

# TERMS OF REFERENCE FOR AGRONET APPLICATION DEVELOPMENT

## BACKGROUND

Agro National Corporation Ltd (AgroNat) is a subsidiary company of the government owned Maldives Fund Management Company (MFMC) established on 21st April 2020 with an overall mandate of developing agriculture as an economically rewarding industry in the Maldives. The Corporation will work towards enforcing objectives such as enabling an efficient supply-chain for agriculture, providing technical expertise and training to farmers, creating awareness on organic farming expanding the role of women in farming, and facilitating access to quality fertilizers across islands. The company will also aim to achieve economic targets relating to food security, import substitution, creation of jobs and improving the trade balance.

The Maldivian Government in its Strategic Action Plan devised for 2019 – 2023, had proposed to establish a dedicated State-Owned Enterprise for Agricultural Development, with an objective of revitalizing the agriculture sector as per the Blue Economy vision. Despite being an integral part of Maldivian society for ages, the agriculture sector has remained under-developed and unexposed to modern developments in farming techniques and technology. The government under its agenda for economic diversification aims to promote agriculture as a meaningful sector in the Maldivian economy.

AgroNat aims to expedite an efficient supply-chain for local agricultural products that will enable farmers to collect a fair price for their produce. Hence, the company will be purchasing locally produced fruits and vegetables from farmers and re-selling the produce to wholesale buyers. In the intermediate term, the corporation aims to work towards an import substitution policy that will reduce imports of certain locally produced crops by 50%. In the long-run, the corporation aims to pursue strategies for food security and self-sufficiency that boosts local production, facilitates value-addition in the agriculture sector, and explore overseas markets for local agricultural exports.

The *Sustainable Economic Empowerment and Development for SMEs (SEEDS)* project, with financial support of the Government of Japan, aims to provide economic rehabilitation in order to mitigate the negative impacts of the COVID-19 crisis in the Maldives. The project has the objective of increasing agriculture production and promoting food security through an approach of building entrepreneurship amongst farmers and creating a new generation of agri-businesses that are innovative, productive and practices environment-friendly agriculture. The project will also provide technical support and capacity to the Government of Maldives to conduct support services for MSMEs to adapt to the “new normal”.

The project will be implemented through partnership with the United Nations Development Programme (UNDP) in Maldives, the Ministry of Economic Development, Ministry of Fisheries, Marine Resources and Agriculture (MoFMRA), Agro National Corporation (AgroNat), Maldives Fund Management Corporation (MFMC), the Business Center Corporation (BCC) and Housing Development Corporation (HDC).

## OBJECTIVES

The objective of the project is to create a mechanism to inform stakeholders regarding AgroNat operations in the form of a corporate website. The project also aims to create an application that can be accessed by farmers, suppliers, trainers, transport providers, customers, and staff of AgroNat.

## SCOPE OF THE WORK

AgroNat is looking to hire a firm or team of individuals with relevant skills and experience to create a website, a web application, and a mobile application.

Website will be the corporate website of AgroNat.

Applications: webapp and mobile app, hereafter referred to as **AgroNet Application**. The application allows farmers to optimize and manage farm operations and production activities. Including building an efficient supplier chain management which includes stakeholders of AgroNat such as farmers, suppliers, customers, central and regional hubs, transport providers and trainers. The AgroNat application will help in automating farm activities such as record management, data storage, real-time crop monitoring, tracking field data and weather conditions, rainfall records as well as streamlining production and work schedules until crops dispatch. Customers can place and track orders. Suppliers can offer products and services. Training service providers can use the application to provide trainings. Transport providers can manage its logistic activities within the system.

The AgroNat application will be structured and designed to provide easy access and navigation to data and records in real time. The application will technically be a portal to be accessible by farmers, suppliers, buyers/customers, transport service providers, trainers, consolidation centre and internal users.

The corporate website will be a general corporate styled website for public access that will include news, information, and resources. The website should be bilingual (Dhivehi and English), with a content management system incorporated with backend access for various users.

## TECHNICAL REQUIREMENTS

### Common functionalities of AgroNat application

1. Able to access over the internet and on mobile devices of various screen sizes
2. Able to function on low connectivity or bandwidth
3. Use a common database for both
4. Cloud data backup solution
5. Two-factor authentication for external users
6. Basic reports for administrative staff of AgroNat
7. Report dashboard for top management
8. Secured using HTTPS and relevant certificates.

9. Website language switching - Dhivehi (default) and English
10. Notification generation.

## **Functional specification of Website**

### **Website structure**

1. Home
  - a. About
  - b. Structure
2. News
  - a. Announcements
  - b. Circular
  - c. Gallery
  - d. Agro Blog
  - e. Agro news (local and International)
3. Resources
  - a. Tender
  - b. Reports
  - c. Projects
  - d. Jobs
  - e. Download
  - f. Registration
4. Contact

### **Features of website**

1. User friendly content management system
  - a. Web publishing by internal users
  - b. Various parts of the website can be handled by different users
2. Social media integration
  - a. Display of Twitter messages in home page
  - b. Social media links in footer
3. Gallery with image and multimedia capabilities
  - a. Able to add and upload multimedia assets
  - b. Able to link YouTube videos within website
4. Calendar
  - a. Corporate calendar
  - b. Training calendar
5. Website wide text search function

### **Webapp and Mobile app functionalities**

#### **General features**

1. Webapp (Desktop application), Android and iOS app (Mobile App)
2. Corporate website (Dhivehi and English)

3. Notification with email and SMS capability
4. Notification in mobile app
5. Adaptive to various mobile devices
6. GPS tracking
7. Data (photo, video, and documents) upload and download capability
8. Own account management (with finance related reporting) for farmers, suppliers, transport providers and buyers)
9. Each user should have access to reports based on transactions (with export features)
10. Dashboard reporting for the top management.

### **Functional specification of AgroNat application**

The application consists of modules that will be used by internal and external users of AgroNat. Modules of the application is as follows:

#### **1. AgroNat user**

The module will be used to maintain the harvest demand and supply estimates. The total input to support the demand and supply estimates will be done based on the location and timing of productions. Land availability will be maintained with product types and its level of output. Transactions of several types not limited to payments, delivery and pending tasks should be able to maintain.

Stock management features such as buffer stock management, input supplies and harvest estimates based on advance orders and production backlog needs to be available for planning and decision purposes.

The module should monitor the farming process by encompassing interaction from farmers. The output quantity, quality, and timing of production needs to be estimated for effective management of productions.

#### **2. Farmer**

Farmer module will be used by farmers who registered with AgroNat. They need to enter data related to land availability with the type of produce that is grown, including the duration of harvest, and estimated output production. Real-time tracking of the production will be shared with Agronomist to determine the health condition of the farm and provide advice for improvement within the application.

#### **3. Supplier**

Input and output suppliers will use this module to list their products with lead time and price estimates. Orders to the suppliers will be made using this module. All business transactions will be managed and maintained with reports.

#### **4. Customer**

The module will enable customers to buy products online and request for products. Delivery status of customer shipment will be updated whenever any status is changed. All customer related business transactions will be managed and maintained with reports.

#### **5. Transport**

Transport service providers can use this module to register vessels, routes, and their service costs. Shipment will be tracked as is it moved from port to port. All service-related transactions will be managed and maintained with reports.

#### **6. Hubs/Consolidated centre**

The consolidated centres will act as distribution centres. Here the module will be used to update shipment status such as tracking, receiving, and dispatching. Other logistic related process will be carried out using the module. Transactions will be managed and maintained with reporting facility.

#### **7. Trainers**

Internal and external trainers will use the module to add resources, schedule trainings and conduct on demand training sessions. Calendaring of training activities will be available here.

#### **8. Admin**

The overall administration of the application will be handled by the Admin module. Here user creation with access rights and roles assignment can be performed. Application usage including statistics, logs and other application-wide settings will be placed.

## **REQUIRED OUTPUT**

Secured applications with a modern look (using design elements that enhances user experience) that can run using mobile internet even with low bandwidth.

AgroNat will provide necessary input and will confirm the design and functional features of the development in close collaboration with the service provider.

Fully documented application source code (GitHub is preferred) must be delivered with technical training to internal technical staff.

Staff training needs to be conducted before the rollout of each deliverable.

The service provider must provide onsite and remote support for a period of one (1) year from the date of final project end date.

Full system wide functionality testing must be done before rolling out of each deliverable.

Proper project management methodology should be applied to manage the project.

## **DELIVERABLES**

The sequence of major project deliverables should be as follows:

1. Full requirement study
2. Design and technical acceptance
3. Develop corporate website
4. Website UAT and deploy
5. User website training
6. Develop Webapp and Mobile app
7. Webapp and Mobile app UAT and deploy
8. User webapp and mobile app training
9. Complete project documentation and code transfer.

**PAYMENT SCHEDULE**

Based on the progress of the tasks, payments will be released as per the following schedule.

<b>Payments</b>	<b>Deliverable</b>
25% of the total	Completion of 1 and 2
15% of the total	Completion of 3, 4 and 5
40% of the total	Completion of 6, 7 and 8
20% of the total	Completion of 9 all remaining tasks

**EXPERTISE REQUIRED**

The development team shall consist of expertise on:

- Website development
- Mobile app development
- Data management
- Data analytics and visualization
- Business knowledge of business operations
- Secure development practice.

**DURATION OF THE PROJECT**

The duration of the project is expected to be Six (6) months, from the commencement of the work.

**INTELLECTUAL PROPERTY**

The service provider must agree clearly that all elements of the works offered are truly original creations of the firm or team. Any intellectual property violation, misuse, or plagiarism of someone’s work in any form or state that result in possible termination of the contract. AgroNat will not bear any responsibility for the service provider’s illegal or inappropriate use of copyrighted material and the service provider agrees to bear full responsibility for such occurrences.  
All the developed products within this project will remain as the sole property of AgroNat.

**PROJECT MANAGEMENT**

The service provider shall report all the progress and communication to the assigned project personnel selected by AgroNat.

Progress reporting and reviews should be made as per agreed timings and conditions.

## CONFIDENTIALITY MANAGEMENT

All the information used, shared, or communicated for this project is considered as confidential and if required a separate nondisclosure agreement can be introduced.

## SELECTION CRITERIA

Specific experience of the Consultant (as a firm) relevant to the Assignment:

- The experience of the firm in developing websites, mobile apps, databases, or similar projects (10 pts each projects) – 100 Marks

**The firm or team should consist of the following key personnel:**

Team Leader – 40 Marks

- Masters in Information Technology, Computer Application or other relevant field with knowledge of software development – 10 Marks
- Over 10 year's professional experience in Software Development or Information Technology – 10 Marks
- Task specific experience in MIS Application/ Software including mobile app development – 5 Marks
- Professional certification in Database Administration such as MySQL or Oracle DBA certification – 5 Marks
- Professional certification in Application development such as Microsoft Certified Solutions Developer – 5 Marks
- Priority will be given to candidates with professional certification and experience with similar application development projects – 5 Marks

Co Team Leader – 30 Marks

- Undergraduate degrees in computer science with software development – 15 Marks
- Must have professional work experience of at least five (05) years with minimum three (03) years' experience in creating and managing websites, webapps and mobile apps – 10 Marks
- Previous experience working on similar projects will be an added advantage – 5 Marks

UI/UX Designer – 30 Marks

- Undergraduate degrees in graphic design, web design or user Interface design – 15 Marks
- Must have professional work experience of at least five (05) years with minimum three (03) years' experience in designing websites, webapps and mobile apps – 10 Marks
- Previous experience working on similar projects will be an added advantage – 5 Marks

Technical criteria for evaluation.

<b>Criteria</b>	<b>Marks allocation</b>
Company profile / experience	25 %
Team proposed for the project	55 %
Price	20%

- Min 50 marks is needed from company profile/experience and team proposed for the project.

## **SERVICE APPLICATION**

The firm or team shall submit a proposal for the project including these documents:

- Letter of expression of interest
- Company profile with registration
- CVs of the team members and identify the team leader
- Work portfolio / evidence of previous work
- Past work experiences reference
- Proposed price.

Interested candidates may submit their proposals on or before the time provided in the advertisement to the following address:

Agro National Corporation Limited  
8B, H. Orchid, Ameer Ahmed Magu, Malé, 20095  
Republic of Maldives  
Email: [info@agronational.mv](mailto:info@agronational.mv)