



**Interim Report on the  
Code-for-the-Caribbean Fellowship Engagement  
*with*  
The Rural Agriculture Development Authority (RADA)**

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## Project Summary

Mona School of Business & Management (MSBM), Caribbean Open Institute (COI) and the SlashRoots Foundation will partner with the Rural Agricultural Development Authority (RADA) of the Ministry of Agriculture to provide a team of 3 technologists (2 developers and 1 designer) that will be embedded in RADA for a 6-month fellowship and will work with them to explore Information and Communication Technology (ICT) enabled innovations to support the enhanced delivery of Agricultural Extension services to farmers across Jamaica.

The project extends the continuing Open Data in Agriculture initiative and will help RADA to leverage its existing Data assets and ICT Infrastructure as enablers of its strategic objectives of (a) promoting agriculture as a viable business option that can be enhanced through technology and innovation; (b) demonstrating a management commitment to increase its use of ICTs as the enabler to providing more efficient and higher quality extension services; and (c) increasing the build out of its ICT infrastructure and internal development capacity in application/technology design;

The project will also serve as a pilot for a broader regional initiative called Code For The Caribbean (CftC) that seeks to partner with forward-thinking government agencies, such as RADA, to adopt more agile, open and participatory approaches to exploiting the use of ICT's in public service delivery.

**The project is scheduled to last 6 months and will use Open data as a platform for the design and development of a portfolio of innovative mobile and web Apps targeting praedial larceny as well as supporting agricultural production planning & tracking. The project will provide a real-world laboratory to refine and validate the Code for the Caribbean model and related processes of Public-Private sector innovation engagement**

## Agency Programme Objectives

(a) promoting agriculture as a viable business option that can be enhanced through technology and innovation;

(b) demonstrating a management commitment to increase its use of ICTs as the enabler to providing more efficient and higher quality extension services; and

(c) increasing the build out of its ICT infrastructure and internal development capacity in application/technology design;

## Code for the Caribbean Programme Objectives

- partner with forward-thinking government agencies, such as RADA, to adopt more agile, open and participatory approaches to exploiting the use of ICT's in public service delivery
- use Open data as a platform for the design and development of a portfolio of innovative mobile and web Apps targeting praedial larceny as well as supporting agricultural production planning & tracking
- provide a real-world laboratory to refine and validate the Code for the Caribbean model and related processes of Public-Private sector innovation engagement

## Main Project Activities and Milestones

Milestone/Activity	Date	Outcomes/Deliverables
<b>MOU Completed</b>	April 30 <sup>th</sup> , 2012	<ul style="list-style-type: none"> <li>• Signed MOU</li> <li>• Public Event</li> <li>• MOU signed on June 21st</li> </ul>
<b>Recruitment of Fellows for 2013 Program</b>	May 1 <sup>st</sup> - May 24 <sup>th</sup> , 2013	<ul style="list-style-type: none"> <li>• Fellows Recruited at end of June</li> <li>• Contracts signed in 1st week of July</li> </ul>
<b>Fellowship Program Begins</b>	July 15 <sup>th</sup> 2013	<ul style="list-style-type: none"> <li>• Program started</li> </ul>
<b>Fellowship Training</b>	July 15 <sup>th</sup> - August 2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>• Developing Fellows Skillsets</li> <li>• Introduction to critical issues problems and approaches in Civic Technology</li> <li>• Development of a Fellowship training Curriculum</li> <li>• Documented assessment of fellows skillsets</li> </ul>

<b>RADA Residency/embedding</b>	August 5 <sup>th</sup> – September 6 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Understanding the problem space and the organizations and partners.</li> <li>• Using Design research principles</li> <li>• 2 day visit and research at Denbigh Agricultural show in Clarendon</li> <li>• Community Visits to the Parishes of Manchester, St.Thomas, St.Catherine</li> </ul>
Synthesis Workshop	October 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Presentation to RADA on the results of community and institutional interviews</li> <li>• Presenting and discussing a range of prototypes to be developed based on understanding of the problem space</li> </ul>
Prototyping and testing	September - November 2013	Developing applications/solutions based on Agreement with RADA
Demonstration Day	November 2013	Presentation of applications/solutions to RADA and stakeholders
Wrap-Up and Hand Off	November - December 2013	End of Programme

## Fellows Recruitment

28 applications were received for the Code for the Caribbean Fellowship. The Fellowship Programme was advertised over the period of a month. The programme sought to attract individuals who were interested in applying their technology skills to social problems and government service delivery challenges. We anticipated that the programme would offer both experienced and slightly less experienced designers and developers the opportunity to work in the emerging field of civic technology, improve their scope and provide valuable development and design experience. The Fellowship demanded that individuals would commit to a full-time engagement with the programme accompanied by a moderate stipend/compensation over the duration of 6 months.

From the 28 applicants, 3 were selected over a two week period. We used a metric to shortlist candidates who were then interviewed by a panel of 4 persons who would be involved in the programme.

## Insights from the Fellowship Recruitment

The number of applications received indicates interest in this area of work. Our conversations during interviews proved that it was important to engage with the technology community in Jamaica through workshops, presentations, code-sprints or hackatons to prepare them to take advantage of this and similar opportunities in the field.

Attention needs to be paid to the following process in the future

- Allowing enough time for the local developers and designers to learn about the fellowship programme
- Advertise the Programme widely to ensure maximum reach
- Many designers and developers are in full- time jobs or freelance. The availability of very good designers for a full time commitment such as a fellowship is an important consideration.

## The Fellowship Training Programme

The first three weeks of the Fellowship was dedicated to training. The training was geared towards equipping the fellows with the skills and context to be effective at achieving the Code for the Caribbean programme goals. Additionally we hoped to introduce Fellows to key ideas in Design, development , ICT4D, Civic Technology, Open Data and the Agricultural landscape in Jamaica. There was also an extended emphasis on equipping the fellows with skills in design research. Design research formed a core part of the approach that they would adopt and apply throughout the fellowship.

The Fellows had the opportunity to engage with a range of speakers from diverse backgrounds.

The following Topics were covered in training

- **Civic Technology**
- **Agile Development**
- **User Experience Design**
- **Design Research**
- **Open Data and Caribbean Governance**

One on One Technical Workshops

- **Python**
- **Web2Py**
- **Django**
- **Webapp 2**
- **SCRUM**
- **HTML/CSS**

## Insights from the Fellowship Training Period

Providing the context and background is very important to this programme. Since most designers and developers have not worked in the Civic Technology space before or applied their skills to helping government adopt innovative technology based solutions. That proved most effective was combining technical training with presentation, conversation, engagement with domain experts.

## RADA Engagement and Embedding

The fellows work closely with the Government Partner, The Rural Agricultural Development Authority (RADA). During the second week of training the fellows were introduced to the team at RADA. This was an initial engagement and team meeting which allowed for more understanding of the organizational structure, main stakeholders and some of the issues that affected service delivery and innovation. The fellows work in partnership with the IT team at RADA.

During the embedding period fellows spend time doing interviews and field research in an effort to improve their understanding of the problem space.

The first key opportunity was the visit to the Denbigh Agricultural show in Clarendon. The Denbigh Agricultural show is hosted by one of the main stakeholders The Jamaican Agricultural Society (JAS). The Agricultural show which is hosted over 3 days, brings together the Jamaican farming community. Each parish is represented at the show as well as individuals and organizations working in agriculture and agricultural innovation in Jamaica. The fellows met, interviewed and observed a diverse group of agricultural stakeholders at Denbigh; senior administrators at RADA, Ministry of Agriculture, JAS, Farmers, RADA Parish Managers and Extension officers as well as the Police working in Praedial Larceny. Subsequent to this, fellows visited farming communities in 3 Parishes over two weeks.

## Insights from RADA Engagement and Embedding

The location of the Fellows is useful in providing insight which can help the organization to understand and to learn to address the challenges of innovation. Fellows enjoy trust between RADA and Ministry officials as well as Farmers and Police Officers. This means they are able to hear both sides objectively. During the embedding stage the fellows have been able to gather from the observations and questions some of the challenges in the key relationships that are necessary to address praedial larceny, ensure effective service delivery to Farmers by RADA and innovation through technology.

### **Some of the main challenges for RADA has been**

- Farmers may not be willing to participate because:
  - They don't see immediate gain from participating in a RADA program
  - They misunderstand RADA's mandate
  - They are hesitant to register with government or provide accurate information for fear of being taxed
  - Communities traditionally have distrusted RADA, and mistrust is often difficult to overcome
- RADA officials may be resistant far-reaching change given civil service environment often breeds complacency
- RADA extension workers have limited ability to meet with farmers, thus RADA may have limited understanding of farmers

### **There are also several key opportunities for improved service delivery and innovation towards a reduction in praedial larceny which we have been able to gather from the process of engagement with RADA:**

- RADA has existing comfort with opening up their database
- RADA's IT team are willing to try a new method of thinking
- RADA has public pressure to demonstrate results
- RADA may now be more willing to engage with communities, given a) the recent public outcry of dissatisfaction with the RADA, and b) farmers' perceived misconceptions over what RADA does
- Current economic situation may mean farmers have greater willingness to try a solution proffered by RADA

The embedding and engagement has demonstrated that the fellowship can help RADA listen to and better serve farmers, using praedial larceny as first example to illustrate the value of engaging with diverse stakeholders (e.g. farmers, other agriculture sector actors) in tackling issues. Also it can help RADA to identify and solve problems in innovative ways, potentially through changes in culture and process.

## **Design Research**

Applying the principles of design is a critical component and methodology used in the fellowship. The Design research is based on the application of the qualitative research methods based on ethnography. Using Design research fellows are attempting to learn about and interpret people's needs, motivations and aspirations, and how they impact their behaviour. The objective is essentially to arrive at a solution or design that incorporates users needs and takes account of the context in which the solution will be used.

The Design research phase involved visits to farming communities and talking to local

stakeholders as well as institutional partners. The interviewing and observing is followed by a careful process of analyzing and synthesizing the data gathered looking for patterns and connections in the information collected. This process has been ongoing and a total of 42 persons have been interviewed. During a six week period from August to September a majority of interviews were done with institutional and community stakeholders in 3 parishes across 4 organizations.

## Research/Field Work

3 parishes were visited Manchester, St.Thomas, and St.Catherine. The fellows spent 2 days in each parish talking to stakeholders and visiting farms with the assistance of extension officers from RADA.

The 3 communities selected were suggested by the Project Steering Committee based on information provided by the Ministry of Agriculture on areas of extreme praedial larceny, (St.Catherine); percentage contribution to national agricultural output (Manchester); and areas where improvements have been made in addressing praedial larceny (St.Thomas).

The 4 organizations include JAS, Ministry of Agriculture, the Praedial Larceny prevention Unit, RADA and the JCF.

The main method of investigation were Interviews and observations. Interviews were conducted to gather comprehensive views on respondents': institution roles; interaction internally and externally - i.e. with extension officers and/or farmers; actions and thoughts towards the Praedial Larceny issue; and past experiences with participating in new initiatives with RADA.

The following were groups of persons who were interviewed in the communities and institutions;

- Small farmers
  - Livestock
  - Produce
- Large farmers
  - Livestock
  - Produce
  - Thieves
- Regular residents
- Neighborhood Watch / Community Org
- Agricultural Groups (org'd by RADA/JAS)
- Respected Elders
- Vendors
- Regular vendors

## Institutional Perspectives

Jamaica Agriculture Society (JAS)

RADA

Extension Staff

- Manager
- Officer
- Assistant Officer
- I.T. Dept

Ministry of Agriculture

- Leadership
- Praedial Larceny Prevention Unit
- Police officers

**The following table provides a details of respondents who were interviewed by the fellows**

Parish	Gender	Employment	Profession
<b>St.Catherine</b>			
	Female	Farmer	Farmer/Volunteer
	Male	Farmer	Farmer
	MALE	RADA	Extension Officer
	MALE	FARMER	Greenhouse
	MALE	FARMER	FARMER
	Male	Farmer	Pepper,Ginger & Sorrel
	Female	RADA	Extension Officer
	Male	Farm Manager	Trade Winds
	Male	Farmer	Chicken, Pepper
	Male	RADA	Extension Officer
	Male	Farmer	Pepper, Ginger & Sorrel
	Female	RADA	Extension Officer
<b>Kingston</b>			
Kingston	MALE	MoAF	-
	Male	MoAF	JAMMIS R.O.
	Female	JAS	Field Service Officer
	MALE	RADA	ICT Dept.
	Female	JAS	Field Service Officer
	Male	RADA	Web Progammer
	Female	JAS	P.R.O

	Male	RADA	ABIS Project Manager
	Male	Retired	Fr. President of
	Male	RADA	Extension Officer
	Female	RADA	Extension Officer
<b>Manchester</b>			
	Male	Farmer	Farmer
	Female	Farmer	
	Male	RADA	Extension Officer
	Male	Farmer	Lettuce
	Male	Farmer Group	President,
	Male	Farmer	Yam
	Female	RADA	Extension Officer
	Male	Farmer	Business man/Greenhouse farmer
<b>St.Thomas</b>			
	Male	Farmer	Cabbage
	Male	Farmer	Pepper & Tomatoes
	Male	JCF	Island Special Constable/Special Corporal
	Male	RADA	Marketing Extension Officer
	Male	RADA	Land Husbandry Officer
	Male	RADA	Parish Manager
	Male	Farmer	Farmer
	Male	Operations Manager	Operations Manager @ Serge Island
	MALE	Caretaker	Caretaker
	MALE	Caretaker	Caretaker
	FEMALE	Farmer	Farmers wife
<b>St. Elizabeth</b>			
	Male	Farmer	Farmer of Watermelons Pineapple
	MALE	FARMER	WATERMELON FARMER
<b>St. Mary</b>	MALE	RADA	LAND HUSBANDRY

## Synthesis

Fellows engaged in synthesis, organizing the notes from interviews and visits in various ways in order to spot patterns and gain deeper insight. The Synthesis stages aims to define the problem experienced by the various groups of users. After each community visit and interview fellows return to the office share notes. Information, ideas and respondent categories are colour coded on post-it notes.

For example:

### **Yellow: Observation or Quote**

- › A single piece of data that is based on what the respondent said, or what you observed.
- › Supported by the Location, Date, and Interview Number where the Observation originated.

### **Pink: Patterns**

- › A larger trend or pattern that is currently taking place in the community and/or society.
- › supported by several Observations.

### **Blue: Insight**

- › analysis of the Respondent Statement or Field Observation.

### **Green: Design Suggestion**

- › A suggestion built on a combination of Insights and a Pattern.
- › supported by your own knowledge of the landscape.

## Emerging insights - Preliminary

- An actual benefit of registering as a farmer is getting technical training.
- There is a lack of clarity around benefits of registering as a farmer with RADA.
- There are “fake” farmers in ABIS who only registered to receive handouts
- Thieves are normally from the same community as farmers
- Police catch thieves but no one then identifies the culprit
- Waiting time to receive a farmer ID varies from months to years
- Updating records in ABIS is an issue
- Thieves have to be caught in the act to receive punishment or any form of penalty for Praedial Larceny.
- Mangoes are big business in St. Thomas and have been targeted by thieves as a result
- Farmers who live on their farm have fewer Praedial Larceny incidents
- Farmers keep dogs to secure their farm
- Thieves also register with RADA
- Farmers want to setup greenhouses
- Marketing for farmers is a big concern

- There are issues with RADA tablets: battery life, apps freezing, responsiveness to touch is not good, low quality of the hardware or brand in general
- Farmers are better off registering as a group to receive international or project based funding
- Extension Officers do not get a budget to conduct training
- Farmers steal from farmers
- There is more Praedial Larceny when things are in high demand. eg. meat at holiday time or expensive crops
- Not all farmers who have a receipt book use it
- Farmers typically become interested in agriculture from a young age, eg. at school, or by farmer parents
- Reporting to the police is a waste of time
- Many people tell us they have a receipt book
- All higglers (middle men) should be registered with the Parish Council
- Finding buyers for agricultural produce is a problem
- RADA tablets have spotty internet out in the field
- Thieves sell stolen goods cheaply to higglers and butchers
- The judicial system does not help farmers tackle Praedial Larceny
- Many RADA employees started working with the Ministry of Agriculture at a young age
- People steal to make money and not just because they want to eat the produce
- St. Thomas police have helped to tackle Praedial Larceny
- Extension Officers put CUG SIM card in personal feature phone as a preference
- RADA gives out fertilizer
- People register with RADA to avoid trouble with police

The following are a few of our early design recommendations:

1. An API to access both ABIS and JAMIS data (two local agricultural databases, one has crop production information and the other has agricultural price information).
2. An SMS application where police and abattoir (slaughterhouse) operators can text in a receipt number from anywhere and using tools that are already in their hands to receive a response with farmer info. This allows for the easy cross checking of information.
3. Mobile app for the E.O. tablets. This will be a mobile version of the ABIS database which can be used offline just as easily as online. Data is then synced with a central server when there is a strong internet signal.
4. A recommendation to also collect data on the trustworthiness of data sources in the field and also allow farmers to push their own data and farm information updates through distributed farmer groups which have a clearly identified group leader. This will help to strengthen the quality of data in ABIS by creating a weighted network of trusted farmers and also aid the E.Os. in data collection. This can be added as a feature of number 3 if there is also a push to encourage farmer groups and promote added benefits of being a part of a farmer group.