WEATHER INFORMATION DISSEMINATION SYSTEM (WIDS) USER MANUAL

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1. INTRODUCTION

Weather Information Dissemination System (WIDS) is a product of the WIMEA-ICT project whose aim is to provide platforms, including USSD and web interface for Meteorological organs to capture weather products such as forecasts and weather advisories and to disseminate the information to the public.

2. GENERAL INFORMATION

The system is designed to provide real-time and accurate weather information to stakeholders through a web based interface and mobile USSD interfaces. The information provided by the system includes weather forecasts across all districts/states in the country and advisory information on agriculture and food security, disaster preparedness, heath and water.

2.1 System Overview

WIDS provides the following features:

- Interface for accessing advisories and weather forecasts especially for the farmers. Weather forecasts include daily forecasts, decadal (10 day forecasts) and seasonal forecasts
- Interface for capturing feedback on the advisories and forecasts from farmers.
- Interface for administrators to enter advisories and weather forecasts.
- Interface for farmers and other stakeholders to view advisories and weather forecasts.
- Interface for administrators to view farmer/ stakeholder feedback.
- Interface for administrators to adding users to the system.
- Interface for administrators to view statistical information on user requests and other parameters.

2.2 Contact

Request for access to, or inquiries on the use of the system, the design and functionalities of the system should be sent to this email dtuheirwe@cit.ac.ug/

3. USER GUIDE FOR THE FARMER AND OTHER GENERAL USERS

3.1 Access, Roles and privileges of the farmer

User categories of the system include farmers, farmer's associations and the general public among others. A user can request for advisories or forecasts and provide feedback without any form of authentication. Users are expected to have at least the following capabilities/skills in order to operate the system: The skills include basic computer literacy and some experience working with web-based systems. In a similar way, using the mobile USSD interface does not require user authentication.

3.2 How to access the system?

To access the web based interface, open any internet browser of your choice and type the following url: http://wids.mak.ac.ug/wids/ in the browser's address bar. The system will load the home screen where a farmer can request information including advisories and forecasts using a form, on the left hand side menu. Figure 1 shows the home page of the web interface. The content area displays the daily weather information, dekadal weather information and seasonal weather forecast information for major cities of a country. The USSD version of the system is accessed using code *255*85#, using a mobile phone. Internet is required in order to access the web version of the system. On the other hand, the USSD version of the system requires the user's mobile phone to have at least Uganda Shillings 200 airtime(and an equivalent for other countries) on their mobile phones.

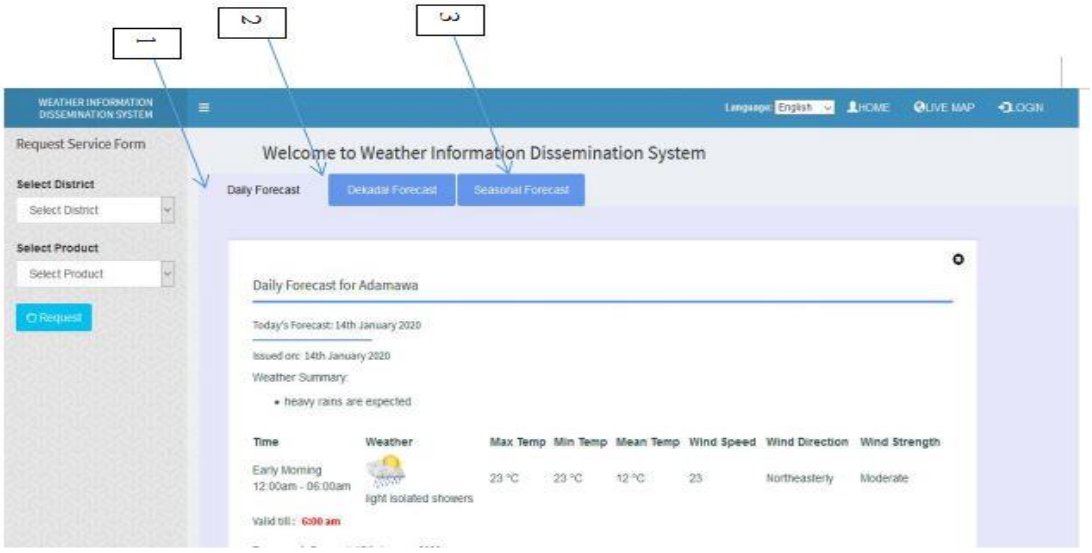


Figure 1: Home page of the WIDs web based system

Tab 1 Shows Daily forecast for current day and next day if available for randomly selected districts/states. **Tab 2** shows Dekadal forecast that is the forecast for the next ten days. **Tab 3** shows the seasonal forecast for a randomly selected major city.

3.3 How to request for advisory information

3.3.1 Requesting advisories via the web based interface

To access advisories, the user requests the information pertaining a certain forecast, by filling the fields of the service request form on the left side of the home page as shown in the figure 1. The Advisory is provided at the bottom of each forecast requested. The user follows the steps below in order to get the information.

1. Select District/State: This enables the user to select the district/state for which they want the forecast and advisory information.
2. Select Product: The options include Daily Forecast, Dekadal Forecast and Seasonal Forecast
3. Click request button.
4. It loads a page showing the requested forecast. Scroll to the end of the Forecast.
5. Click the View Advisory Button.

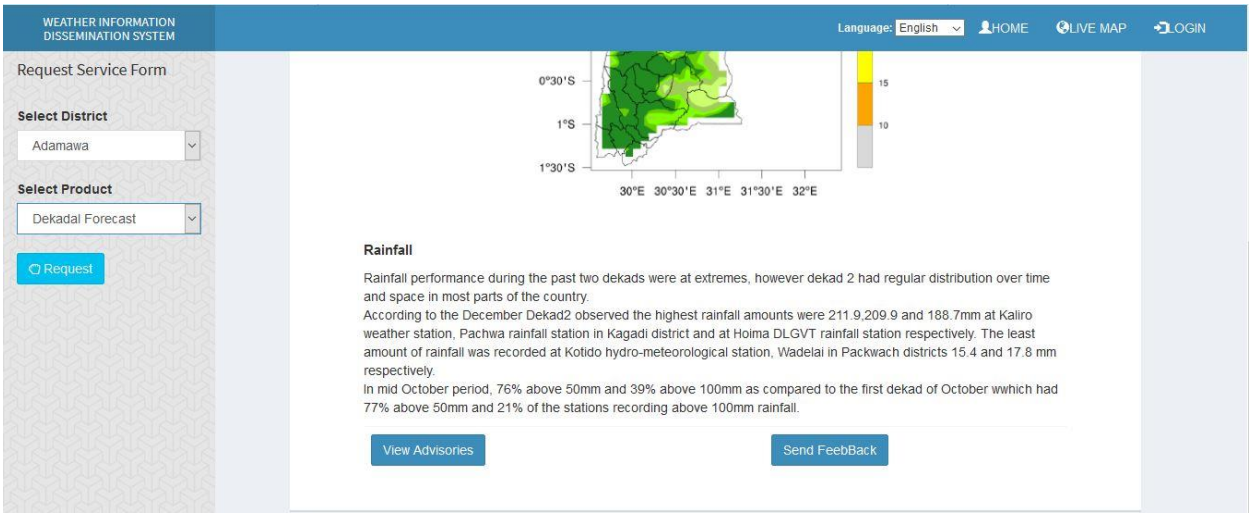


Figure 2: Service request form, which is accessed on the left-hand menu of the web interface

After clicking the View Advisories button, the system displays the advisories. The information includes District, Climatic Zone, Sub Zone and the advisory message as shown in Figure 3.

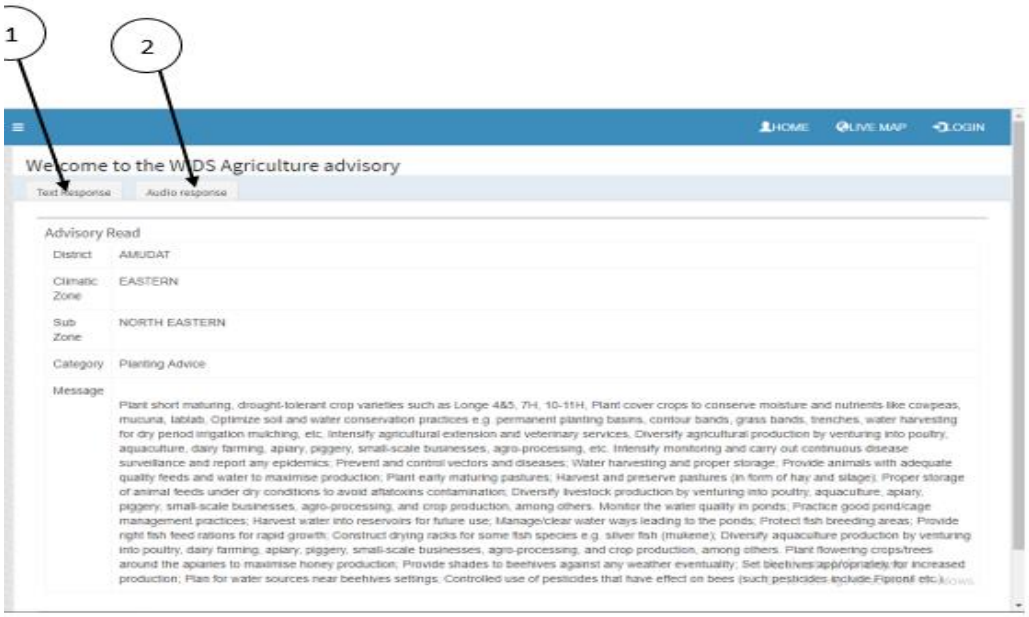


Figure 3 Text version of forecast/ advisory information

The information is provided both in text and audio form. The user can switch between audio and text representation at their convenience. Tab 1 displays the text representation of the information. To switch to the audio format, the user should click tab 2. When the user clicks tab 2, a page in Figure 4 is displayed. To listen to the audio, the user clicks the play button. The user is also able to adjust the volume using the volume button.

Figure 4: Audio representation of advisory/forecast information

3.4 Feedback on advisories

The system displays a form that collects feedback from the users to gauge their perception on the advisories received upon clicking the Send Feedback button of on the forecast requested through the request form. The farmer has a choice to provide this feedback by filling in and submitting the form or close the feedback form by clicking the close button. See figure 11.

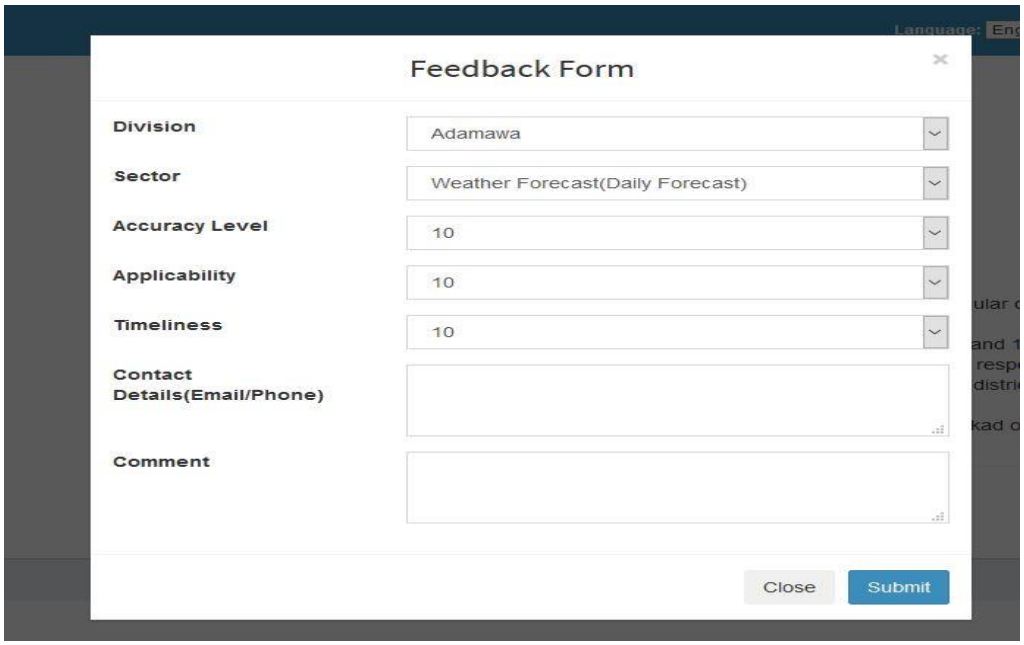


Figure 5: Feedback form

The feedback information collected from the farmer include.

- The district/state for which the advisory belongs
- The category of advisory information he/she is providing feedback about.
- The accuracy level of the advisory information on a scale of 1 to 10.
- The applicability of the advisory information on a scale of 1 to 10.
- The timeliness of the advisory information on a scale of 1 to 10.
- A general comment about the advisory as perceived by the user of the system.
- The contact details of the person giving feedback (Email or Phone)

4. SYSTEM ADMINISTRATION

4.1 User access, Roles and privileges

4.1.1. System administrator privileges

The Meteorological office personnel, who doubles as a systems administrator performs the following tasks.

- Add new users to the system.
- Input advisory and weather forecast data into the system.
- View advisory and forecast information.
- View feedback from farmers and other general users.
- View statistics for both forecasts and user feedback.
- View active and deactivated users.

Below are the specific tasks for the respective subcategories

4.1.2. Forecast Administrator's privileges

The Forecast administrator has the following privileges.

- Input weather forecast data into the system.
- View advisory and forecast information.
- View feedback from farmers and other general users.
- View statistics for forecasts.

4.1.3. Advisory Administrators privileges

- Input advisories into the system
- View advisory and forecast information.
- View feedback from farmers and other general users.
- View statistics for forecasts.
- View indigenous knowledge from farmer's representatives.

4.1.4. Farmer representative privileges

- Enter indigenous knowledge into the system

4.2. Authentication

On the home page of the web interface, users are presented with a login button at the top right corner as in Figure 6.

Figure 6. Menu options on home page of WID system

When the user clicks on the login button, the system displays the login page. The administrative users will have to provide the email and password in order to access the administrative tasks. The default email for testing purposes is **ad@admin.com** and password is **a** The login form is shown in figure 7.

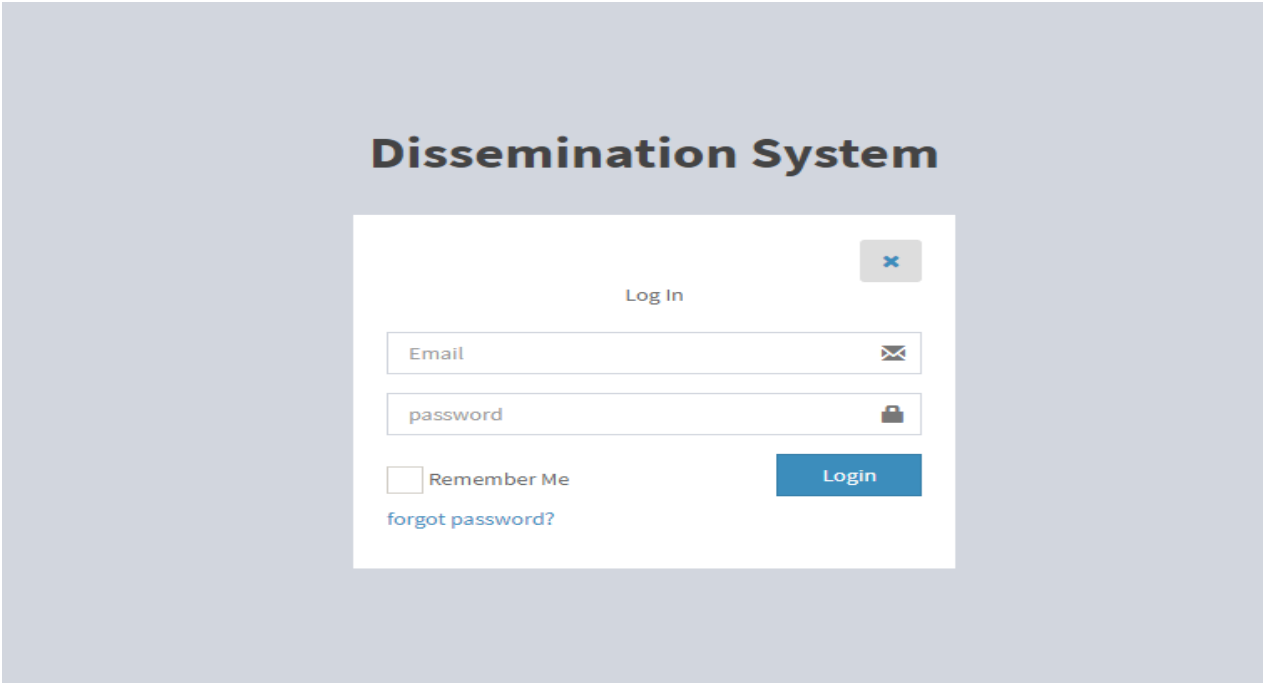


Figure 7: Login page for the WIDs system

On successful login, the user sees the administrator dashboard as shown in figure 8.

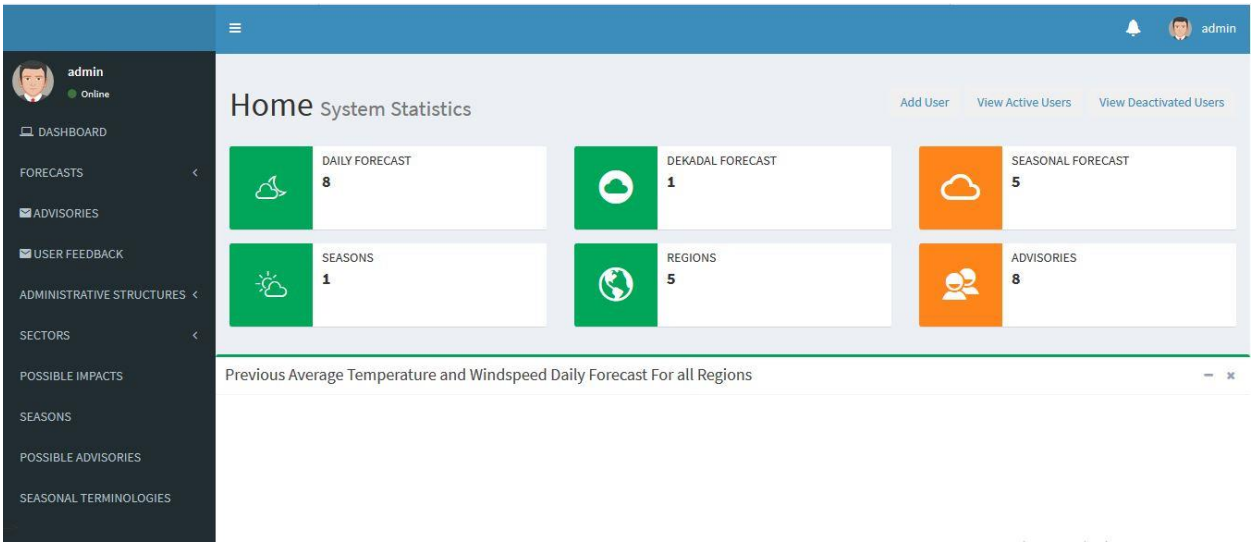


Figure 8 System administrators dashboard

If the login credentials are incorrect, an error message is displayed on top of the login form as shown in figure 9.

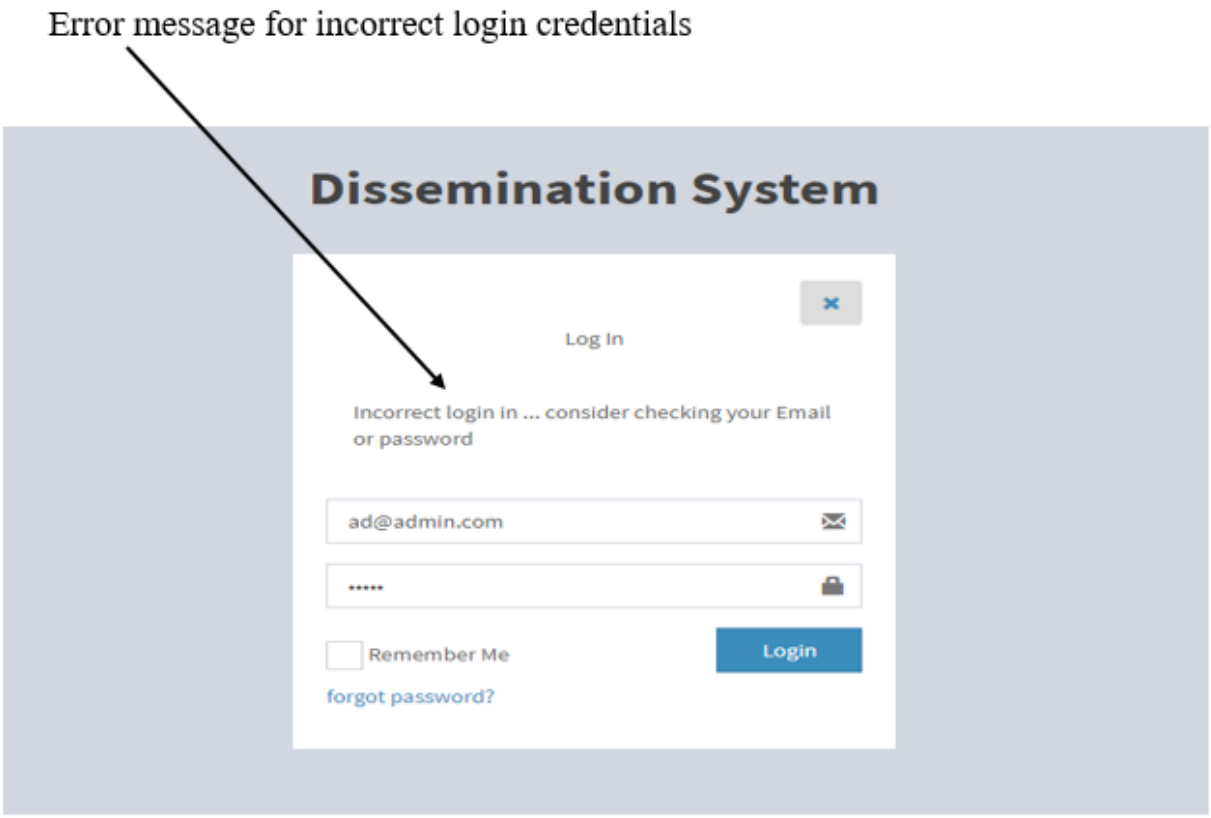


Figure 9: Error message for incorrect login credentials

4.3. Data Capture

On the administrator view, data is entered into the system through forms where the user has to input data values captured from their predictive models or from the forecasts of UNMA

4.3.1. Weather forecast data entry

To input weather forecast data, the user clicks the "FORECASTS" dropdown menu on the administrator's dashboard. The drop down provides options for daily, dekadal and seasonal forecasts. These different forecast data can be entered as described in the following subsections.

4.3.1.1.Daily forecast data entry

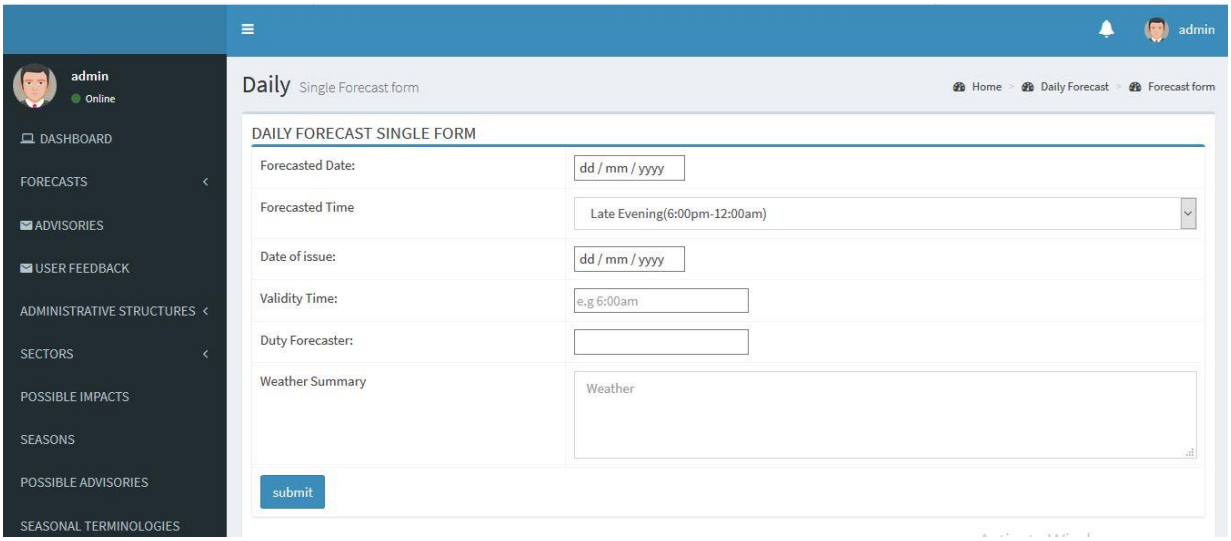
The Daily Forecast Form is used to capture daily forecast for the specific day. The form contains fields to input the region for which the prediction is being made. Below are the fields that are entered/selected from a series of options during the daily forecast data entry process.

1. The Mean **Temperature** (Mean Temp) for early morning, late morning, afternoon and late evening time periods.
2. The **wind** direction for early morning, late morning, afternoon and late evening time periods.
3. The wind strength for early morning, late morning, afternoon and late evening time periods.
4. The weather outlook for early morning, late morning, afternoon and late evening time periods.
5. date and time of the forecast
6. Further Outlook, which enables the user to briefly describe the expected outlook
7. Lastly, the user clicks **Create** and the data for daily forecast is submitted or saved into the system.

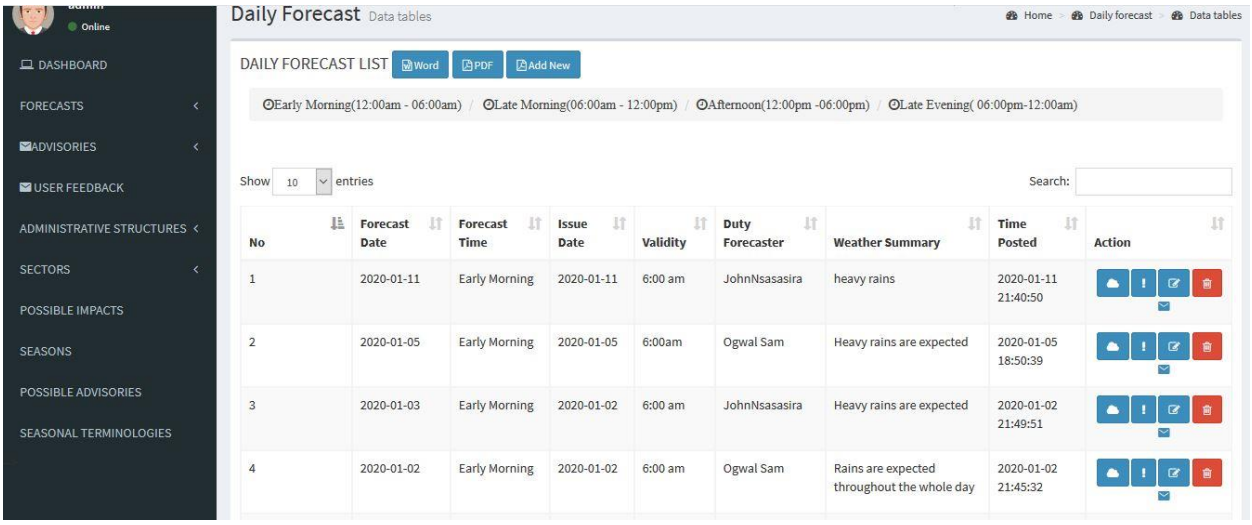
The daily forecast input form is shown in figure 10.

How to Enter a Daily Forecast

Step 1: After loadind Daily Forecast Page, Click "Add New" it loads the page below: Fill the form and submit.



Step 2: Look for the forecast that has just loaded and click the cloud icon. On the page that loads click "Add New"



Step 3: Fill the form that loads below with weather data and submit.

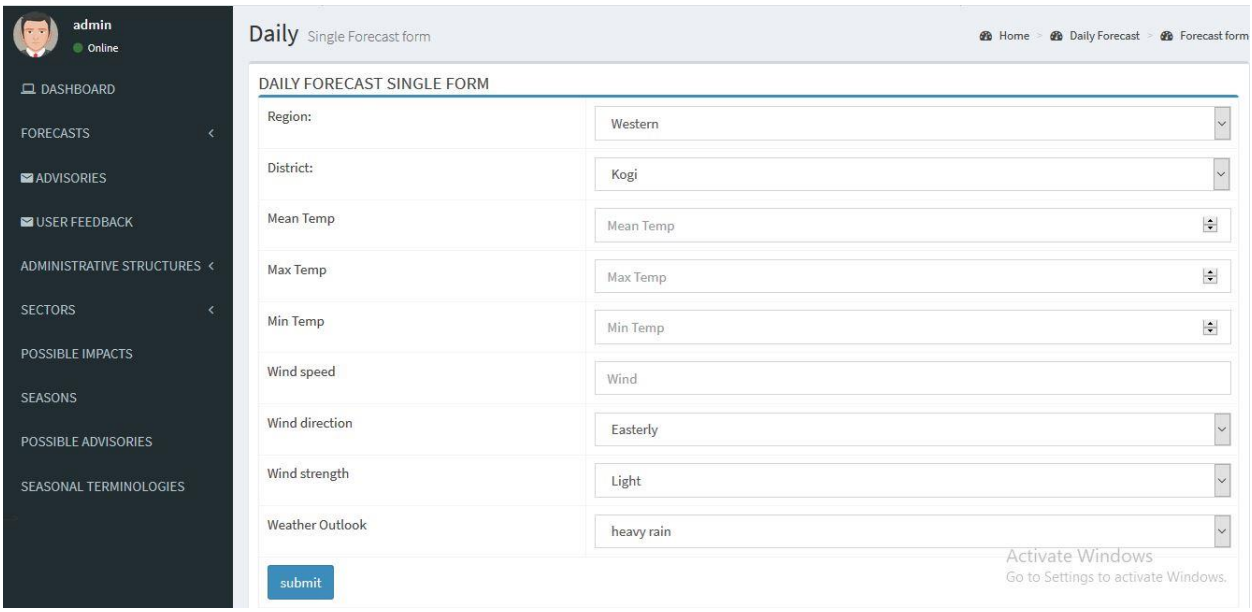


Figure 10: Daily forecast data entry form.

4.3.1.2 Dekadal forecast data entry

The dekadal Forecast Form is used to capture data options for displaying weather forecasts for the next ten days. The form has a field to input the advisory for the users according to the weather forecast that has been made for the next 10 days. Following are the fields that the user enters or selects:

1. Select a region from the available regions that are available in the list.
2. Select the sub region for which the forecast belongs.
3. Select start and end dates of the forecast using a calendar provided.
4. Enters the advisory.
5. Add image of map if available.
6. Lastly, click **Create** button in order to submit the information.

The fields are illustrated in Figure 11.

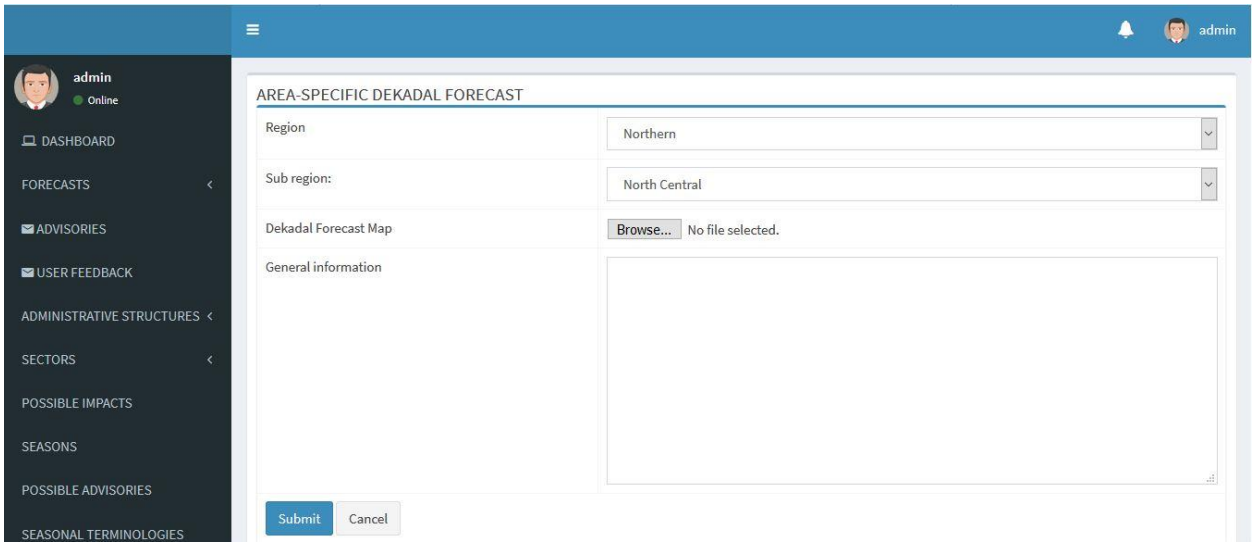


Figure 11 Dekadal forecast data entry form

4.3.1.3 Seasonal forecast data entry

The Seasonal Forecast Form enables administrators to enter the seasonal forecast data for the various seasons that are recognized during the course of the year. Below are the steps: -

1. Select a region for which the seasonal forecast is being uploaded from the **Region** drop down list and after select a sub-region for which the forecast is being made
2. Select the season from the list provided. Seasons are a period between a number of months e.g. JAN TO MARCH.
3. Selects the language.
4. Sample default impacts are provided and the user has to check from the provided list to add to the impacts section.
5. If more impacts are needed and are not provided in the list, then the user can add more impacts in the impact text box.
6. An option is available to send images and audios if available before the user can submit the seasonal forecast.
7. Lastly, click "**Create**" and the seasonal forecast is submitted. The form is provided in figure 12.

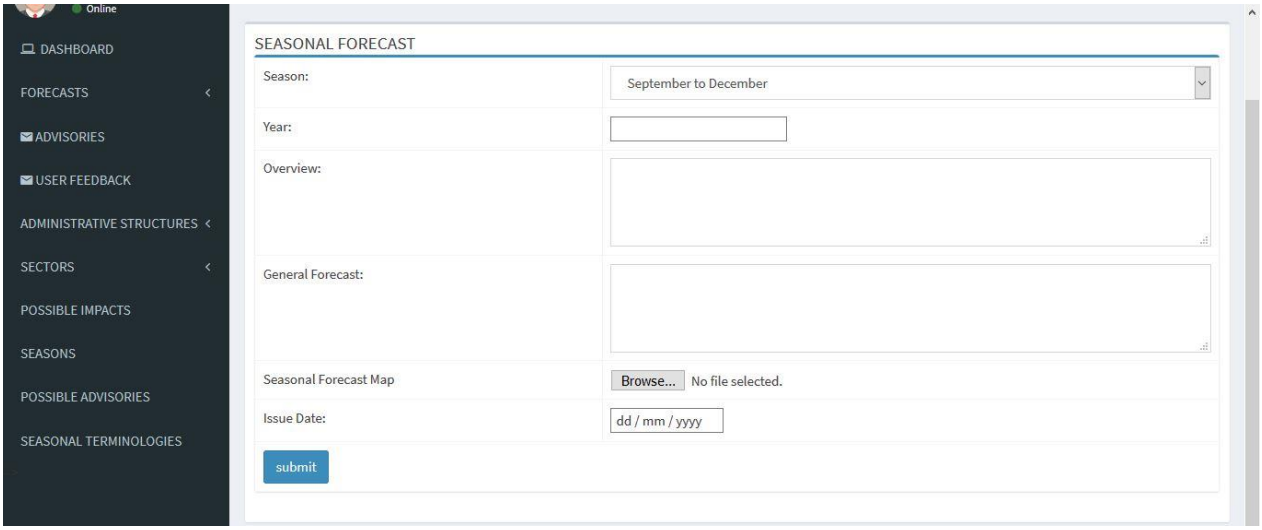
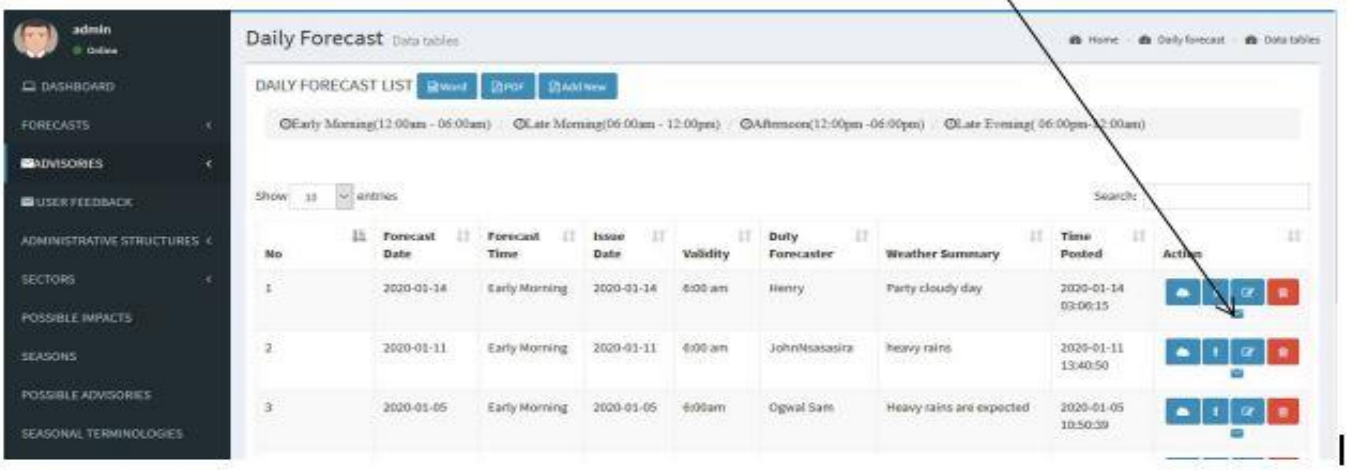


Figure 12 Seasonal forecast data entry form

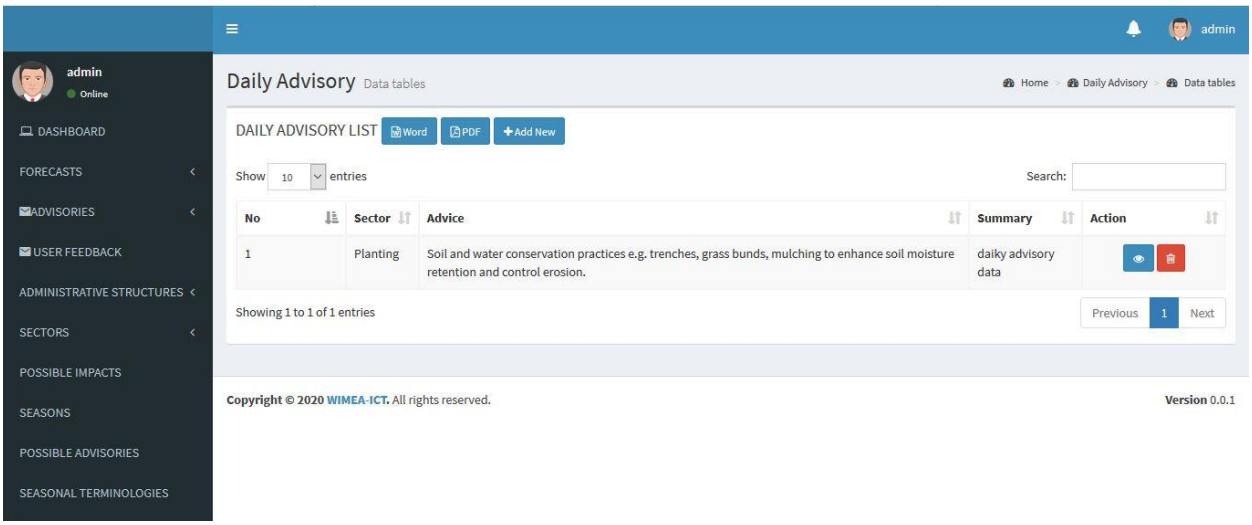
4.3.2 Advisory data entry

To input an advisory, for a specific forecast, follow the steps below:

Step 1: Click on a specific forecast under the FORECAST tab. If you click Daily Forecast it will load a page below. Then on a particular forecast row, click the Message icon at the extreme right to load the advisories page.



Step 2: On loading the Advisory List Page below, Click “Add New” to add a new advisory.



Step 3: An Advisory Form is loaded, fill it accordingly and submit your advisory.

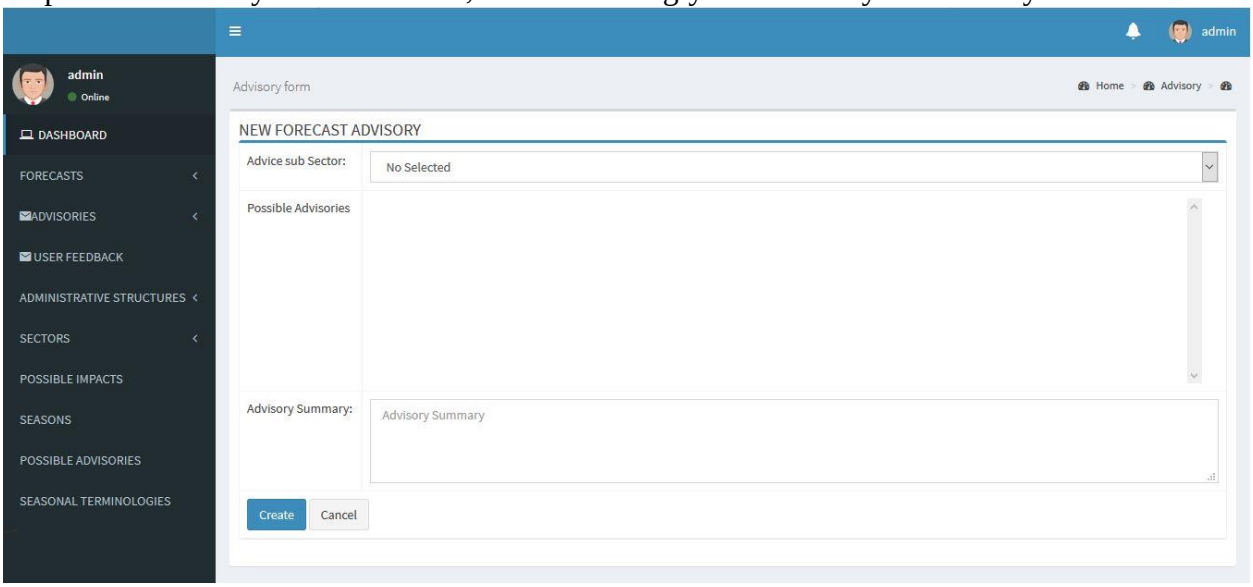


Figure 13 Advisory data entry form

4.4 Viewing and formatting data

When an administrator wants to view submitted information about weather forecast and advisories, he can use the View Tables option on the side bar menu. This option enables one to view uploaded information, make changes to the information and delete information from the list of what is submitted. Reports can also be generated from the data in formats including **PDF**, **Excel** or **Microsoft word.**

4.4.1 Viewing advisory information

To view advisories, select an option from the "**ADVISORIES**" dropdown menu from the dashboard. Select the Particular Forecast for the advisory from the dropdown list. The advisory is displayed as shown in the figure 14.

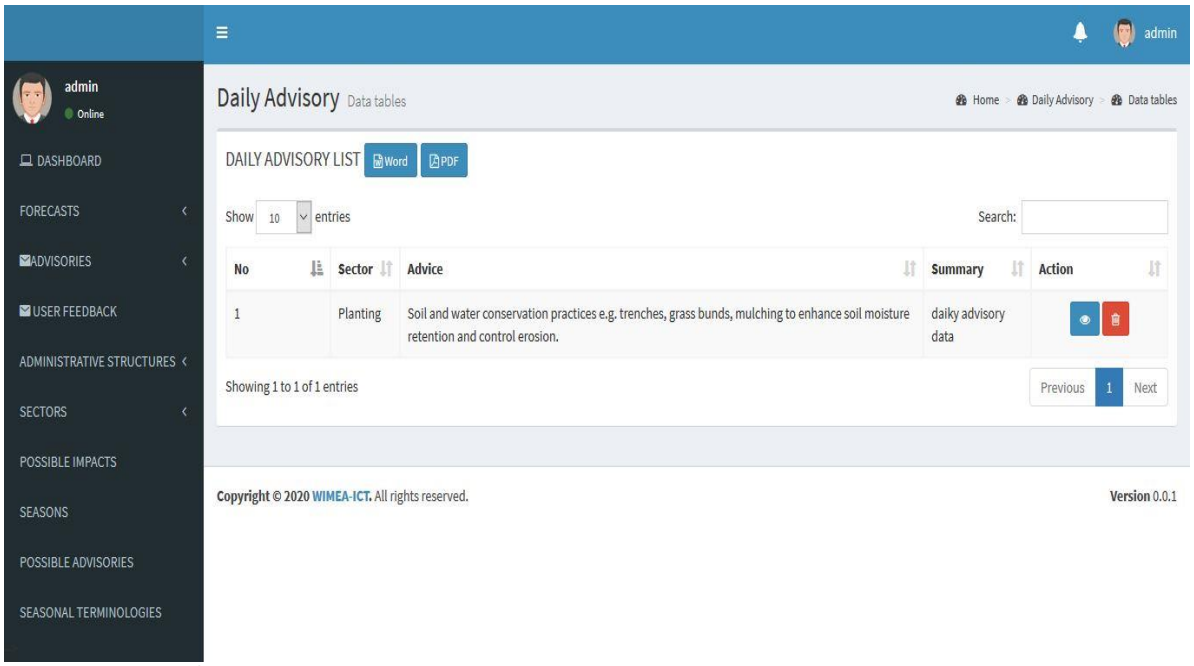


Figure 14. Advisory information view

The labelled buttons have the following purposes.

1. **"Word"** Help the user to download a Microsoft word version of the information.
2. **"PDF"** Help the user to download a PDF version of the information.
3. **"Delete icon"** Enables user to delete an advisory