afterward operations of the property rights documents once the LLO closes – out are raised. Will be they handed to the state land services legal competence or transmitted under the neighbor LLO continuation?
- **Risks of social troubles.** At the social level, the shortened operation period and then the LLO closing – out had restrained hundreds of land certificate requests. This situation in some areas had worsened land – related tensions and fostered a social destabilization related to the apprehension of land grabbing maneuvers from the local elite.

However, contrary to lots of development projects in countries used to rationale and temporality of international aid (Birschenk et al, 2000), the decentralization of land management in Madagascar did not end in a general failure in this context of limited financial support. Paradoxically, the interruption of external support seemed to induce common reaction to the local rulers: a determination to keep the LLO running and maintain its agents on staff, without however the ability to financially fully ensure its operation. As best as they can, the Communes had developed “emergency” strategies to cover the operation costs, primarily with the revenue earned from land certification. While some LLOs doubled or tripled the price of land certificates overnight, others preferred to lay off an agent.

The national assessment conducted by the National Land Program in 2012 reported that:

- 11 % of LLOs succeeded in self – funding: the Communes proper resources are consequent enough to balance expenditures costs.
- 22 % are in the process of being autonomous: their annual budget would allow taking charge of operation cost provided internal revenues (such as land tax) are efficiently managed.

Despite their scarce financial resources, agents are still maintained on duty. Thus, these offices continue to satisfy to users' information requests and to issue land certificates; even if formalization requests, in most of the communes, are quite limited.

- 56 % are «on struggle »: resources availability is seasonal and the LLOs hardly cover expenditure costs. Land certificates issuance is sporadic and is most of the time limited in the periphery of the Commune center.
- 11 % did definitely close – out. Most of the time, the LLO agents resigned.

Do these facts illustrate a somehow hopeful integration of the local land offices in the local land governance? The paper aims to analyze what factors explain the upholding of local land offices. It successively explores throughout (i) the role of the local environment; (ii) the land office's assets and (iii) its strategies and interactions with the population and the local authorities.

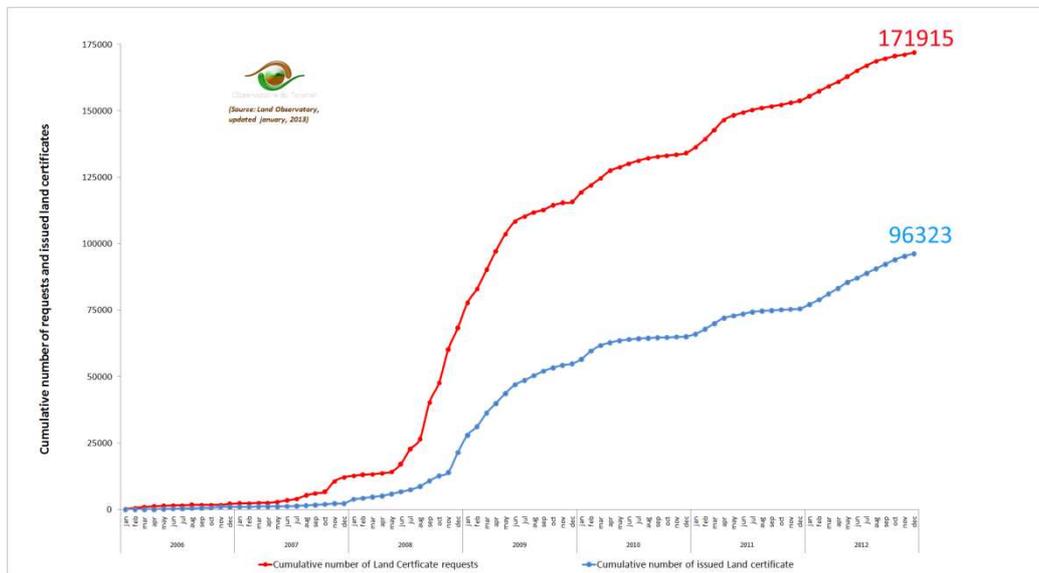


Figure 2: evolution of the numbers of request and land certificates issued from 2006 to 2012 (source: Land Observatory, National Land Program)

Spatial distribution of Communes with Local land Office

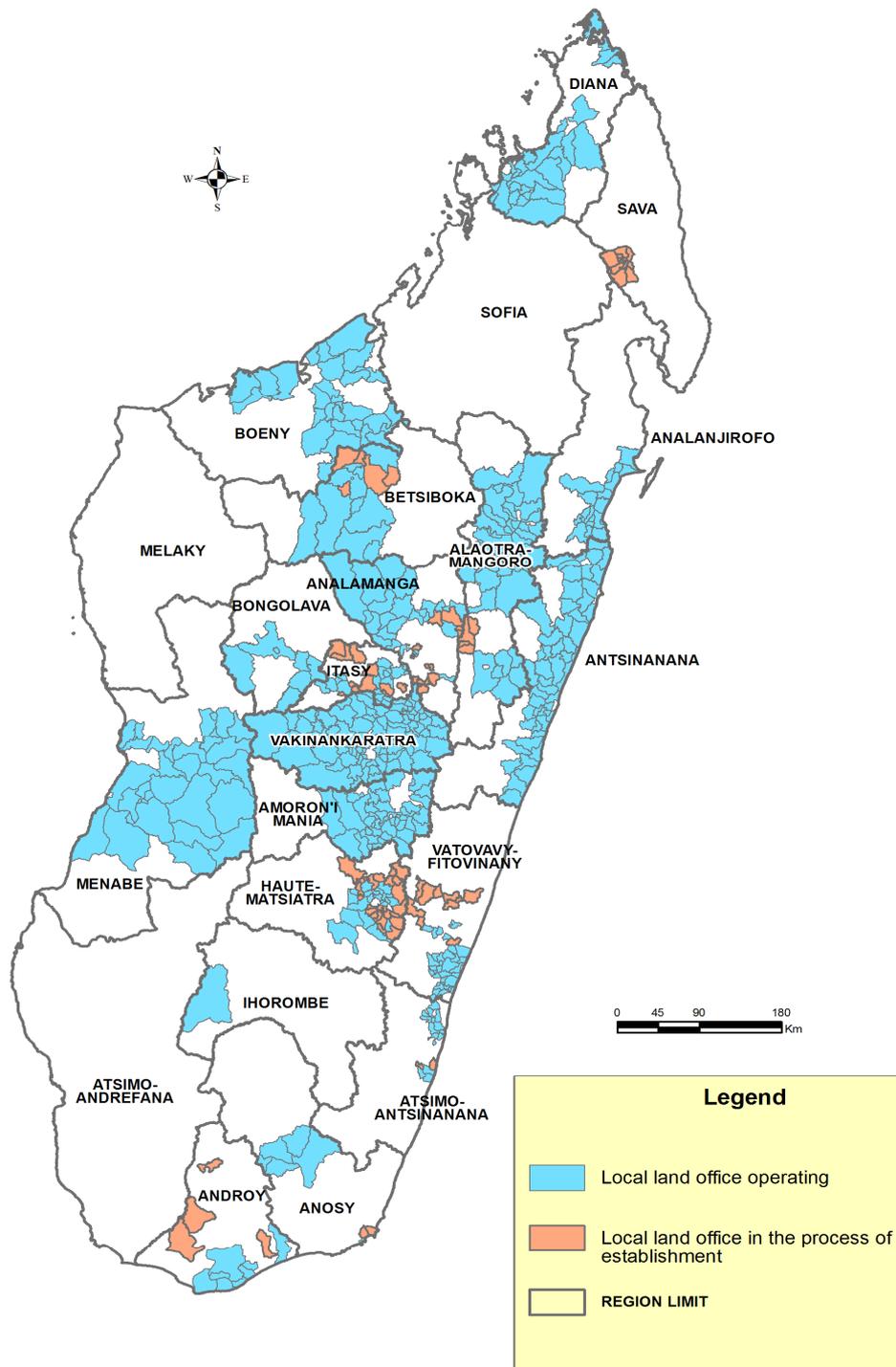


Figure 3: National distribution of Communes with Local land offices (source: Malagasy Land Observatory – March 2013)

3. Assessing LLO integration and effectiveness

3.1. Defining ranking criteria

Assessing the integration of the LLO within the local governance has not benefitted from a standardized approach or a commonly accepted methodology. Since the local experiences vary from one country to another, the exercise and the appreciation may then appear subjective. In the scope of this paper, the assessment of the effectiveness and the integration within the Communes institutional and social contexts is taking into account two categorization criteria :

- The first is looking at the level of ownership at social (formalized land security need), institutional (interaction and balance of powers regarding the local stakeholders : municipal authorities, customary leaders, communities), political, and administrative (availability of budget) stages,
- The second addresses the management skill regarding the LLO and its operation, addressing the accuracy in procedure enforcement and land certification processing, as well as its management optimization.

3.2. Background materials and analysis sources

The data used to perform the hereby analysis were streamed from four sources :

- *The Malagasy Land Observatory database*. In the scope of its mandate to generate relevant information aiming at shaping up land policy and monitoring the Malagasy land reform implementation, the Land Observatory is managing a comprehensive database on land certificates request and issuance.
- *The Communes – LLO fact sheets*. These sheets, filled in the scope of the general assessment conducted by the PNF in 2012, contain all the most relevant key data on the Commune and the LLO (Commune surface, date of LLO establishment, duration of technical tutoring, land title coverage, number of population, distance from the main road, annual budget, etc.).
- *Qualitative surveys* conducted by the Land Observatory in four Communes in 2012, aiming at enlightening the role of the LLO in local governance (Boisard and Fanjaniaina, forthcoming). These surveys allowed inter alia to feature the adjustments of the LLOs to local contexts and circumstances related to their integration within the Commune, their operation, their human and financial resources or their conflict management.
- *World Bank survey 2004 - 2005*. External factors are measured through variables on macroeconomic and demographic contexts of the Commune. Part of the data comes from the Commune database developed from the survey supported by the World Bank in 2004 - 2005 (population, area).

The analysis consisted in assigning for each Commune an average score for each used variable (each category of hypothesis factor contains many variables). It is then refined using multinomial logistic regressions, which are to determine the factors affecting the probability of belonging to each category compared to others (Mc Fadden, 1993).

3.3. Three key determinants at stakes

The experience of decentralizing land management is quite recent globally and in the African continent. Few assessment findings have been made available, especially in Africa (Toulmin, 2009; Lavigne Delville, 1998). Authors such as Shah have tried to classify the determinants of success of decentralization on other issues such as property tax, distinguishing interactions at political, bureaucratic, institutional and external stakeholders levels (Shah, 2006). Given this methodology availability constraint, the hypotheses tested to identify the determinants of maintenance of Local land offices arise from empirical statements and field experiences, enriched with previous assessments of decentralized land management (Teyssier et al., 2009; Comby et al., 2011).

All the causal factors that have been identified at all the levels have been put together within three key determinants:

- the LLO local context including the environment of the Commune: demographic, geographic, political and institutional,
- the LLO operating conditions : staff size, availability of equipments (printer, computers, PLOF, etc.), financial supports,
- the strategies and interactions with the local population, including the impacts and outreach of communication campaign, the ownership of the LLO, the social perception of land security, the balance of power between customary and administrative authorities.

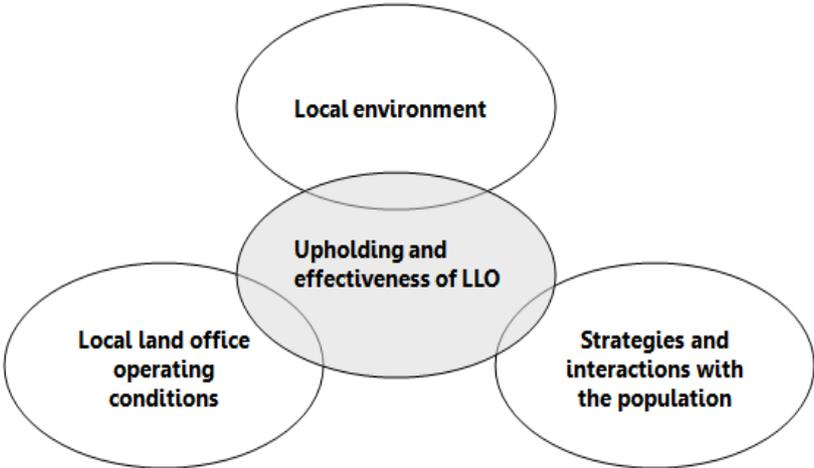


Figure 4: interaction of the three determinants of LLO sustainability

3.4. The LLO local contexts

The demographic context

The hypothesis of a "massive demand for land security" is the origin of the Malagasy land reform (Ministry of Agriculture, 2005). Indeed, in the classical registration process inspired Torrens system, the coverage rate titles is very low unless the pace of issuing new securities may not be accelerated efficiently, particularly in rural areas (Teyssier et al., 2009).

Titling is rare: these costs are high and procedures are long. On the other hand, people – mainly the rural – frequently use the “petits papiers”² to secure their rights: In this context, the installation of the Land Offices has aimed to respond more quickly to this demand at a lower cost through local institutions as for some African countries (Deininger et al., 2007).

Assuming that the pressure on land is more important and it is likely that the need for formalization is also stronger, the population in a given commune can be a variable for estimating the pressure on land and the potential demand for land certificate at the Commune.

The geographic situation : remoteness

The accessibility of the Commune can play in different ways on the need for a local institution for regulating land management.

Improved physical accessibility of the Commune promotes trade and economic development. Revenue opportunities are often broader (eg. local taxes on weekly markets) for both the Commune and its citizens.

Political and institutional contexts

All installed LLOs are subject to the same political context at the macro level. However, differences on local institutional contexts may cause variations in their respective pathways.

Indeed, the importance and role of customary authorities may vary from one region to another. On the other hand, the existence of other recognized types of formalization (both written and unwritten) can complexify the existing institutional equilibrium (Deininger et al., 2008; Colin et al., 2009), or even slow down or stop the adoption of the land certificate and involve mistrust or rejection of the newly implanted institution.

3.5. The LLO operating conditions

At the beginning, the Land Offices were created on a common thread, with precise technical and operational procedures and guidelines. Local context, however, have changed their operating conditions, with tailored adaptations, mainly in the management of human and material resources.

² The “petits papiers” are handwritten documents accompanying transactions (sale, inheritance and donation), tax receipts (Burnod et al., 2012). They offer a first formalization of rights or more exactly, an “informal formalization of rights” (Mathieu, 2001).

Actually, in the decentralization context, these resources and skills can be highly diversified from a Commune to another.

The staff constituency

The staff size: at the beginning of the reform, a large majority of LLOs were equipped with 2 agents or more. Later, many of the Communes reduced the staff, either by withdrawal of an agent due to the instability of earnings, either due to financial constraints of the Commune. The evolution of the number of agents can be seen as an adaptation phenomenon (chosen or induced).

The duties of the LLO agents: the original LLO is an office whose main function was land certification. Later, however, along with the gradual integration in the municipal staff, some Communes have expanded the function of LLO agents beyond certification. They can work on part-time in the civil service, the Secretariat of the Town Hall, the fiscal services, or in other various technical services, animation, etc. This broadening of functions may be an indicator of integration in the Commune insofar the main activities of the LLO are properly insured.

Equipments

Computerization can be an essential factor on upholding the LLO: a non – computerized (paper) LLO may have a lower cost of operation and can be easily maintained by a rather ordinary Commune. However, a computerized one is more autonomous, their activity requires less travel and the Commune may be more likely to maintain its activity for the various municipal services their equipments could be used for.

Financial support

The take-off of the land reform and the implementation of Land Offices were accompanied by a considerable amount of technical and financial support. The first successful experiences are probably the direct effect of this massive injection of resources. The aftermath of the withdrawal of major donors mainly gave place to a divergence of LLO pathways, differentiating “integrated” LLOs and “rejected grafts” (Andrianirina - Ratsialonana, 2009 b).

Later, some Communes have implemented new funding systems with other donors or through their own funds. Indeed, the weakness of the demand – and the initial prices of certificates - do not often allow this sole operation to guarantee the functioning of the office (Comby et al., 2011). The nature of financial support can be a major determinant in maintaining Land Offices as they encourage their creation and / or upholding.

3.6. Strategies and interactions with local population

Information was one of the major watchwords of the activity of Land Offices at their beginning. The evaluation of the first Land Offices had already highlighted the issues of regular information campaigns, accurate and "closer to the people" (Brochard et al., 2008). Indeed, relations with the local population are a crucial element of ownership of the LLO within communities.

The ownership has also been evaluated in the context of the investigation of the PNF. It is shifted from a system of indicators including the functions of the mayor and municipal staff. The aggregated indicator of this appropriation is also included in the analysis, differentiating "good" and "correct" appropriations from the other levels of evaluated appropriation.

Promotional operations called "KTM" (*Kara – tany Malaky*, rapid land certificate) - consisting of information campaigns and intensive communication, followed by waves of certifications -, have been widely implemented at the beginning of the decentralization of land management. The lack of financial support has considerably weakened these information operations after the start of the crisis, resulting in a possible reduction of the perception of usefulness of LLOs by users and local authorities.

On the other hand, high demand rates in 2008 – 2009 generated saturations in the LLO activity after the withdrawal of external funding. Later, some LLOs have adapted their strategies to their capabilities and resources - human, material and financial - in order to ensure a proper operation of the different certification steps. For instance, some of them define periods of application, resulting in economies of scale. The delivery rate of certificates, measured from the average annual number of issued certificates is integrated as an explanatory variable for the analysis.

Requests and land certification rates were used as characteristics variables regarding level of interactions between LLO and the local population.

4. Discussions and conclusions

4.1. LLO Category differentiating factors

The table below (Table 6) represents the differentiation between LLO categories regarding the three factors classes A, B and C.

Table 6: Differentiation between LLO categories

LLO category	A		B		C		Total (active and inactive)	Mean difference test between active and inactive LLO
	operational	on struggle	active LLO	Total (active)	Total (inactive LLO)	Total (active and inactive)		
Local context								
Population	20,150	19,711	19,950	20,884	20,269			
Remoteness to the District (hours)	2.5	4.8	3.5	4.7	3.9		*	
Other land statutes (relative importance)	34%	38%	36%	24%	32%		**	
LLO operating conditions								
Staff size (initial)	1.8	2.0	1.9	1.9	1.9			
Staff size (2012)	1.0	1.0	1.0	1.0	1.0			
Equipment (computers)	34%	12%	24%	15%	21%		**	
Equipment (orthophotos)	79%	92%	85%	74%	81%		**	
Donors								
MCA until 2009	34%	75%	53%	67%	58%		**	
MCA and/then other donors	2%	6%	4%	2%	3%			
Other donors	54%	15%	36%	24%	32%		**	
Financial autonomy	10%	4%	7%	7%	7%			
	100%	100%	100%	100%	100%			
Strategies and interactions with the local population								
Ownership (PNF scoring)	91%	51%	73%	29%	58%		***	
KTM	70%	88%	80%	81%	80%			
Payment facilities (number of payments)	1.8	1.9	1.8	2.0	1.9		**	
CF delivery rates	32	50	40	36	39			

Significance level : * 10%, ** 5%, *** 1%

Table 7: Multinomial logit regressions outputs

Variable	Coef.	Std. Error	P > z	Coef.	Std. Error	P > z	Coef.	Std. Error	P > z
	reference cluster: A			reference cluster: B			reference cluster: C		
A : OPERATIONAL	Remoteness			- 0.029	0.039		- 0.025	0.037	
	Obsolete status (relative presence)			- 0.890	0.451	**	0.401	0.421	
	Staff size (initial)			0.301	0.512		0.384	0.546	
	Staff size (2012)			- 1.397	1.431		0.777	1.516	
	Equipment (computers)			1.132	0.480	**	0.473	0.515	
	Equipment (orthophoto)			- 1.127	0.768		- 1.073	0.754	
	Donor: MCA until 2009			1.978	1.171		- 1.016	1.214	
	Donor: other donors			3.812	1.214	***	- 0.026	1.168	
	Donor: financial autonomy			2.450	1.438		- 0.787	1.441	
	Ownership (PNF scoring)			1.514	0.574	***	2.645	0.526	***
	Payment facilities			- 0.533	0.382		- 0.724	0.374	
CF delivery rate			- 0.008	0.003	**	- 0.001	0.004		
B : ON STRUGGLE	Remoteness	0.029	0.039				0.005	0.024	
	Obsolete status (relative presence)	0.890	0.451	**			1.291	0.447	***
	Staff size (initial)	- 0.301	0.512				0.083	0.612	
	Staff size (2012)	1.397	1.431				2.174	1.270	
	Equipment (computers)	- 1.132	0.480	**			- 0.659	0.551	
	Equipment (orthophoto)	1.127	0.768				0.054	0.919	
	Donor: MCA until 2009	- 1.978	1.171				- 2.993	0.900	***
	Donor: other donors	- 3.812	1.214	***			- 3.838	1.001	***
	Donor: financial autonomy	- 2.450	1.438				- 3.237	1.235	***
	Ownership (PNF scoring)	- 1.514	0.574	***			1.131	0.451	**
	Payment facilities	0.533	0.382				- 0.192	0.380	
CF delivery rate	0.008	0.003	**			0.007	0.004		
C : INACTIVE	Remoteness	0.025	0.037		- 0.005	0.024			
	Obsolete status (relative presence)	- 0.401	0.421		- 1.291	0.447	***		
	Staff size (initial)	- 0.384	0.546		- 0.083	0.612			
	Staff size (2012)	- 0.777	1.516		- 2.174	1.270			
	Equipment (computers)	- 0.473	0.515		0.659	0.551			
	Equipment (orthophoto)	1.073	0.754		- 0.054	0.919			
	Donor: MCA until 2009	1.016	1.214		2.993	0.900	***		
	Donor: other donors	0.026	1.168		3.838	1.001	***		
	Donor: financial autonomy	0.787	1.441		3.237	1.235	***		
	Ownership (PNF scoring)	- 2.645	0.526	***	- 1.131	0.451	**		
	Payment facilities	0.724	0.374		0.192	0.380			
CF delivery rate	0.001	0.004		- 0.007	0.004				
<i>Log pseudolikelihood</i>		-	186.470						
<i>Prob > chi2</i>			0.0000						
<i>Pseudo R2</i>			0.385						

Significance level : ** 5%, *** 1%

4.2. Is the local context critical for the upholding of the LLO ?

Table 6 clearly shows that remoteness plays a major role on LLO's upholding pathways (3.5 hours drive on average to the center of the District for active LLOs and 4.7 hours for inactive LLOs). However, the most distant LLOs are more difficult to maintain (category B). The outlined hypothesis is confirmed in the sense that these towns are also the least financially endowed, due to a less integrated economy. In addition, remoteness to the Classical Land Administration Offices ("Services Fonciers") makes difficult and expensive the potential data, information or skill interactions.

The specific activity of LLO placed in accessible Communes can also be explained by a potentially higher land pressure, mainly for plots nearby roads.

The isolation is thus a criterion disabling the Communes willing to establish a LLO.

The relative preponderance of land burdened with obsolete or non-certifiable land status characterizes the "on struggle" LLOs (see Table 7). A local context characterized by a multiplicity of land formalization systems seems to boost the need for a local land administration, although it hardly fulfills its functions.

Thus, the results corroborate the hypothesis according to which potential land pressure - estimated using the degree of isolation and multiple forms of right formalization, effectively contributes to the maintenance of the land office as a local administration office. We will see in the following results that the importance of financial resources and their management also affect the upholding pathways of the LLOs and their ability to ensure their operation.

4.3. Is self-reliance a pathway to sustainability?

Computer equipment is a dual purpose for LLOs : on one hand they free LLOs from editing and publishing services for land certificates. On the other hand, they allow them to use advanced mapping tools. Twelve percent of the "struggling" LLOs are computerized, versus 34% of fully operational ones and 15% of inactive ones (Table 6). Computerization and equipment in general, seem to benefit the achievement of autonomy for local land administration.

As a part of the Commune, the operating budget of the LLO is strongly linked to the Commune's. Differentiation between "autonomous" and "on struggle" LLOs is partly explained by the nature of the financial support they received at the beginning of their activity as well as during the crisis period. Table 7 shows that a few LLO among those initially supported by the MCA found later financing. LLOs created with multiple donors are currently the most autonomous. The withdrawal of financial partners has been a major turning point in the pathway of the LLO. Multiple partnerships seem to be the best guarantee of sustainability.

Qualitative field works also highlighted that a several LLO conducted actions to strengthen the financial capital through the revision of certification costs in order to ensure related expenses. Others prospected for alternative funding. Indeed, the financial balance of a LLO is rarely offset by the exclusive revenue from certification procedures (Boisard and Fanjaniaina, 2012).

This last remark refers to the intrinsic worth on the establishment of local land offices: compared to other activities of the Commune, it is quite possible that they are not directly cost-effective and may cause additional charges. By cons, if we consider that this is a useful service to the public, its maintenance is no longer a simple economic calculation; other relevant factors matter as outlined in the following section.

4.4. LLO upholding decision: further than an internal economic logic

The above results show that the local context affects the sustainability of a LLO, while some economic factors are constraints that affect their operation ("autonomous/ fully operational" Vs "on struggle" in particular).

Though, the LLO of group "C" are sometimes characterized by a more favorable profile than those of LLO that still active, but on struggle ("B"). Profiles and activity level does not follow a strictly linear trend.

Ownership of LLO by the Commune is a major determinant for its upholding (see Tables 6 and 7). It is an indicator based on (i) the knowledge of the Mayor on his duties, (ii) his level of involvement and that of his staff in the activities of LLO and (iii) variables on their perceptions on the usefulness of the LLO. Thus, beyond the measurable determinants, other subjective factors act in parallel on the ability of LLO to sustain. Qualitative investigations in 3 Communes conducted with The Malagasy land Observatory in 2012 were also used to refine the understanding of the roles and the integration of LLOs into the local dynamics.

It is thus observed that, on one hand, other activities of the LLO contribute to the perception of tenure security. These roles are often hidden in conventional assessments. Indeed, LLO are frequently called upon by citizens on tenure security concerns: concrete understanding of rights on land, roles of other institutions dealing with land, etc.. LLO agents are also asked for referral in case of land conflicts. Finally, although still rare, some LLOs are preparing tools to facilitate the fiscal census for the Commune (Boisard and Fanjaniaina, 2012). These and many functions can be set up spontaneously, following a design of a versatile LLO supported by Comby et al. (Comby et al., 2011). In this context, the LLO justify by its functions, its usefulness and its integration to the Commune.

4.5. Conclusion

In 2005, Madagascar embarked on a major unprecedented land reform whose foundation is based on the abandonment of the principle of domaniality, the recognition and the opportunity to formalize customary land rights arising from long – term occupation, and the establishment of new decentralized land administration operated by the Communes: the Local Land Offices (LLO or *Guichets Fonciers*). Upon its establishment, the LLO is facing three main challenges: its effective management and valuation by local authorities, its ownership by the local population, and over all its financial sustainability. Due to the needs of the institutional and technical empowerment, as well as the high cost required when setting – up a LLO, foreign and international donors supported the technical and financial assistance including the start – up investment and the operation cost for he majority of them (up to 97 %). The attendance period was generally set for two years, after which a handover strategy had to be implemented. This situation of dependence had fostered a general disturbance when the political coup in March 2009 triggered the withdrawal of international aids, leaving the Communes with half – completed skills transfer and scarce internal resources to pull through.

This paper synthesizes the cumulative findings from the Land observatory works, enriched with an in – depth focus conducted in 2012 in four Communes regarding the interaction between the LLO and local governance. Six years after the first LLO was inaugurated, the overall statement depicts mixed statuses related to their performance, ownership by local stakeholders, and operation continuation. A general assessment done by the LNP covering more than 300 Communes in 2012 stated that 11 % of LLOs demonstrated full technical and financial capacity, 22 % are in progress towards a steady operation, 56 % are struggling to sustain whereas 11 % did close – out.

Authors postulate that three joint factors would ease the integration of the LLO in the local governance. The ownership and maintenance are influenced by the Commune broader environment including social (demography, land pressure) and economic parameters (assets such as computers, multiple partnerships). Sustainability is also a matter of competence and dynamism of the Commune's staff.

Through the emphasis on the stakes and challenges related to the decentralization of land management to the Communes and the institution of LLO, the paper aims at contributing to provide recommendations on policymakers, donors and field practitioners.

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