Reforming the Land Sector in Jamaica

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Key words: tenure, cadastre, land reform, adjudication, public awareness, land titling, GPS, parcel mapping, traversing, land legislation, tenure regularisation, tenure clarification,

SUMMARY

The Land Management Consortium was contracted under a jointly-funded Government of Jamaica / IADB pilot project the objective of which was to determine paramenters for improving the operation of the local land market by broadening and deepening the levels of property holding and tenure security within the general population. Specifically the project would develop an innovative methodology for the affordable mass parcel mapping and titling of tenure rights. This paper examines the project and gives a report on its achievements, The project was successfully implemented over a 29 month period ending in March 2005.

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1. THE LAND MANAGEMENT CONSORTIUM

The Land Management Consorium (LMC) was created in 2002 as a collaboration by a number of Jamaican and international firms for uncovering and participating in opportunities in the Caribbean Land Sector. The diversity of LMC's partners uniquely places the organisation in the position of having a clear understanding and in-depth experience of all of the critical elements involved in the development of Land Management Infrastructure in the Caribbean region.

1.1 Beliefs

The Land Management Consortium was formed to bring leadership in the modernization and reinvention of land-related public sector businesses in the Caribbean because the group believes that:

- Achieving sustainable development is a process and not an end
- Whilst skills and capabilities should be leveraged globally, Caribbean Nationals must take leadership roles in the thinking and ownership of the processes in addition to the responsibility for outcomes of projects that affect the development of the region.
- Competencies and capabilities can only be developed by the act of doing and that innovation is born out of participating and tinkering in doing work.
- Whilst internationally established methodologies and framework are good reference points for enabling institutional strengthening, people working together in a co-evolving way with the opportunity for immediate feedback is vital and must not be constrained by established methodologies.
- The quality of organizational output and cost effectiveness must be benchmarked globally, but processes and the way of doing work must be cognizant of cultural and local values.
- Knowledge based projects relating to national development should actively seek opportunities for the creation of Intellectual Property as new revenue streams

2. OBJECTIVE OF THE TENURE REGULARISATION / CLARIFICATION PROJECT

Objective of project was to improve the operation of the land market by broadening and deepening the levels of property holding and tenure security within the general population. Specifically the project would develop an innovative methodology for the ***affordable*** mass parcel mapping and titling of tenure rights.

3. SELECTION OF PILOT AREA FOR PROJECT

Out of 14 candidate parishes nationally, the pilot area area for the project was selected in the parish of St Catherine based on weightings given to

- incidence of titling
- level of poverty
- incidence of private lands

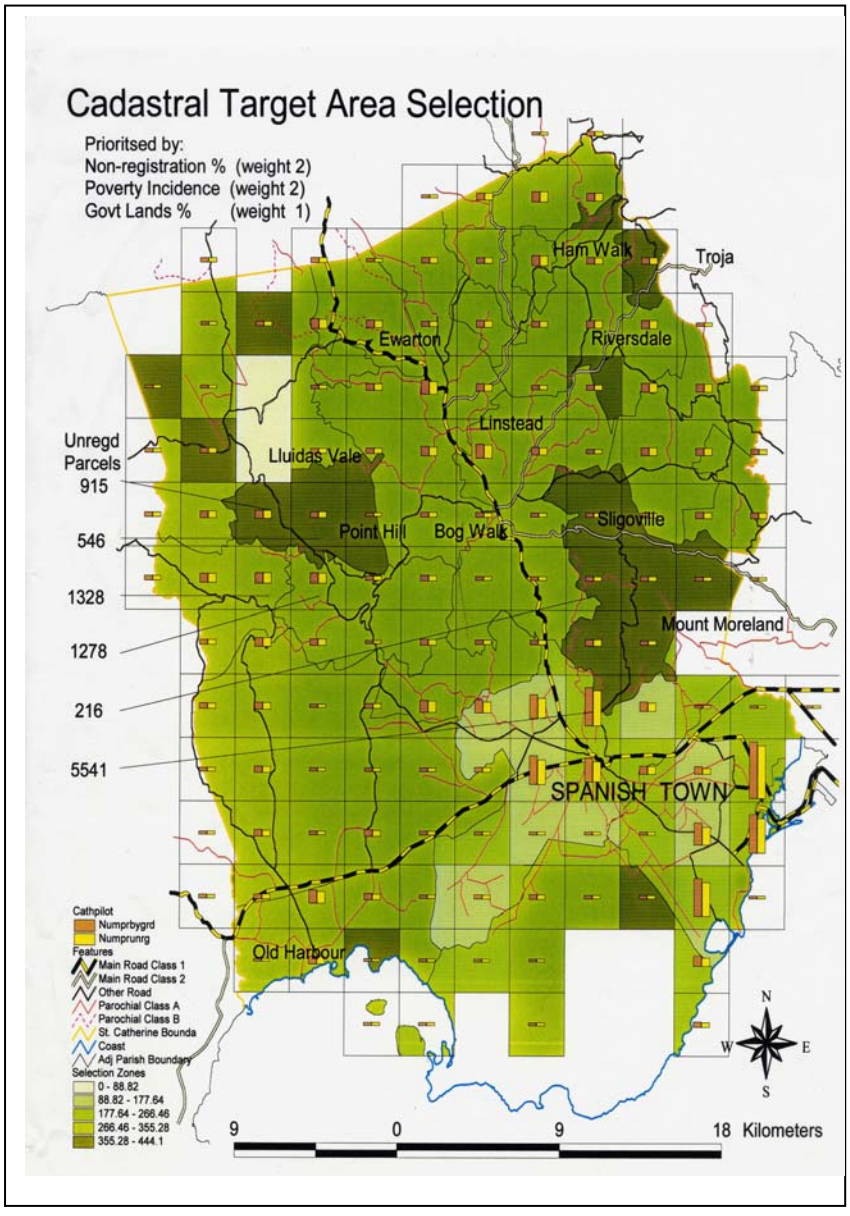


Figure 1: Selection Criteria

4. PROJECT DESIGN

The project was designed to run for 24 months commencing in July 2002 and ending on July 2005. It had as its objective the regularization (formalising) 13,000 informal parcels (largely unregistered) and the clarification/update of 12,000 already titled parcels. The project was initially predicated on a $100 to $150 band for delivery of combined legal and cadastral mapping services for the clarification and regularisation activities respectively. The parish of St. Catherine was organised into seven Blocks for work to executed. Figure 2 below shows the spatial layout of these blocks and Table 1 shows a break-out of the anticipated parcel yeilds.

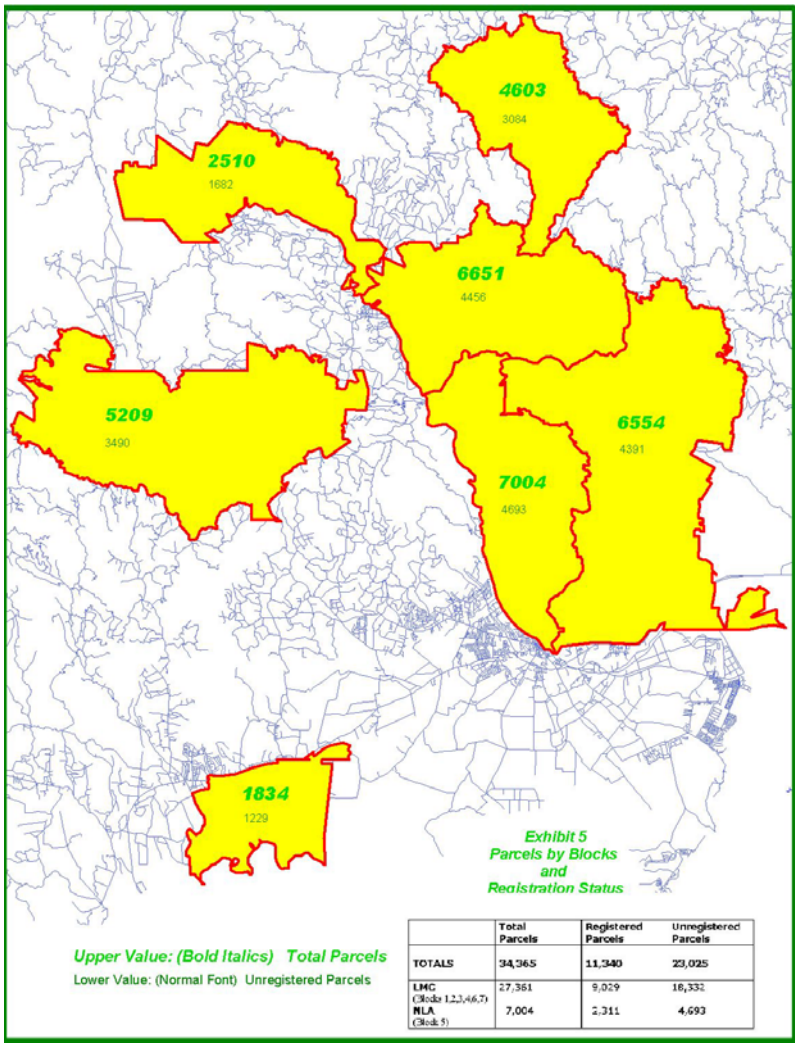


Figure 2: Project Blocks

Table 1. Projected Parcel Yeilds in Project Blocks

	PLANNED PARCEL VOLUME		
BLOCK	**Total Parcels**	**Unregistered Parcels**	**Registrd Parcels**
1	**2510**	**1682**	**828**
2	**4602**	**3084**	**1518**
3	**6651**	**4456**	**2195**
4	**5209**	**3490**	**1719**
6	**6554**	**4391**	**2163**
7	**1834**	**1229**	**605**
	27361		

5. CRITICAL SUCCESS FACTORS

The critical success factors for the project were;

- Modified legislative framework for simplifying procedures and fast-tracking titling process
- Increased tenure awareness and participation by the target population in St. Catherine
- Design, Proving and Adoptation of non-traditional parcel mapping approaches

6. PROJECT EXECUTION

Actual project implementation ran for 29 months from October 2002 to March 2005. Over the project period a number of highlights were recorded;

- a total of 21,415 parcels field mapped or georeferenced for supporting titling
- a total of 10,015 new parcels field mapped
- a total of 11,400 existing registered parcels digitized and georeferenced
- a total of 3,694 tenure files created for tenure claims on behalf of claimants within the project area
- a total of 3,132 tenure files opened for the titling of informal parcels representing a participation rate of 31% in the regularisation component
- a real-time Global Positioning Network of three base stations established in Linstead, Lionel Town and Kingston to service the boundary measurement requirements of the field mappers on the project using real-time GPS instrumentation
- aerial photography flown of the entire St. Catherine pilot parish in order to construct an up-to-date map base for supporting adjudication, para-legal investigation, boundary measurement and cadmap operations

- a computer application developed for the tracking of cells (each of the seven blocks is further subdivided into a number of cells) through the organization from cell creation at the pre-adjudication planning stage to the invoicing at map sheet stage.

7. DESCRIPTION OF PROCESS FOR TENURE CLARIFICATION / REGULARISATION AND CADASTRAL MAPPING

7.1 Who, Where, What, How

The optimum Cadastral systems answer four key questions;

Who ? - who is the legally entitled owner for the bundle of property rights existing on this parcel

Where ? - where is this parcel located

What ? - what is the composition of this bundle of rights

How ? - how is the parcel defined (area, shape, perimeter)

Cadastral systems exhibit varying strengths on each of these four axis. The LAMP sought to strike a judicious and economic balance between these competing elements.

7.2 Methodology

The methodology developed by the consortium for successfully determining these four parameters included;

Public Awareness
An essential component of the project is the dissemination of knowledge about the project (goals, benefits) to members of the broad community. This is executed by the government's Project Management Unit (PMU/LAMP) using radio, newspaper, television.

Public Meeting – Kick-off
Prior to entering a community to carry out the detailed works, LMC arranges and conducts a community meeting within a facility (church/ school) in the community. At that meeting the specific actions of surveyors and legal officers will be outlined, the community will be encouraged to participate actively and their expected support role will be emphasised.

Legal Interviews
Within two or three days of the Public Meeting , the Legal Investigations begin with a party led by the Director of Legal Services. The group establishes a temporary field office within the community and processes applicants / claimants. Where tenure entitlements are established to the satisfaction of the legal team a legal case file is opened with documentation supplied by the claimant.

Control Surveys
A network of accurately determined reference locations are established by a geodetic level GPS observation team. These reference points controls the subsequent boundary survey process.

Adjudication
Commissioned Land Surveyors visits each parcel, after giving prior notification, and agrees the position of the legal boundary with the claimants.

Demarcation
In parallel with the adjudication, the Commissioned Land Surveyor, or an Assistant Surveyor under his charge, fixes the location of the agreed boundaries by planting a survey monument.

Survey Observations
A team of Measurement Surveyors using GPS and Total Stations observes the marks laid down by the Commissioned Land Surveyors in defining the parcel boundaries. The survey results are downloaded in the Cadastral Mapping Unit at HQ.

Legal File Construction
The files that are gathered in the field by the Legal Field Team are further processed in HQ and the final documentation for the PMU and the NLA prepared

Cadastral Map Preparation (Preliminary)
The survey files that are observed in the field by the Measurement Team are further processed in HQ by the Cadastral Mapping Unit and a preliminary CADMAP plotted for submission back to the community

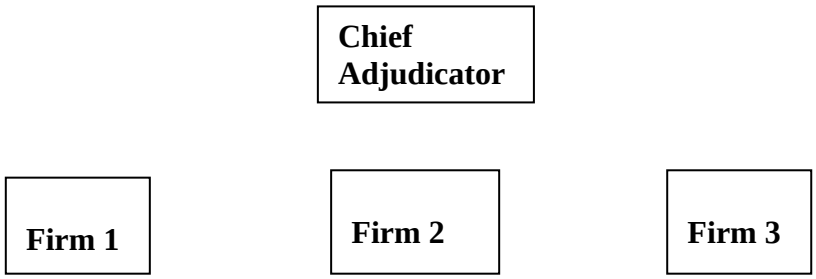
Community Display
The preliminary map is displayed in the community for 30 days for the detection and correction of mapping and ownership errors, for the filing of objections by land-owners and for further communication on the value of titling

Cadastral Map Preparation (Final)
The preliminary map is updated by the Cadastral Mapping Unit based on the community feedback and the final CADMAP plotted for submission to the PMU and the NLA .

Delivery
Documents and Maps are delivered to PMU and NLA. These are checked for accuracy and completeness. Any errors uncovered during the check are corrected by LMC.

7.1 Mapping Crew Organisation

1. Field Crew for Adjudication:
The Field Crew for Adjudication was configured around three teams of two adjudicators each, under the management of a Chief Land Adjudicator



The Chief Adjudicator is responsible for team standards, team output and productivity payments.

2. Field Crew for Observation:
LMC operated a party size of four (4) observers, organized into two firms, for running the observation. Each observer had a Trimble 5700 GPS and Trimble 3300DR Total Station and a Trimble GeoXT. There was an incentive scheme crafted primarily around payments for output but with added payments for best producer, best team and overachievement vis-à-vis set project targets.

3. Fast Traverses or On-The-Fly (OTF) Traverses
LMC found that the combination of the 5700, 3300DR and Survey Controller field software allowed the evolution of an innovative field mapping mode, that we termed the OTF Traverse. Traditionally, traverses began and closed on widely spaced accurately determined control points. With the GPS, the observer can place a point for controlling his traverse at any point, switch to traverse mode on his collector and run his traverse; then close the traverse anywhere by fixing the terminus with the GPS.

8. AREAS FOR IMPROVEMENT IN FUTURE PROJECTS

8.1 Public Awareness / Relations Issues

The number of persons in the communities visited that were interested in accessing the legal component of the Project was far less than originally envisaged consequently the project experienced a 31% participation rate in the regularisation areas whilst a 60-70% participation rate was initially anticipated. It is felt that one factor that affected landowner participation was a general lack of awareness of the project and or its benefits despite the campaign mounted. Some landowners were unappreciative of the value of holding registered title, relying on established and customary methods of land tenure accepted at the community level.

BIOGRAPHICAL NOTES

Silburn Clarke has had more than 25 years of experience as a practitioner in all areas of geospatial sciences in both the public and private sectors. He is presently the President of Spatial Innovision Limited the leading Caribbean spatial technology group with offices in Jamaica and Trinidad. Business activities includes satellite and aerial imaging, cadastral surveys for land titles, establishing hi-accuracy GPS infrastructures to support national applications, designing and building scaleable GIS solutions. He has served on numerous policy groups and has been at the forefront of land information policy formulation and strategic implementations nationally and regionally. His company represents the providers of best-of-class technologies in image content and analysis, global positioning systems, geographic information systems and digital geodata scanning and conversion.

Llewelyn Allen is a Commissioned Land Surveyor and the Project Manager for the Land Management Consortium. He is the principal of Llewelyn Allen and Assosiates one of Jamaica's leading land surveying firms and a member of the Executive Management Team of the Land Surveyors Association of Jamaica. He is also a member of the Royal Institution of Chartered Surveyors.

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