**APPLICATION FORM**

"Inter-American Award on Innovation for Effective Public Management - 2018"

### I. General Information

<table>
<thead>
<tr>
<th>Member State:</th>
<th>Trinidad &amp; Tobago</th>
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<tbody>
<tr>
<td>Public Institution applying:</td>
<td>Ministry of Agriculture, Land and Fisheries</td>
</tr>
<tr>
<td>Title of the Innovative Experience:</td>
<td>Integrated GIS and Document Management for Land Management and Administration</td>
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<tr>
<td>Implementation time of the innovative experience at the time of the application:</td>
<td>3 years</td>
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<tr>
<td>Category Applying:</td>
<td>Innovation in Open Government</td>
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### II. Brief summary of the innovative experience

The Ministry of Agriculture, Land and Fisheries embarked on a project to implement an Enterprise-wide GIS in 2015. The GIS has grown exponentially to capture data sets extending from State land assets and commodities to agricultural pests and diseases. Spatial enablement incorporates a single national developmental pillar therefore the Ministry integrated a Document Management element to fully embrace e-Government and other developmental goals that promote good governance and service in its propensity towards transparency, public access and collaboration. The Land Management Division retains over 100,000 State land files which are accessed daily while conducting administrative and management activities. There was a need for seamless access to the spatial records of State land and the related administrative transaction. Delivering the 'Digital State Land Client' with automated processes, online access and conversion of paper documents to digital formats was a milestone for the Ministry. The Integrated GIS and Document Management for Land Management and Administration Program has three main phases; (1)Spatial Information Management Systems implementation and data population-the first phase in creating the State Land Clients Unique Identification based on parcel location (2)Electronic Document Management Systems-the second phase in converting all State land records to a digital format, inclusive of digital lease and its attribute information (3)Digital State Land Client-the final phase that seamlessly integrates phase I and II allowing access through customised portals Staff and Public clients alike are sensitized to this new technology (example GPS Handheld Devices), web-map applications, document scanning and an overall restructuring of workflow processes. Starting with the GIS Unit, Ministry staff and selected external agencies submit GPS Field Investigations and GIS Map Analysis requests online and receive digital reports and maps electronically. The program is presently undergoing testing of a log in client that extends...
to the general public moving towards a culture of public access and Public Participation.

**III. Institutional information**

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<thead>
<tr>
<th><strong>Name of applying institution:</strong></th>
<th>Ministry of Agriculture, Land and Fisheries</th>
</tr>
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<tbody>
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<tr>
<td><strong>Administrative Level:</strong></td>
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<tr>
<td><strong>Administrative Nature:</strong></td>
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**IV. Information on the innovative experience**

1. **Executive Summary**

The Integrated GIS and Document Management for Land Management and Administration program was implemented to strengthen the drive to migrate from paper to digital land records. The ability to quantify and monitor the Country’s State land and agricultural assets is paramount in increasing work process effectiveness and productivity in Land Management and Administration. Past research has highlighted the fact that the Land Management Division is responsible for administering and monitoring over 100,000 State land parcels and subsequently the historical records and transactions of each parcel and its related tenant/occupier. Without a digital system to track and monitor transactions for lease renewals, rent revision, change in land use, encroachments or squatting, to name a few, the system has been plagued with time-consuming and duplicated hard-copy file movement and yearly estimates of work progress due to the quantum of transactions. Further investigations have also revealed the occasional ‘loss’ of hardcopy files, correspondences or documents which cannot continue to occur. Additionally, State land agricultural parcels that have been plagued with administrative and management issues contribute and enable underutilisation and illegal occupancy of state land. The Northern Food Baskets of Trinidad Case Study of the Ministry utilised geospatial models and analysis to identify fragmented lands, low levels of cultivation and determine soil fertility to enhance land management and optimise agricultural production. Geographic Information Systems is the core of Land Management and Administration forming a well-established land cadastral and lease management system for the Ministry. The application of GIS technology has helped provide the necessary datasets of various land information to facilitate the work of Land Officers. GIS coupled with Document Management allows for full integration of related State land administrative transactions and processes. The integrated system entails layers of data and information, inclusive of land use, tenants/occupier, aerial photographs, topography, soil, cultivation levels and other land-related information, making the work of Land Officers and Agricultural Officers more effective and efficient. Access to information at your fingertips is one of the main advantages of this digital system, while retaining the rules and regulations of Land Management and Administrative processes.

2. **Background situation**

One of the most vital sources of information are the land records which form the backbone of the Ministry and provide the only resource for a single snapshot and inventory of all files/records. This will subsequently feed into the already established Spatial Information Management Systems (SIMS) and proposed Workflow Management Systems. There has also been a ‘scan-and-store’ approach to data capture of land files
within the Division which falls short of a true Document Management System and the effort to minimize paper and physical movement of files. The ‘scan-and-store’ approach denies the system true data extraction, retrieval and analysis. The real strategic value is found by unlocking the data contained on those printed pages through scanning in addition to data extraction and timely, systematic updates. Document capture initiatives better integrate electronic documents into business workflows that should follow the data capture and have a higher return on investment as it will provide data for population of existing and proposed Information Systems within the Division to better inform staff and facilitate informed decision making. The on-going Integrated GIS and Document Management for Land Management and Administration program aims to enhance Ministry performance and service in-line with the policy initiatives enunciated in the Official Policy Framework of the Government of the Republic of Trinidad and Tobago (GORTT).

The present Enterprise GIS (EGIS) technology within the Ministry encompasses Web, Field/Mobile and Desktop. Enterprise GIS technology is designed specifically for Inter-Divisional and Stakeholder interfaces. A GeoWeb 2.0 architecture will be utilized to harness the functionalities of an Enterprise GIS (EGIS) with password protected data for on and off site data entry and general access, building a comprehensive 'land bank'. The real strategic and economic value is found by unlocking and integrating the data stored in Departmental data-silos and archaic filing system.

3. Link between the innovative experience and the category selected

A digital portal to your information via desktop, web and/or mobile device empowers users to make informed decision. The government of Trinidad and Tobago has embarked on several programs to improve efficiency and effectiveness through technology. Specifically the Ministry of Agriculture Land and Fisheries (MALF) integrated digital document management with GIS implementing a smarter more transparent land information system. The MALF as a government body that seeks to support the citizens of the country and foster improved public sector processes. Citizen participation is key to the program and thus the focus on the 'Land Client' as the public client who will be able to access their digital state land file, track the progress of their request, update (or rectify) their client information. This process encourages direct and constant communication between the Ministry and the public 'Land Client', thus promoting easier access to public information and accountability through the use of ICT’s. Access to an integrated GIS allows users (Ministry staff and public) the added benefit of not only reports and digital documents but also web-mapping applications with the capability of overlaying several datasets and geoprocessing tools for predictive modelling and trend analysis. The Ministry is also seeking to collaborate with NGO’s and Academic Institutions to promote participation and open the line of communication for all citizens in policy and program decision-making.

4. Evaluation criteria

a. Singularity

Who designed the initiative?

The program was initiated in 2015 by Ministry officials within the Land Management Division and the Geographic Information Systems Unit. The program was formulated under the Public Sector Investment Programme (PSIP), an instrument used by Government to effect its vision and policies. PSIP is a budgeting and strategic planning tool made up of projects and programmes which are designed to realise the goals set out in Government’s overarching policy Vision 2030. This tool is an essential part in the linkage of national policies and strategies with measurable results and outcomes. As a result, the PSIP plays a pivotal role in the development cycle of Trinidad and Tobago. This specific program follows the Vision 2030 Development Theme: Delivering Good Governance and Service Excellence. Good governance promotes strong public institutions, citizens who respect authority and the rule of law and benefit from a professional civil
Please describe the elements that make the experience innovative:

"I tell you what is where and when you know where it is and how much is there then you can decide what to do." Development of a comprehensive digital system provides a platform for ‘access’ to data upload and download through desktop, web and mobile applications. Presently the GIS Unit is fully functional utilising GIS and Web Servers to capture, store and analyse data for the entire Ministry of Agriculture Land and Fisheries. The GIS has a comprehensive database of 80,000+ parcels, fish landing sites, pest and disease locations, plantations, forest reserves, beekeeper locations, marine parcels and squatter locations, to name a few. One of the few regional GIS databases that contains such an extensive database. In keeping with international standards there are several advancements that will take place throughout the course of the program that will benefit the public citizen, namely; Comprehensive Digital Inventory of all state land occupied or unoccupied is the main benefit. Subsequently, staff will be able to retrieve information in minutes as opposed to days or even weeks. A digital system will also eradicate loss or misplacement of files or documents, safeguarding the public citizens’ tenure. Faster Lease Delivery - managing thousands of documents with the ability to retrieve in seconds enables expedited lease preparation and documentation. A ‘Land Client’ - this will minimize the need for citizens to physically conduct business at the Land Management Division. A digital system also reduces the time it takes for documents to traverse the different Divisions and Units for approvals and additional documentations. Hybrid GIS Client will be established enabling the first ever link between the tenant database and parcel database

Are there similar experiences to the one presented, within your or a foreign country?

As the Ministry of Agriculture, Land and Fisheries is mainly ‘space’ oriented the focus on GIS and its integration with Document Management is slightly different to other government sectors. Although within the Region, Jamaica's National Land Agency has a similar goal of coalescing land related documents with their spatial GIS database and the Jamaican experience goes a step further and caters for credit card transaction online in a fully implemented eLandJamaica. As the Land Information for Trinidad is in its early phases of completing inventory and digitally converting hard copy files, the amount of information available for public viewing and digital land transactions are at different stages of implementation.

b. Impact on citizens

Please, explain how citizens benefit from the experience. Indicate, comparative date:

Timely access to critical information is key. Yet all too often Ministry staff fail in their search to obtain the information they need. There are many reasons for this failure — some technical, some cultural, and some personal. Despite the reasons for this failure, the amount of time wasted in futile searching for vital information is enormous, leading to waste in man hours. Efficient access to information is the basis for improved decision making, saves time and frustration, and leads to less duplication of effort within any Ministry. 1. GIS Technology for Extension Officers Extension Officers will be able to record field reports real-time on handheld devices and reduce the amount of office hours giving them more time in the field. Extension Officers will also be able to access pest, soil and climate data on-site providing farmers with more accurate, timely and meaningful information to better assist farmers. 2. Youth in Agriculture GIS Training Program A training program to be integrated into the Ministry’s Farmers Training Centre. The courses will be delivered based on the approved curriculum and in conjunction with the relevant external agencies. Training material will also be provided to farmers. 3. Praedial
Larceny Reporter Phone Application Farmers will be able to report and view real-time incidents of praedial larceny on their phone. The app will be able to attach their location and any pictures related to the incident.

4. Electronic Document Management System (EDMS - Land Management Division) A system that will allow users to access State Land files and related parcel information at the touch of a button. The Land Client module will allow the public to communicate electronically with the Land Management Division about their land related matters and consequently Ministry staff will be able to access and catalog the 100,000+ files within the Division.

**Does the initiative count with qualitative and quantitative indicators to demonstrate the impact? Please, indicate them:**

General Statistics: Webmap Applications have a total view count of over 4000 State land status search takes 5-20 days in the past and can now take 5 mins as past status searches are uploaded to the EGIS and land information is accessible through web maps. Accessing hardcopy files takes 2-3 days and can now take 5 mins once it has been scanned and uploaded to the Document Management System. Reports on example state land count and livestock farms previously required sifting through files to provide an estimate the EGIS provides reports within 10 minutes.

**Has the innovative experience also benefited other groups of populations, communities?**

The GIS has assisted the Central Statistical Office for Trinidad with nation-wide figures on different agricultural assets, example Apiculture. Additionally, the Ministry has assisted external sectors such as the Agricultural Development Bank in locating agricultural parcels of clients to be used as collateral for Agricultural Loans. Also assisting the Evolving Technologies and Enterprise Development Company Limited (e TecK) with decision making related to their clients for the industrial sector. Also the Ministry of Trade and Industry with assisting them to improve the ease of doing business by external investors to Trinidad and Caroni 1975 Ltd in handing over land assets to be managed by the Commissioner of State Land. There are various ways in which the Program has assisted and continues to assist the members of the public and external Agencies in their development.

**c. Replicability**

**Why is the innovative experience likely to be replicated by other institutions?**

The integration of GIS and Document Management, specifically in the Agricultural Sector is relatively new in the Caribbean. There are several programs that focus on data collection of farms but few extend to Fisheries, Forestry and Lands. Going a step further to include cultivation and pests and diseases. The system is scalable and built using international standard database configuration and development allowing for replication. The work processes with the system are fully documented and have been through years of trial and error. In addition to elements of automation where necessary to minimize errors.

**What key elements should be considered in order to replicate the experience in other institutions/countries?**

Design and Discovery This phase focuses on clearly defining, understanding and documenting the existing information about the business processes, environment and infrastructure to be able to develop and execute a detailed solution design and implementation strategy in the subsequent phases. The Design phase is where the information gathered in the Discovery is applied to specific equipment, software, and services to enable the Ministry to reach their desired ‘future state’ of a comprehensive electronic record of all State land files, continuous updates through client interactions and
general staff operations. The deliverable of this phase is a thorough, comprehensible Design document for review and approval. The blueprint of the system, record/document policies, document centre layout and work flow process. Ensure complete and accurate data input for all subsectors of the Ministry, to allow for better reporting and analysis.

Application enhancement of Mobile devices to improve field inspections by personnel in an effort to inventory all State land occupants, Ministry stakeholders, structures and commodities existing on the land; Contract geospatial technical services for building an integrated web-service portal, referencing all subsectors of the Ministry. Procure Geospatial training for staff for the operation of the new system, to ensure that the level of expertise is in tandem with technological advancements, upgrades and new applications related to the Ministry both in the field and office. Support and Maintenance

This includes monitoring and ensuring efficiency of project implementation. Preventative project maintenance should be employed, including routine inspections and team meetings; routine equipment servicing and checks, monitor possible system failures and enforce quick response by system suppliers. The Support phase involves transitioning the system support to the assigned Unit and Officers, resources as well as potential initiation of any number of support options, including maintenance, technical and education to enhance the solution and ensure maximum benefit is derived.

d. Efficiency

General Burdget of the Institution / Budget of the innovative experience. Has the entire budget been executed

The budget allocation is reliant on the related financial year of the Public Sector Investment Programme of Trinidad. Due to recent financial constraints the budget was reduced extensively. The amount allocated to the project has been utilised to cover human resource, hardware and software.

Overall number of the Institution’s personnel / Number of personnel working in the innovative experience:

The main Unit responsible if the Geographic Information Systems Unit which has a dedicated staff of twenty-one (21) persons and an additional seven (7) persons were hired on short-term basis to focus on scanning and data entry.

If you could give an opinion on the cost-benefit of the implementation of the innovative experience: would you say that it is positive or negative? Please, explain:

An EGIS system can deliver financial savings to the Ministry and is a positive innovative experience, especially related to potential cost-saving. There are several benefits of the overall program; optimization through vehicle routing or customer self-service via the web, de-duplication of activities or placing extension and support resources in the optimum location. Secondly, GIS can facilitate efficiency and effectiveness improvements. For example, the GIS Unit provides Pest, Disease and Incident Reports to provide real time data for existing Country Disease Status, Pest Movement through field reports and spatial location of pests, diseases an incidents reported. This means each patrol/extension/response team is much better informed about what has recently happened in their area, before going into the field. Also, crops can be saved and by extension awareness of potential areas for crop damage can be minimized, preventing loss of money through decreased production. Thirdly, the system can provide environmental performance improvements. Response to Forest Fires can be based on previous patterns, taking into account multiple variables, such as prevailing wind speed and direction, to the provide grids of hotspot locations and optimize response and early warning systems. With the current economic climate, GIS can do much to improve the efficiency and effectiveness of both the public and private sector, saving money, improving service delivery and reducing environmental impact. The main economic benefit cannot be
quantified as it entails increase in client interactions and most importantly an elimination of incidents of file misplacement and loss. In addition to supplying related Ministries with vital information in a more efficient and faster manner, that would include a more holistic picture of State land in Trinidad and Tobago and not just specific area focus due to lack of staff and a documents system.

e. Sustainability of the experience

To facilitate the implementation of the experience, did the institution develop coordination mechanisms/strategies with other institutions?

The project is founded on the National Developmental Pillars and is an approved three (3) year Public Sector Investment Programme 2018 Trinidad (with a possible additional 3 years). Thus the project is scrutinised by other Ministry’s such as the Ministry of Planning and Development and the Ministry of Finance.

Is there a legal provision that makes the implementation compulsory?

The Ministry has sought Cabinet approval and steps to create formal Record and Geospatial policies to guide the program and ensure longevity.

Has the political administration of the institution changed during the implementation of the experience?

In the first year of inception there was a change in political administration which did not affect the progress of the project.

Number of years covered by the Budget (Please, specify if 1, 5, 10 years) and its origin (Public or private)

Three (3) year Public Sector Investment Programme 2018 Trinidad (public)

f. Gender and Rights approach

Does the initiative consider and apply gender perspective and the principles of Equality & No Discrimination? In what stage (design, implementation, etc)

The program has a diverse team and support staff inclusive of several genders and races. The program is geared towards the benefit of the general public.

Is there a coordination mechanism/strategy in place with the guiding institution on women’s development of your country?

Not specific to this program

Does the initiative have an explicit/institutionalized strategy on affirmative action and/or positive discrimination, considering variables on gender, different abilities and socio-economic level, among others?

Not specific to this program

How many men and women work on the initiative? What is the % of men and women that hold high-level positions in the initiative? Is there a selection or hiring mechanism, such as quotas?

The main Unit responsible for project execution is the GIS Unit. Inclusive of long term and short term staff there are five (5) senior members of Staff, two (2) of which are female and includes the Unit Manager. Junior staff include fourteen (14) females and nine
(9) male officers. The hiring mechanism is based on the Ministry’s Human Resource protocols of advertisement and selection of the best candidates based on a combination of academic qualifications and experiences.

g. Citizen Participation

Is there an institutionalized and permanent space that promotes the citizen participation? Please, explain:

The National Development Strategy of the Country related to this program is the Developmental Theme/Pillar, 'Delivering Good Governance and Service Excellence' which is key to open government strategies. The Development Themes of the government represent the long-term perspective or outcomes envisioned for the country to the year 2030. In addition, the Theme highlighted in this project other commitments extend to 'Putting People First: Nurturing Our Greatest Asset' facilitating the institutionalized and permanent space that promotes the citizen participation. Each program implemented is guided by these overarching themes and has to ensure sustainable objectives and goals.

What is the level of citizen participation in decision-making?

With the aim of achieving Developmental Themes/Pillars of the nation this specific program has involved the public since inception with a collaborative Needs Assessment and extensive stakeholder meetings prior to project implementation. The program entails public involvement through collaborative data collection exercises and data analysis before final reporting. One of the outcomes entail a ‘Land Client’ which is the final step in allowing public access to the online Land Information System.

Please, indicate quantitative and qualitative indicators and mechanisms used to promote the citizen participation during different stages of the innovative experience:

The transaction element is geared towards the public therefore access to web map applications are monitored through system access statistics in the evaluation and monitoring stage. The 'Land Client' empowers citizens to update their own digital client and identify any issues or corrections required.

### Annexes

Annex 1:

Annex 2:

Annex 3:

### Participants Statement

The applying institution, on behalf of its legal representative, declares that:

1. Has read the Application Basis of the "Inter-American Award on Innovation for Effective Public Management - 2018" and agrees to its scope.
2. All the information contained in the application form is true and verifiable and the applicant is entirely responsible for it.
3. It agrees to provide the OAS Department for Effective Public Management (DEPM)
any additional information that may be requested during the assessment process.
4. It has not, nor had, any link neither to the members of the Jury nor to any officer in the DEPM.
5. The OAS DEPM is authorized to publish the experience presented, as well as the results of the selection process.

<table>
<thead>
<tr>
<th>Name of the Legal Representative:</th>
<th>Ms. Lydia Jacobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position:</td>
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<td>E-mail:</td>
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<tr>
<th>Name of the Contact person:</th>
<th>Farie Hosein</th>
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<tr>
<td>Position:</td>
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</table>

I have read and accept the terms and conditions previously described for the Inter-American Award on Innovation for Effective Public Management - 2018: Yes