



# KERALA AGRICULTURAL UNIVERSITY

## COLLEGE OF AGRICULTURE

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No.GL/B1/5834/2022

Date: 13.12.2023

### TENDER NOTICE

Sealed competitive tenders are invited from the persons/firms for the development of a 'Mobile/web application for providing instant weed management solutions' at College of Agriculture, Vellayani as per the specifications and terms & conditions detailed below.

The main purpose of the tool is for farmers to identify the weed types, getting expert recommendation from the application, getting provision to send their queries and get it answered by agricultural experts.

Software requirements and specifications for the development of the application are listed below.

The application should have two interfaces.

1. Farmer Module
2. Admin/Agricultural Staff Module

#### 1. Farmer Module

The farmer module should be mobile/desktop friendly application with the below listed features.

1. **Registration-** The farmer should be able to register with their mobile number and email address.
2. **Login-** Farmers should be able to login using the email/mobile number provided during registration.
3. **Weed Listing-** Listing the weeds in southern India and provides the precautionary methods to manage them. Different growth cycles and individual plant parts (root, stem,

leaf, flowers, seeds etc.) should be listed with detailed suggestions to minimize the impact.

4. **Automatic Weather Board-** The system should display the weather pattern and weather-based recommendations to farmers for their cropped area. The system should provide farm-level data to accurately predict the right growth and time of spraying conditions for crops. The system should be capable of performing real-time monitoring of weather in the cropped area.
5. **Herbicide usage and availability-** Herbicide requirements for crop and the contact information for the herbicide sellers.
6. **Community-** This interface should allow farmers and Extension functionaries to send images and get expert opinion on weed management. The application also should list the various recommendations provided to other farmers for a particular weed type. This interface will be similar to social media groups. However, other farmers will not be able to provide a recommendation to the queries posted.
7. **Search engine for Weed-Herbicide-** This interface should allow farmers to search for a specific/general weed or herbicide and get the results from the internal weed/herbicide database. Search based on geographical area (AEU), crops is also required.
8. **Herbicide calculator-** Herbicide calculator is a tool where a farmer can get the herbicide requirements based on a crop, herbicide, herbicide application, water usage, herbicide dose, herbicide concentration, herbicide formulation and field area. The system should have an internal herbicide database with the above data. The herbicide database information should be mentioned in the admin module.

## **2. Admin/Agricultural Staff Module**

The modules to come under admin modules are listed below.

1. **Analytical Dashboard-** This interface should display the various data mapping such as 'Weeds Count and Distribution', 'Herbicide formulation', 'Farmer query' and Agro ecological unit based reports etc. System should be capable of different analytical reports based on geographical area, herbicide formulations, crops and queries from farmers.
2. **User Management-** This interface is for creating admin and other scientist users for accessing the admin portal. Three main types of users are required such as 'Admin', 'Scientist' and 'Field Assistant'. Admin reserve the rights to create, edit and deactivate the users. System should be able to generate an automatic password and send that to

user's email address. Pagination and search features are also required.

3. **Crop Database-** This is for viewing, adding and editing the crop information such as Scientific name, common name, family, description etc with the add/edit crop interface reference image.
4. **Herbicide Database-** This should allow the user to view, add/editing a herbicide. Search and pagination features required. It includes common name, Trade name, active ingredient, formulation, concentration, toxicity rating, and mode of action.
5. **Weed Database-** Allow the users to view, add/editing a weed. Search and pagination features required. It should include Scientific name, common name, local name, family, Habit, Habitat, medicinal use and description of the weed.  
The system should be able to upload different images of a weed. The system shall have an analytical capability to identify plants from the images send by the user (this requirement is detailed in the upcoming section).
6. **Crop to Weed Mapping-** Allow the users to select a crop and map the common weeds against it. The user shall be able to change the mapping too. Upon selection of a crop, system shall display the existing mapping if available. If the mapping does not exist, the user shall be able to add new mapping.
7. **Agro Ecological Unit to Weed Mapping-** The system shall be able to map the common weeds found in geographical location. Kerala Agricultural university has a database of AEU (agro-ecological-unit) and the new system shall fetch the data from that application and map with the weed data. The mapping should contain additional mapping like 'Presence' (Major/Minor) and a provision to enter 'Comments' on the mapping.
8. **Herbicide to Weed Mapping-** This should allow the users to select a herbicide and map the common weeds against it. The user shall be able to change the mapping too. Upon selection of a herbicide, system shall display the existing mapping if available. If the mapping does not exist, the user shall be able to add new mapping. Provision to enter 'Comments' against individual mapping is also required.
9. **Crop- Herbicide Mapping-** This should allow the users to select a crop and map the herbicides which are recommended and vice versa. The user shall be able to change the mapping too. Upon selection of a herbicide, system shall display the existing mapping if available. If the mapping does not exist, the user shall be able to add new mapping. Provision to enter 'Comments' against individual mapping is also required.

- 10. Helpdesk-** This is the critical interface of the application. The system should display the queries received from the farmers here. The system shall have the analytical ability to identify the weed posted by the farmer. An internal analytic tool is built in the system which identifies the weed with Percentage match. This analytical ability helps the scientists to answer the farmer's question with ease. This interface should have the capability to view the answered/ unanswered questions. Escalations or follow-up mails should be triggered if the questions are not answered beyond a particular time frame.
- 11. Role Management-** This interface should help the admin to set the role permission for a type of user. Say for example admin has the right to 'User Management' but admin may not have privilege for creating a crop. So, the function privileges are set on this interface.
- 12. Change Password-** This interface allows the admin panel users to change the password.
- 13. Login page for admin-** Login page for admin users to access the admin panel
- 14. Forgot Password-** Upon forgetting the password, the user can request for a new password using this interface. The system sends a new password to user's email address upon request.

<b>Cost of Tender form</b>	
<b>Particulars</b>	<b>Cost (Rs.)</b>
works costing between Rs. 1,00,000/- and 10,00, 000/-	0.2% of the quoted amount rounded to the nearest multiple of Rs.100/- subject to a minimum of Rs.400/- and maximum of Rs.1500/- + GST @ 18%(extra)
works costing more than Rs. 10,00, 000/-	0.15% of the quoted amount rounded to the nearest multiple of Rs. 100/-subject to a maximum of Rs. 25000/- + GST @ 18%(extra)

Last date & time of receipt of tender: 04. 01.2024 2 PM

Date & time of opening of the tender: 04.01.2024 3 PM

### **TERMS AND CONDITIONS**

1. The sealed envelope containing the tender should bear the superscription **Development of mobile/web application "Rice weed expert"** and should be addressed to the Dean

of Faculty, College of Agriculture, Vellayani, Thiruvananthapuram-695 522 as per tender notice No. .GL/B1/5834/2022 dated 13.12.2023

2. The tender should be accompanied by an agreement in **Kerala stamp paper worth Rs. 200/- (Rupees Two hundred only)** and format can be downloaded from the website [www.kau.in](http://www.kau.in). Withdrawal of tenders after its acceptance or failure to execute the work in time or comply with the specification will entail cancellation of tender.
3. Each tender should be accompanied by Earnest Money Deposit (EMD) of 1% of the amount quoted for the work ( subject to minimum of Rs. 1500/-) by way of two crossed Demand Drafts separately for tender fee and EMD drawn in favour of the **Dean of Faculty, College of Agriculture, Vellayani, Thiruvananthapuram-695 522 payable at State Bank of India, Vellayani**. Late and incomplete tenders and tenders without EMD, tender fee and agreement will not be accepted. Firms who are exempted from the payment of EMD should furnish a copy of the currently valid certificates from Store purchase Department, Govt. of Kerala.
4. Tenders will be accepted up to **2 PM on 04.01.2024** Tenders received after the stipulated time will not be accepted.
5. Tenders will be opened **at 3.00 pm on the same day** at the presence of those bidders who are present at that time.
6. Tenders will be opened in the presence of the tenderers who may be present at that time.
7. If the date of opening the tender happens to be a holiday due to unexpected circumstances like bandh, hartal etc., quotations will be opened on the next working day at the same place and time.
8. The rate quoted for the work should be inclusive of all charges, taxes and should be valid for one year w.e.f. the date of issue of work order.
9. The Dean of Faculty, College of Agriculture, Vellayani has the right to accept or reject any or all of the offers without assigning any reason. The decision of the undersigned in finalizing the tenders will be the final and binding.
10. The tender accepting authority reserves the right to alter the scope or reduce the quantum of work before issue of work order and the bidder shall not have any claim what so ever on this account.
11. The bidder of the accepted tender should enter into an agreement with the Dean of Faculty, College of Agriculture, Vellayani on Kerala stamp paper worth Rs.200/-. He should also submit a security deposit equal to 5% of the bid in the form of Term Deposit/Bank Guarantee/Demand Draft drawn in favour of Dean of Faculty, College of

- Agriculture, and Vellayani payable at State Bank of India, Vellayani when directed from this office. The format of the agreement can be downloaded from the above website.
12. The work order will be placed immediately on the confirmation of the tender and availability of funds and invoice should be addressed to the Dean of Faculty, College of Agriculture, Vellayani after the development of the mobile/web application.
  13. The item should be supplied and installed within 60 days from the date of issue of work order.
  14. The period of warranty for the items should be stated separately.
  15. Tenders insisting payment in advance either full or part are liable for rejection.
  16. The payment as per the invoice will be made only after the user acceptance testing period and tenderer is liable to rectify the defects immediately on receipt of intimation. TDS will be deducted from the payment to the contractor under section 194 C of the Income Tax Act. The deduction rate will be 1% for individuals and HUF & 2% for others.
  17. Any failure on the part of the bidder in the fulfilment of contractual obligations will result in the forfeiture of EMD/Security Deposit.
  18. All other technical and commercial terms and conditions as per the code rules in force in Kerala. State will be applicable in this case also.
  19. All the rules and regulations applicable to Government tenders will be applicable to this tender also.

**SPECIAL CONDITIONS:-**

1. The system design should follow responsive design (compatible in multiple devices like mobile, laptop, desktop etc and in various browsers).
2. The performance and usability of the application should be as per industry Standards.
3. The tender cost should be inclusive of the domain charge, hosting charges for a period of one year commencing from the UAT (User acceptance testing) period.
4. The application should be ready for UAT before 31-Mar-2024.
5. The tender awardee is responsible for charge free maintenance and bug fixing of the application for one year commencing from 31-Mar-2024.
6. Tenders insisting payment in advance either full or in part for releasing the documents through bank are liable to be rejected.
7. The undersigned reserves the authority to accept or reject any or all of the offers for above mentioned work without assigning any reason whatsoever.

8. The decision of the undersigned in finalizing the tenders shall be final and binding.
9. The work should be completed within 2 months from the date of receiving the work order.

**Sd/-**  
**Dr. ROY STEPHEN**  
**DEAN OF FACULTY**

To  
KAU Website



**SECTION OFFICER**