**ITU-FAO-DOA-TRCSL**

 **Training on**

**“Innovation & Application Development for E-agriculture”**

**11-15 December 2017**

**National Agriculture Information & Communication Centre**

**Department of Agriculture**

**Peradeniya, Sri Lanka**

**supported by**

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**Objectives**

ICTs play an important role in socio-economic development of a country through job creation and entrepreneurship. ICT based business can be a powerful tool for economic growth.

Keeping this importance in mind, ITU, TRCSL, Department of Agriculture and FAO initiated further training courses around “Innovation & Application Development for E-agriculture” in Peradeniya, Sri Lanka.

This training is the second training, after the first training which was carried out from 12-15 September, 2017 in Colombo, Sri Lanka.

The main objectives of the training course are to:

* A greater capability within the Department of Agriculture to innovate using emerging technologies;
* A greater ability to design, develop and deliver technology solutions to meet the development goals and challenges of the agriculture sector;
* Learn the processes and skills to design, develop and deliver a prototype application for Android devices
* Learn the processes and skills to design, develop and deliver a prototype web application using Ruby on Rails.

The training will consist of three components.

**Training 1**

1.5 days (approx. 30 participants)

Innovation and emerging technologies instruction

**Training 2**

1 day (approx. 20 participants)

Design, develop a simple Ruby on Rails application

**Training 3**

3 days (approx. 20 participants)

Design, develop and deliver a prototype application for Android devices

**Target Audience**

**Training 1**

This training is for a general audience of Department of Agriculture employees.

**Training 2 & Training 3**

This training is designed for a technical audience who have experience with designing and developing software.

**Medium of Instruction**

English

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Training on “Innovation & Application Development for E-agriculture”**

**11-15 December 2017, Peradeniya, Sri Lanka**

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**AGENDA**

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| 11th Dec, 2017– Day 1 |
| 08:30 – 09:00 | **Registration** |
| 09:00 – 09:30 | **Opening Ceremony*** Opening Remarks
	+ Mr. Sameer Sharma, Senior Advisor, ITU Regional Office Asia- Pacific
	+ Dr. D.B.T. Wijeratne, Assistant FAO Representative (Programme)
	+ Welcome Remarks: Director General, Department of Agriculture
	+ Welcome Remarks: Director General, TRCSL
 |
| 09:30 – 10:30 | Keynote AddressICT Trends, Innovation and Entrepreneurship  | Mr. Sameer Sharma, Senior Advisor, ITU  |
| 10:30 - 11:00 | **Morning Break** |
| 11:00 –12:30 | **Business Optimization in Agriculture using ICTs*** Challenges and Opportunities for agro-businesses
* Use of ICTs in agro-business Examples
* Programs available for incubation of small agro- businesses in Sri Lanka
* Promotion, marketing and branding
* Increasing Exports and access to International markets
* Activity related to creating an online store using Shopify
 | Mr Shahryar Khan |
| 12:30 – 13:30 | **Lunch Break** |
| 13:30 – 15:00 | **Innovation in the workplace*** What is a culture of innovation?
* Supporting and encouraging a culture of innovation in your workplace
	+ Hackathons, Hack days, other activities
	+ Education and training
	+ Leadership support
	+ Skunkworks
	+ Idea capture
 | Mr. Peter Argent  |
| 15:00 – 15:30 | **Afternoon Break** |
| 15:30 – 17:00 | **Social impact of improving innovation in:*** Agriculture
* Education
* Health
* Disaster management
* Ecommerce
* Banking
 | Mr. Sameer Sharma / Mr. Shahryar Khan /Mr. Peter Argent |

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| 12th Dec 2017 – Day 2 |
| 09:00 – 10:30 | **ICT enabled/based applications for business*** Android and iOS applications
* Challenges and opportunities for start-ups
* Technical skills required to develop apps
 | Mr. Shahryar Khan |
| 10:30 - 11:00 | **Morning Break** |
| 11:00 – 11:30 | **Leveraging Emerging Technologies for E-agriculture*** Demystifying emerging technology
* Leveraging Open Source tools and frameworks
* Case studies of communities using future tech to solve challenges for the Agriculture sector
 | Mr. Peter Argent |
| 11:30 – 12:30 | **Lean Startup Design Processes*** Define the problem to be solved
* Propose a solution
* Human Centred Design
* User Experience Design
* Personas
* Business Model Canvas

Activity: In teams, propose a high tech solution to a challenge faced by Department of Agriculture | Mr. Peter Argent |
| 12:30 – 13:30 | **Lunch Break** |
| 13:30 – 15:00 | **Developing Business Requirement and System** Requirements Document (Case Study from DoA) | Mr. Shahryar Khan |
| 15:00 – 15:30 | **Afternoon Break** |
| 15:30 – 17:00 | **Developing Business Requirement and System** Requirements Document (Case Study from DoA) | Mr. Shahryar Khan |

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| 13th Dec, 2017– Day 3 |
| 09:00 – 1030 | **Introduction to web application development with Ruby on Rails*** Ruby on Rails intro & demonstration
* Development environment setup
* Rails MVC
* Open source tools
* Deployment options
 | Mr. Peter Argent |
| 10:30 - 11:00 | **Morning Break** |
| 11:00 –12:30 | **Create the basic application*** Basic Rails commands
* Rails project tour
* Theme with Bootstrap
* Static pages
 | Mr. Peter Argent |
| 12:30 - 13:30 | **Lunch Break** |
| 13:30 –15:00 | * Authentication with Devise
* Authorization with Rolify, Cancan
* Other gems
 | Mr. Peter Argent |
| 15:30 – 16:00 | **Afternoon Break** |
| 16:00 – 17:30 | **Create CRUD functionality*** Add data structures and CRUD functionality
* Modify Model, Views and Controllers for desired functionality
 | Mr. Peter Argent |

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| 14th Dec, 2017– Day 4 |
| 09:00 – 1030 | **Introduction to Mobile app development** | Mr. Shahryar KhanMr. Sameer Sharma |
| 10:30 - 11:00 | **Morning Break** |
| 11:00 –12:30 | **Introduction to Android platform and android development environment*** Overview of android platform
* Understanding its development environment

Creating a “Hello World” program  | Mr. Shahryar KhanMr. Imran Tanvir |
| 12:30 - 13:30 | **Lunch Break** |
| 13:30 –15:00 | **The basics** * Application fundamentals

The activity class | Mr. Shahryar KhanMr. Imran Tanvir |
| 15:30 – 16:00 | **Afternoon Break** |
| 16:00 – 17:30 | * Developer classes
* The intent class
* Navigation and Tab bar
 | Mr. Shahryar KhanMr. Imran Tanvir |

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| 15th Dec, 2017– Day 5 |
| 09:00 – 1030 | **List Views and Fragment Classes** | Mr. Shahryar KhanMr. Imran Tanvir |
| 10:30 - 11:00 | **Morning Break** |
| 11:00 –12:30 | * User interface class
* Text fields, Buttons and Labels
 | Mr. Shahryar KhanMr. Imran Tanvir |
| 12:30 - 13:30 | **Lunch Break** |
| 13:30 –15:00 | **User Interface Classes** * Map Views
* Image Picker
* Web View
* Data Persistence
 | Mr. Shahryar KhanMr. Imran Tanvir  |
| 15:30 – 16:00 | **Afternoon Break** |
| 16:00 – 17:30 | **Concluding Session** |  |