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*Implementation challenges of land administration in rural
areas of Haiti: from the elaboration of a pre-cadaster
methodology to the land tenure reform*

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Introduction

The earthquake of January 12, 2010 highlighted the weaknesses of the land tenure system in Haiti. It showed the failures of the current system of identification of property, people and rights: outdated land tenure administration tools and legal framework, lack of cadaster and disorganized management of archives, weak managerial and technical capacities in land tenure institutions, and unclear or even contradictory legal and institutional framework. These weaknesses have turned into structural problems which affect both public and private land management. High transactions costs prevent owners from regularizing their titles, land tenure insecurity hinders long-term economic investments, and the absence of cadaster and land tenure administration tools complicate territorial planning, public investments and environmental management, and prevent tax collection.

Land constitutes a basic asset for Haiti's population in rural and urban areas, valuable for agricultural production and housing. Today, land tenure in Haiti is characterized by fragmentation and a prevailing informality in arrangements.⁴ Land is generally owned and transferred with only partial compliance with the required set of legal formalities such as surveying parcels, having titles notarized and registering with relevant authorities.

Besides, Haiti is no longer a predominantly rural country. Its urban population was estimated at 52% in 2002 by the United Nations Population Funds. Urbanization progresses and World Bank anticipates that in 2017, around 62% of the population will be concentrated in urban areas. In spite of this major change, the number of farmers seems to remain the same and the agriculture sector still contributed to approximately to 22.5% of the Gross Domestic Product in 2013. Agriculture represents the principal form of livelihood for over one million families by contributing to 47% of total employment (71% in rural areas), but rural poverty headcount remains the highest in the country with 75.2% (58.7% national level).

The fundamental elements for land tenure security are rudimentary in Haiti. In 2011, less than 5% of the country was covered by a non-updated cadaster, parcel surveying was primarily done on an ad hoc basis using outdated techniques that did not provide for geo-referenced measurement of parcels. The national positioning network essential for geo-referencing was incomplete. Deeds were manually registered and transcribed into the fiscal land registry maintained by the Tax General Direction (*Direction Générale des Impôts, DGI*) and archived in chronological order, greatly hindering the retrieval of records for verification. Additionally, the weak capacity and lack of coordination between entities responsible for land administration services was another major difficulty.

In the face of such challenges, the Haitian Government decided in 2010 to deal with the land tenure reform as a whole with the objective of improving the security of land rights, in order to promote sustainable development and improve regional planning and agricultural productivity. The proposed reform was based on the modification of the legal framework, the modernization of land administration tools and the development of a "pre-cadaster" methodology which clarifies the identification of property, people and rights (without land prices evaluation).

This paper first explains the origins of land administration in Haiti and the general functioning of the current land administration system as long as its weaknesses. It then describes the land reform process engaged by the Haitian government and the methodology established to put in place a pre-

⁴ Olivier Delahaye. The constraints linked to land tenure. In Identification of Potential Value Chains for Haitian Rural Markets. IDB. 2005.

cadaster in the country. Finally, the paper discusses the main challenges for cost effective and fast expansion of coverage of land administration services at scale in the Haitian context.

What history teaches us

Haiti's current land administration is a reflection of a land tenure structure built over time and characterized by a three-centuries-old tradition of private property which dates back from colonial times.

The island of Haiti was discovered in 1492 by Christopher Columbus, and became the first Spanish colony in America, La Española. It was a colony without indigenous people, since the entire Taïno population had been destroyed within thirty years of the discovery due to a combination of European diseases, slavery, wars and, above all, the destruction of their open field farming systems by the introduction of domestic animals such as horses, cows, pigs and goats. The indigenous did not leave any trace in the Island land system, and neither did the Spanish during their rule of the island. In 1697, the western part of the island was ceded to France and took the name of Saint-Domingue until the independence in 1804. During the French colony, free land concessions were made to the settlers and were considered to be held in freehold, a feudal system of property. By the end of 18th century, all the French territory was divided into large plantations of 100 hectares or more with highly labor intensive productions: sugar, coffee, indigo and some "*places à vivre*" (places to live) to feed slaves (as well as the white population during European wars). All this production was possible because of slavery and the existence of a pool of artisans transforming agricultural production into industrial products.

During the French revolution (1789-1804), troubles arose in the colony: revolts against the royalist colonial administration, slave revolts, and Spanish and English occupation. Most of the plantations' owners were forced to leave the island and their land was then taken over by the French revolutionary administration. When independence occurred in 1804, the Haitian State inherited these plots of land. At the same time, freedman and slaved freed in 1793 remained owners of properties they had previously acquired or they bought from owners leaving the country in tragic circumstances.

It was impossible after 1804 to recreate the colonial economy: productive structures had been destroyed by fifteen years of war, Haiti was isolated by the English fleet and France was no longer investing in the country. The United States of America was then Haiti's only trading partner; they were buying what the country could still produce (some coffee and wood) and were not involved in production. For these reasons – and others, too complex to be described here -, the Haitian State decided to sell some large plantations and to divide others into little plots which were distributed through "national grant" to military and civil officers, creating a large class of small landowners. More than 100,000 hectares were distributed between 1811 et 1822. According to Robert K. Lacerte (1975), this was the "first land reform in Latin American". The rest of the land remained under the control of the State and became "the State Domain", State lands, mainly located in higher mountainous parts of the country. The "agrarian war" did not happen: with less than 250,000 inhabitants in the early 19th century, there was enough land for everybody and not enough capital to start over colonial plantations.

The studies on land in Haiti published in the last fifty years demonstrate that since the 15th century collective forms of land ownership, which are common in Africa, Asia, America or even in some

places in Europe, never existed in Haiti. African slaves who were freed (during the colonial period) or liberated (during the revolution and after independence) did not know other form of land tenure than private property with its Roman characteristics (*usus, fructus, abusus*). With State land distribution and the creation of land markets by urban owners, the beginning of the 19th century is marked by the birth of small peasant property.

Private property is deeply rooted in history, law and attitudes. Peasant property has a historical and legal basis.

Minifundia, family and State lands

At the beginning of the 19th century, freedom, independence and property were achievements of the newborn State of Haiti. Anthropologists and agronomists have shown that until mid-century, “*races*” (families) were basically established on little plots given by the State or purchased from urban landowners. However, the Custom of Paris developed by King Louis XIV in the French Caribbean colonies was still applied, and even reinforced by the Napoleonic Civil Code adopted in Haiti in 1826. The main aspect of this legislation was the egalitarian sharing of property: land fragmentation started at this point. Two modalities took place to create the actual shape of land tenure in rural areas, based on formal and informal subdivision of land either by inheritance, sales, or others. Although some peasants have been observed trying to reconstitute larger plots, parcels, whether owned by individuals or families (undivided lands), have on average become smaller and smaller. The demographic pressure has led to an explosion in the number of plots. For instance, it was recently observed that what used to be a single colonial plantation of around 170 hectares is now made up of 425 parcels of an average of 0.4 hectares.

As it is often the case in the West Indies, Haitian land is characterized by the existence of family land or undivided land (*indivision*). *Indivision* is a legal situation in which several persons exercise rights of the same nature on the same property, but their respective shares are not materially divided. Family *indivision* is the marker of land structure in Anglophone and Francophone Caribbean islands (Oriol and Dorner, 2012). Family land is often perceived as a social practice which aims at avoiding the extreme fragmentation of land and reinforcing the sense of lineage. However, it is also the result of current inefficient and expensive land tenure transaction costs which, to a large extent, prevent rural families from fully regularizing their transactions.

State land is part of the same history, and is constituted by the remaining land which has not been donated by the Haitian State at the beginning of the 19th century. Land without private property rights is therefore State land. Its management is under the responsibility of the General Tax Direction (*DGI* for its French acronym) of the Ministry of Economy and Finance. However, such land is neither surveyed, nor localized. Only State land that has been subject to formal rental requests is documented by the DGI. The registry of State land is kept in poor conditions in precarious DGI offices. In addition, recurrent problems continue to lead to informal settlements of farmers on State Land, including: (i) most lessees have ceased to pay their lease, as per the a presidential decree issued in 1995; (ii) informal sub-leases is a frequent practice; and (iii) leases tend to be transferred de facto among generations without formal renewal.

As stated previously, land is generally owned and transferred with only partial compliance with the required set of legal formalities such as surveying parcels, having titles notarized and registered with relevant authorities, as it is the case for urban areas. In rural areas, land titling is for the most part based only on land survey minutes (*procès verbal d’arpentage*) and their registration at DGI

offices, as defined by the Rural Code of 1962. Only owners and coheirs can request this type of legal papers.

An obsolete and inefficient institutional framework

The institutional structure of Haiti's land administration is largely inspired from France, where private professions with public service delegation are responsible for drafting the translating acts of property rights (notaries and surveyors) and where public institutions guarantee their legality. Very little has changed since colonial times. Aside from the land reform developed by Boyer and Pétion in the early 19th century, some conditional granting of land and the inclusion of the judicial sector in land administration, the land management system has barely changed since the independence.

Private property rights are established through a notary deed (urban areas) or survey minutes (rural areas) registered at the *Direction de la Conservation Foncière* of the DGI, which is a dependence of the Ministry of Economy and Finance. The notary deed is based upon a survey of the parcel conducted by a commissioned surveyor. The survey process has to be authorized beforehand by the first trial judge of the jurisdiction where the parcel is located.

As mentioned above, State land is also managed by the DGI, through the *Direction du Domaine*. State land in the private domain can legally be leased, sold or granted to private persons. State land in the public domain (roads, river beds, seashore, etc.) is inalienable and imprescriptible. On some occasions, pieces of land are given or leased for important economic or social projects. But there is no policy for public land management either in urban or rural areas, and the inappropriate use of such land can rapidly decrease its value.

The main public institution responsible for the registration and protection of land rights (DGI) suffers from a severe lack of personnel, technical and managerial capacity, material conditions and administrative tools and procedures. Most DGI offices at the commune and jurisdiction levels are in very precarious conditions, records are kept following different procedures in each office and there is no centralized registry and electronic information system. Legal registration and transcription tariffs are also outdated, may vary in practice, and are not transparent.

Regarding Courts of Peace and Civil Courts, which are competent to judge possession and property cases respectively, they were found by previous studies to be often unable to resolve major land related cases or to enforce judgments. The judicial system in charge of supervising surveyors and notaries since the 20th Century appears to be more a problem than a solution due to long delays and the fact that judges, district attorneys and police are often involved in cases of land-grabbing.

Notaries and land surveyors are periodically appointed to specific jurisdictions by the Presidency of the Republic and, aside from urban centers such as the metropolitan area, notaries and surveyors generally work in poor conditions, particularly in rural areas. The right to exercise the profession is generally inherited and the procedures to integrate new professionals are not fully transparent. Their juridical and technical education background is mostly weak, and the archives and material conditions are precarious. Notaries and surveyors are organized in associations, but there is no professional body that could exercise political control over the membership and prescribe a discretionary and mandatory code of conduct, licensing, certification and training for their members. Due to the high share of informal transactions over total land transactions in rural areas, notaries and surveyors are not incentivized to work in rural areas, and in some parts of the country,

such services simply do not exist, or the land transactions are not worth enough to justify the presence of such professionals.

After many attempts during the last two centuries, the National Cadaster office (ONACA for its French acronym) was created in 1984 in order to establish and manage the cadaster in Haiti. However, ONACA encountered various difficulties and was able to fulfil its mandate over only small fragments of some communes. Several factors can explain this failure such as the fact that ONACA's mandate is of German inspiration, while the land system in Haiti is based on the principle of land publicity (close to the French system). In addition, ONACA is poorly staffed, and the legal links with other stakeholders of the land administration, including notaries, DGI and surveyors were never put in place. The institutional frame cannot match the actual needs and issues.

The land reform as a long-term solution

In front of such challenges, the Haitian government decided to deal with the land tenure reform as a whole, proposing to change the legal framework, modernize land administration tools and elaborate a methodology for the establishment of a “pre-cadaster” (*Plan Foncier de Base*, PFB). The objectives of the reform are to improve the security of land rights in order to promote sustainable development, regional planning and agricultural productivity. This reform, as envisioned and handled by the Inter-Ministerial Committee of Land Use Planning (*CIAT*, for its French acronym) is holistic and involves various land stakeholders: notaries, surveyors, the Tax General Direction, the National Office of Cadaster and the Judiciary Branch of the Department of Justice and Public Safety.

The institutional component is one of the most important element for cost-effective and sustainable land tenure administration. The reform envisioned a whole set of new tools and procedures together with modifications to the legal and institutional framework in order to develop modern land tenure administration services. In the framework of the PSFMR project, the CIAT supports the DGI, ONACA, judicial services, notaries and surveyors in the handling of the PFB processes, and the elaboration a set of four laws defining the new framework.

This initiative attracted substantial resources from the international community, first from the French Cooperation, financing a € 3.5 million project in Port-au-Prince along with the provision of technical assistance, then from the Inter-American Development Bank (IDB), through the 27 million US Dollars project “Land Tenure Security Program in Rural Areas (*PSFMR*, for its French acronym)”.

In parallel, the revision of the land tenure legal framework resulted in the preparation of four laws (related to notaries, land surveying, cadaster methodology and institutional framework, land registration) in order to modernize and simplify the land administration. Other significant achievements include an update of the administrative demarcation of eight communes with geo-referencing, the training of judges, law clerks, land administration staff, and private sector professionals (notaries and surveyors), as well as the installation of the GNSS (Global Navigation Satellite System) network of permanent CORS (Continuously Operating Reference Station) stations. This navigation network, combined with the 3D satellite imagery of Haiti made in 2014, provide essential tools to elaborate the cadaster in the whole country.

The master piece: The *Plan Foncier de Base*

Rather than beginning the reform with the preparation of a full cadaster linked to tax management which could be too ambitious, the Haitian government decided to develop a simpler tool on a pilot basis in some municipalities of the country, which could be the basis, after its fine-tuning, for the completion of a full fiscal cadaster. Given the complex situation and history of land tenure in Haiti, it was decided to design and implement an iterative methodology which could evolve according to the findings and observations during its execution.

The methodology of “*Plan Foncier de Base*” was therefore adopted, as a pre-cadaster consisting of a permanent geo-referenced data base on land tenure that links parcels, owners/occupants and land rights, and that registers transactions over time. The implementation of the PFB entails the development of a precise methodology consisting of various steps:

- (a) demarcation of communes and sections of communes;
- (b) public information campaigns on PFB methodology;
- (c) demarcation of plots and collection of information, titles and identity papers;
- (d) genealogical and socio-legal analysis of land tenure;
- (e) mapping of all parcels and creation of a land register;
- (f) assigning a unique Parcel Identification Number (PIN) and linking them to their owners/occupants and property rights,
- (g) issuance of surveyor’s minutes to eligible landowners, by designated authorities;
- (h) registration of the transactions that occur after the establishment of the PFB;
- (i) collection, organization and digitization of existing land records in the commune (archives of DGI, surveyors and notaries).

This methodology was developed, mastered and implemented by the Haitian government in the southern pilot commune of Camp-Perrin, as well as in some neighborhoods of Port-au-Prince. The final PFB is an administrative document that improves land security rights on private land, and allows the State to clearly identify its own domain and existing leases.

A key features of the pre-cadaster methodology is the participatory approach developed in partnership with local authorities and communities, which has three main steps. The first is the information and sensitization campaign which aims at fostering the inclusion and trust of the population in the process. The second step is the close work with land surveyors with whom families have known for generations. Third, once the delimitation, analysis and harmonization of the plots registry is finalized, the community validation is organized. It enables the government along with local authorities to present the results to communities, displaying the information gathered during the investigations. This is a unique opportunity to build consensus around everyone’s land rights, an opportunity for owners to express their worries, doubts or their opposition to the certification of land rights to an individual or group of individuals on a specific plot. The validation step permits to reaffirm the full accountability and transparency of the PFB production process.

The elaboration of the PFB is made *habitation by habitation* or (old colonial domains) or district by district following progressive systematic deployment. Then, a few days before the final validation, the owners receive an invitation and are called individually by telephone to confirm their participation, or that of a representative of their choice, at the event, and are reminded of the documents they have to bring.

In parallel, the socio-legal analysis studies allow tracing in the most reliable way the names of the owners who must appear on the cadastral register and the nature of the rights they exercise over a plot (status of the plot). This analysis takes into account both the parcels for which the ancillary documents were provided by the owners and the cases where the owners are not in a position to provide title deeds in support of their declarations. It thus takes into account both positive law and social practices around property. It is understood that this analysis does not in any way replace the work of land administration entities in charge of issuing property titles. It only allows to establish a presumption of land rights which is to be confirmed by the concerned professionals. After establishing the PFB and certifying the parcels tenure, the methodology also includes the issuance or re-issuance of parcels' survey minutes by designated authorities and professionals, using the up-to-date GPS-based demarcation and the new modern survey minute format.

In order to ensure a smooth implementation of the PFB, it has been necessary to develop intensive technical training for public and private technicians and professionals involved in the process, on different issues: the PFB methodology, topography, geo-referencing methods and tools, geo-referenced database management, juridical and socio-legal analysis, archiving, cadaster management, among others. Since the first PFB developed in Camp Perrin was a pilot experience, CIAT decided to implement the methodology itself with its own teams, before outsourcing the service to local or international firms. As CIAT progressively recruited, trained and deployed teams on the field, this pilot experience subsequently became a training cluster where young professionals could receive technical formation and exchange experiences and skills. The local notaries, surveyors and civil servants from DGI, ONACA and judicial services were also involved in the training process. The partnership with the French cooperation was key in this process, since part of the personnel was trained at the “*Ecole Nationale du Cadastre*” in France. In total, more than two hundred professionals have been trained in different topics, and most of them are now employed by the firm (*FIT Conseils-BETA*) which is under contract with CIAT to implement the PFB in other municipalities.

At the end, three main products came out of the PFB:

- a real and sound knowledge of land tenure situations at a real scale, which provide essential inputs for public policy;
- the pre-cadaster itself for one commune (pre-cadasters for four additional communes will be available by 2018);
- a titling process which increases the population's trust in the process.

The first results and lessons learned

A key implementation challenge of the PFB was the high land fragmentation and lack of ex-ante knowledge on existing the land tenure situation, which made operational planning and budgeting more complex. The 2009 Agricultural Census provides information on farm structures and lands, but the data collected was based on declarations of farmers who did not have precise ideas of the areas they actually owned or exploited, mostly because of undivided land and archaic methods of

surveying. The National Geospatial Information Centre (CNIGS) was able to estimate the number of plots through satellite imagery analysis, but the last appraisal done in 2011 to design the PSFMR project turned out to be highly underestimated. Indeed, while the initial estimation for the number of plots to be surveyed in Camp Perrin was 8,000, the PFB ended up surveying 22,000 plots. The initial operational and budget planning had therefore to be reviewed. At the end of 2016 the PFB was implemented following the above-described methodology in the whole territory of Camp Perrin. By 2018, it will be implemented in the communes of Chantal, Sainte Suzanne, Grande Rivière du Nord and Bahon. A total of 84,000 parcels are expected to be surveyed by the end of the project, over 55,343 hectares.

The commune of Camp-Perrin boundaries are now precisely known: 171 km² and more than 22,000 plots. The main places and former colonial districts (*habitations*) were identified and delineated. These are relevant units structuring the rural toponymy, and remain the reference unit for land changes history. Around 38% of the municipality area is State private property. It is mostly constituted by mountainous parts of the municipality that reach Formon peak, in Macaya National Park area. The satellite imagery analysis shows that these lands are almost totally deforested, and farmers exploit them extensively with unprofitable and environmentally unsustainable practices. These State lands are mostly leased since 1940-1950 (1,202 plots out of 6,750 has) with an average size per leasing contract of 5 ha.

To illustrate the PFB's results, the land structure analysis in the first communal section of Camp Perrin (Lévis) is presented in the table 1 below. Sixteen districts were identified and located in this section, with an average size of 184 ha. 3,948 titles (original titles, survey minutes, private receipts) were collected, covering 52% of the 5,875 parcels inventoried over the 2,528 hectares of the section. Some titles date back from the early 20th century, while documents from the 19th century were found in surveyors and notaries' archives. The average plot area is 0.43 hectares, with a few differences in districts with particular characteristics, including the presence of some large properties. Around 35% of properties are "family lands" (*indivision*) and 7% of the land belongs to the State. More than 60% of the plots are eligible to receive titles. The titles delivery process began in July 2016.



Table 1: Land tenure analysis of 1st section of Lévis at Camp-Perrin

<i>Habitation</i>	Number of plots	Surface (ha)	Average surface of plots (ha)	Nb of family land plots	% Family lands	Number of State land plots	% State lands	Number of plots eligible to title	%
Bouet	110	31	0.28	44	40	0	0	66	37
Bourjolly	270	180	0.67	128	47	2	0	140	60
Champlouis	244	68	0.28	98	40	0	0	146	65
Chantilly	1 128	425	0.38	391	35	11	-	726	64
Gérard	156	160	1	62	40	0	0	94	70
Journu	930	298	0.32	334	36	0	0	596	63
Lachaux	36	110	3	17	47	0	0	19	47
Lacoste	180	129	0.72	75	42	1	-	104	6
Lamartinière	732	171	0.23	201	25	1	-	550	63
Laporte	505	96	0.19	62	11	351	70	96	34
Lévis	258	126	0.49	110	43	31	6	117	41
Matou	216	104	0.48	118	55	0	0	98	55
Mersan	227	98	0.43	95	41	16	7	117	61
Rollin	145	69	0.48	47	32	0	0	98	58
Sçoveau	285	270	0.95	121	42	0	0	164	43
Touya	453	193	0.43	151	37	0	0	285	54
Total	5 875	2 528	0.43	2 054	35	413	7	3 416	61

The PFSMR gave the opportunity to debunk a myth: it is possible to create confidence between State and peasant owners, copy land titles and disentangle the very complex legal and practical reality created by two hundred years of agrarian history. The interventions in the pilot municipalities along with the involved public institutions and land professionals have made it possible to analyze the considerable difference between the legal and institutional arrangements for land tenure, and the practices: procedures, time and costs of land transactions varies. PFB's success is largely due to the fact that the agents were deployed on the field, interacted directly with citizens and did not remain in a waiting and authority position in their offices.

Collaboration with ministerial officials and with delegated public authority has been essential: they benefit from population trust and possess a unique knowledge (archives and practices). Post-field work is lengthy, meticulous and requires three times the amount of field work time: legal analysis of each situation, harmonization of the work of each profession involved in the PFB (surveyors, cartographers, topographers, land analysts, etc.), land tenure analysis and synthesis. The issuance of survey minutes created a new dynamic with the population and definitively reassured them about the PFB objectives; it removed any ambiguity related to the nature of the project. No issuance of title is possible without the collaboration of the commissioned surveyors working in the municipality.

The PFB in Camp Perrin reached an average cost of 175 USD per parcel including the process of demarcation, socio-legal analysis and community validation. To this should be added the cost of issuing up-to-date survey minutes with the new format for eligible parcels, which amounts to 75 USD/parcel. This cost includes the different professional and administrative fees of surveying, judicial validation and DGI registration, which have been partly negotiated with the different entities involved (surveyors, DGI, local court, etc.). Around 50% of the private owned plots are eligible to the new survey minutes. These costs are expected to decrease as the project reaches economies of scale and the information management systems and administrative procedures run in.

The full coverage of Camp Perrin with a PFB that registers plots, people and rights, required the mobilization of 80 professionals and technicians over a period of 18 months. Once the PFB is established and most of the land clarified, it is estimated that the maintenance of the PFB and the delivery of basic land administration services in a commune such as Camp Perrin (45,000 inhabitants of which 89% are rural and 11% urban) would require around 5 public servants at the DGI and cadaster service, in addition to the commissioned 3 notaries and 3 surveyors already assigned to the commune.

Remaining challenges to scale-up modern land tenure administration services

The PFB is an administrative document which aims at clarifying and certifying ownership on private land, and clarifying use when it comes to State land. It takes into account local land arrangements (separation of land rights in order to manage family lands in rural areas, separation of land and housing rights in urban areas). It also allows identifying the administrative limits where the cadaster has to be implemented. It offers the opportunity to discuss the involvement of local communities in land management. This is especially important for regional planning, as well as to improve ownership and use of the State private domain that is neither defined nor delimited or located in the territory. The PFB finally provides maps and land control elements for issues of regional planning in the widest sense: boundaries of cities and boroughs, delimitation of protected areas, disaster risk management with location of rivers, gullies, roads, channels, among others.

But while the PFB is a big step towards the development of the cadaster, several challenges remain for the expansion of cost-effective land administration services. As explained above, the PFB had an experimental feature related to procedures, methods and coordination among stakeholders that had to be tested. The pre-cadaster methodology was elaborated and adjusted while being implemented, which entailed an initial investment cost. Some of the most important challenges are the following.

A key issue is the training on the different procedures and tools required to endow field staff and land administration professionals with the complex set of skills and capacities related to the land tenure reform process and management. The project benefited from different trainings, exchanges and technical assistance opportunities, particularly with France. The direct implementation of the PFB by CIAT also provided an opportunity to cross theoretical knowledge and field practices, both for management and field staff. It is however still necessary to fine-tune and run a training program for land tenure stakeholders, in order to both improve the capacities of the existing professionals (notaries, surveyors, topographers, public servants, GIS specialist, etc.) and increase the number of competent staff working in the different related services. As tested in the framework of PSFMR project, the idea is to subcontract the elaboration of the PFB to external competent service providers, since land tenure public institutions could hardly cover themselves all the country in a reasonable lapse of time. It is therefore necessary to develop the capacities among local service providers and firms to increase the PFB coverage, by developing the skills related to topography, GIS management, land tenure legal framework and analysis, as well as social analysis and community participation.

Several other situations also make the process lengthier: Some owners have difficulties to find or have even lost their titles and documentation; in some cases, transactions have taken place but have never been formalized, and the current owner still has documentation with the name of the previous owner; notaries or surveyors sometimes keep the documentation in their hands while owners gather the resources to pay their services (which can take years); or even it has been observed that a high share of titles are abroad in the hands of diaspora family members (around 2.1 million Haitian live abroad). The latter pushed the project to carry out a communication campaign in coordination with the Haitian Embassies in USA, Canada, France or Dominican Republic. It can also be difficult to gather all the neighbor owners on a same day to undertake the community validation, particularly in the case of family land (*indivision*). Finally, all these processes are made lengthier and more difficult by the difficult conditions throughout the country (mountainous terrain, lack of roads and electricity, geodetic network to be consolidated), without mentioning the impacts of potential natural disasters, as it has been the case with the category 5 Matthew Hurricane which hit the South of Haiti (and particularly the pilot area of Camp Perrin) in October 2017.

From a technical point of view, the CIAT built an initial land tenure information system that effectively allows managing land tenure data encompassed in the PFB, but it has to be consolidated in light of the institutional framework. Until now only CIAT/ONACA and one external service provider under contract with CIAT (*FIT Conseils-BETA*) have managed land tenure information systems, and some technical harmonization is still necessary among both entities in that regard. If the Government expands the contracting of service providers to implement the PFB in the country, it will be essential to use a single and uniform information system. This key aspect is being handled by CIAT as a key priority, with the view to progressively transfer the system to the restructured public land tenure entities that would be in charge of administrating the PFB. In this framework,

key elements to ensure an adequate management of the information system are the clear definition of responsibilities among the land tenure entities, as well as strengthening the capacities related to GIS and database management. For the moment only CIAT and targeted field technicians of ONACA and DGI have access to the information system, but not yet all the stakeholders involved in land tenure administration. The privacy policy has also to be defined in order to ensure a proper management of this sensitive information.

Establishing the PFB in areas where the urban network is growing fast is a major challenge, yet the process is more likely to face conflictual situations linked to illegal land possession on public or private properties. High demand for land in urban areas increase the value of properties and consequently attract fraudulent and illegal land tenure activities developed in complicity with local or even higher level authorities and judicial services. Dangerous armed gangs are also involved in some places. Some coastal areas improper to habitat such as mangroves and swamps are frequently subject to these irregularities, and in other places illegal land transactions have been exacerbated by unclear political decisions related to declaration of public utility after the 2010 earthquake. Through demarcation, legal analysis and community validation, the PFB brings light on tenure situations and is able to identify illegal transactions. Establishing the pre-cadaster in this context can therefore be sensitive and even dangerous, and specific approaches still have to be developed to handle these situations. Fortunately, it is not the case in most of the country. However key strategic areas can be subject to such misdeeds, such as marine coasts or important communication axis, which set serious problems of territorial planning and management.

From a fiscal point of view, the PFB does not yet include land appraisal though it is a fundamental piece of a full cadaster which would link land information to tax collection and management. The first constraint to developing such a fiscal cadaster is the fact that the vast majority of land transaction values are under-declared (notarized transactions) or even not registered anywhere (transactions not notarized). On the other hand, bridges and links with tax collection information system still have to be developed, which first entails developing a reliable fiscal revenue information system.

The sustainability of modern land tenure services depends on the handling of the new developed services by public institutions, out of project framework and without foreign financing. The Government should increase Public Treasury resources allocation and improve the efficiency of their use. This is crucial at the time of transferring the PFB in municipalities where it has been developed in order to ensure its permanent updating and maintenance. Both current policy framework and Public Budget management cycle do not necessarily ensure such allocation of resources. As for the previous point, a strong leadership from high level authorities is essential to ensure that strengthening land tenure services is a priority.

Population is ready for change. Institutions are more challenging. The full transfer of the development and management of the PFB still has to be consolidated, in hands with the restructuration of DGI and ONACA services, particularly in order to link the pre-cadaster with land tenure rights registration (*conservation foncière*), management of State domain and tax collection services. For this purpose, the modification of the legal framework is unavoidable, but therefore requires the vote of laws by the Parliament, a highly unpredictable process in the country's volatile political context. Once the new legal framework is approved, a key challenge will be to effectively drive the institutional rearrangement, which requires a strong buy in and leadership of both political authorities and technical teams, as well as the development of a strategy to create a culture of change. Empirical evidence shows that resilient leaders who face a lower

probability of being replaced are less likely to reform institutions. This can be particularly challenging with public services that have never changed their way of working for decades. This process also entails clarifying the responsibilities among institutions, and solving historical controversies among institutions about their respective mandates. Use of modern technology (GPS, computers), use of forms, new organizational charts, etc. will not be so easy and will need a strong will from the government.

Finally, the PFB enables the Ministry of Agriculture to see smallholders farming and agriculture itself in a different way. The PFB provides keys to understand farming tenure arrangements and might be used to improve farming land performances. On the other hand, the PFB also provides tools for the Government and particularly the Ministry of Agriculture, to improve public land management, for example through indirect tenure on State land.

Conclusion

Land tenure and land administration in Haiti is characterized by complex structures built over time, with a three-centuries-old tradition of private property combined with an erratic and weak management of public land. A few agrarian reform attempts, some unclear land use decisions and a weak institutional and judicial framework have brought even more complexity to land management and territorial planning. Addressing the key structural elements of land tenure governance through a comprehensive legal, institutional and operational reform requires a strong political and institutional buy in and leadership. After a number of failed attempts, the choice has been done to build on and improve the existing system through a pragmatic, concrete, systematic and iterative approach, in dialogue with the main stakeholders involved in the system, including the local communities. An important challenge is to find means to upgrade and update the PFB and provide resources to municipalities, in a context of mass poverty. Formal and informal land markets are very active and opaque, and land prices are rapidly increasing due to competition among urban and farming land uses. To date, substantial results have been achieved in some urban and rural areas of Haiti, and more is to come through the expansion of the PFB in the territory, as well as through the legal and institutional reform.

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Acronyms

CIAT : Comité Interministériel d'Aménagement du territoire

DGI : Direction Générale des Impôts

GPS: Global Positioning System

ONACA : Office National du Cadastre

PFB : Plan Foncier de Base

PIN : Parcel Identification Number