

# **WEATHER INFORMATION DISSEMINATION SYSTEM (WIDS) USER MANUAL**

## TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
List of Figures .....	3
1. INTRODUCTION .....	1
2. GENERAL INFORMATION.....	1
2.1 System Overview .....	1
2.2 Contact .....	1
3. USER GUIDE FOR THE FARMER AND OTHER GENERAL USERS.....	2
3.1 Access, Roles and privileges of the farmer .....	2
3.2 How to access the system? .....	2
3.3 How to request for advisory information .....	3
3.3.1 Requesting advisories via the web based interface.....	3
4. SYSTEM ADMINISTRATION .....	7
4.1 User access, Roles and privileges .....	7
4.1.1. System administrator privileges.....	7
4.1.3. Advisory Administrators privileges.....	7
4.2. Authentication .....	7
4.3. Data Capture .....	10
4.3.1. Weather forecast data entry .....	10
4.3.1.1. Daily forecast data entry.....	10
4.3.1.2 Dekadal forecast data entry.....	12
4.3.1.3 Seasonal forecast data entry.....	13
4.3.2 Advisory data entry.....	14
4.4 Viewing and formatting data.....	16
4.4.1 Viewing advisory information .....	16

## List of Figures

Figure 1: Home page of the WIDs web based system .....	2
Figure 2: The USSD version can be accessed by dialing *255*85# .....	3
Figure 3: View advisories for a specific forecast.....	4
Figure 4: Feedback form .....	5
Figure 5. Menu options on home page of WID system .....	8
Figure 6: Login page for the WIDs system.....	8
Figure 7 System administrators' dashboard.....	9
Figure 8: Error message for incorrect login credentials.....	9
Figure 9: Daily forecast data entry form .....	12
Figure 10 Dekadal forecast data entry form .....	13
Figure 11 Seasonal forecast data entry form.....	14
Figure 12 Advisory data entry form.....	15
Figure 13. Advisory information view.....	16

## **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, health 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/](mailto: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?

##### 3.2.1: Web Version

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, Marine weather information and seasonal weather forecast information for major cities of a country.

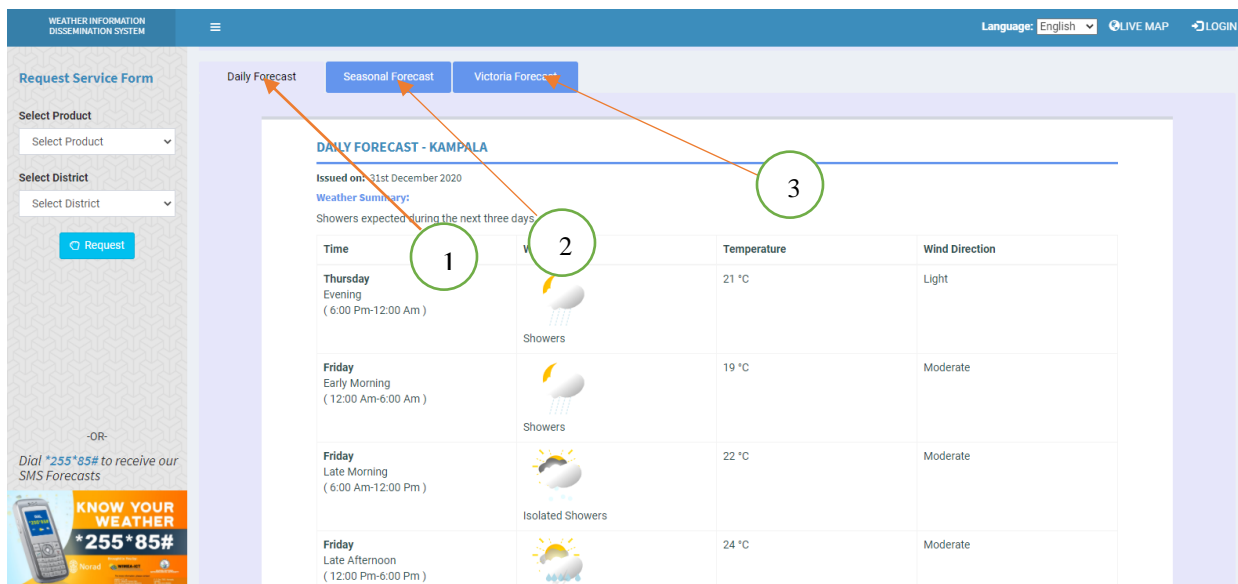


Figure 1: Home page of the WIDS web based system

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

### 3.2.2: WIDS: USSD Version

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 2: The USSD version can be accessed by dialing \*255\*85#

## 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 3. 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, Marine 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.

2.1.0 Central Region and Lake Victoria Basin Region  
2.2.1 Eastern Lake Victoria and South Eastern

The currently experienced occasional outbreaks of showers and thunderstorms signal the onset of the seasonal rainfall. The rains are expected to reach the peak levels around late-September/early-October and the cessation around late-November/early-December. Overall, near normal to below normal rainfall is expected to prevail over this region.

VIEW ADVISORIES

SEND FEEDBACK

Click to view advisories

Sector	Crop
Message	Practice mulching ; Plant drought resistant varieties for crops like sorghum, maize , millet; Use the available water sparingly since there is likelihood of water stress.

Sector	Livestock
Message	Construct and de-silt water and soil conservation structures like dams and ponds; Avoid bush burning to preserve pasture; Use pasture sparingly; Continue with routine vaccination

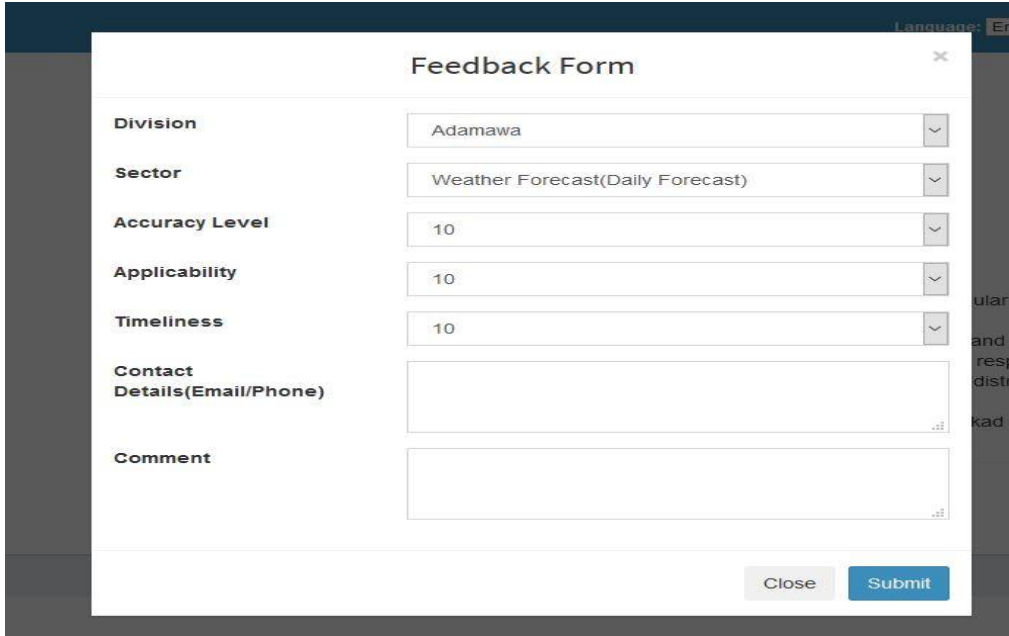
Sector	Fisheries
Message	Clear bush around fish ponds; Construct/de-silt existing fishing ponds; Secure ponds to prevent predators.

Figure 3: View advisories for a specific forecast.

After clicking the View Advisories button, the system displays the advisories. The information includes the sector, and the respective advisory message as shown in Figure 3.

### 3.4 Feedback on advisories/Forecasts

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 6.*



**Feedback Form**

**Division**: Adamawa

**Sector**: Weather Forecast(Daily Forecast)

**Accuracy Level**: 10

**Applicability**: 10

**Timeliness**: 10

**Contact Details(Email/Phone)**

**Comment**

**Close** **Submit**

Figure 4: Feedback form

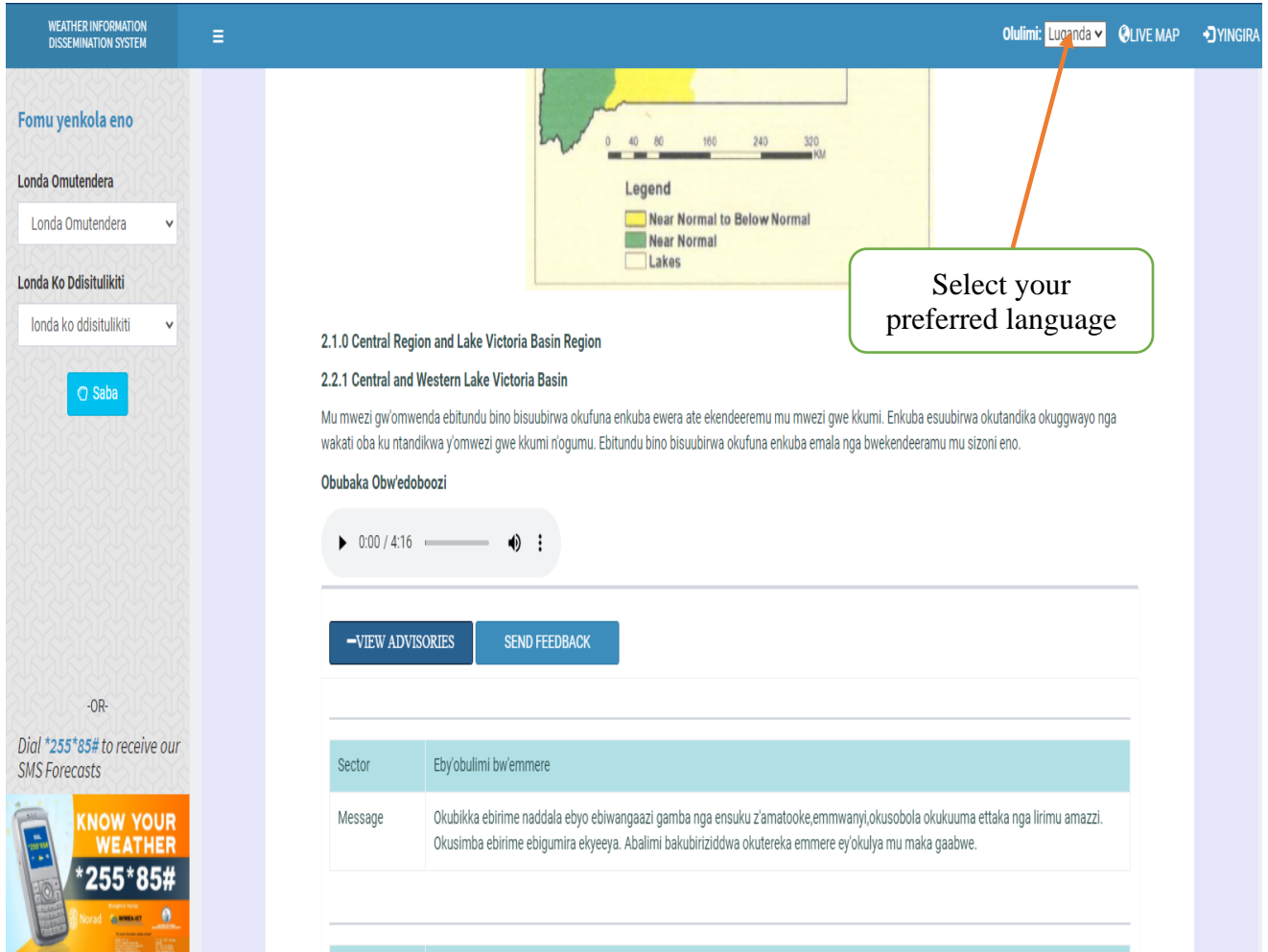
The feedback information collected from the farmer include.

- 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)



### 3.5: Change Site Language.

The WIDS web version has a multilingual functionality that enables the farmer to view the advisories in his/her local language.



The screenshot shows the WIDS web interface. At the top right, there is a language selection dropdown menu labeled "Olulimi:" with "Luganda" selected. An orange arrow points to this dropdown, and a green callout box with the text "Select your preferred language" is positioned next to it. The interface also features a map of the region, a legend, and a section for advisories. On the left side, there are options to select a region and a language, and a "Saba" button. At the bottom left, there is a promotional banner for SMS forecasts with the text "Dial \*255\*85# to receive our SMS Forecasts" and "KNOW YOUR WEATHER \*255\*85#".

**WEATHER INFORMATION DISSEMINATION SYSTEM**

Olulimi: **Luganda** **LIVE MAP** **YINGIRA**

**Fomu yenkola eno**

Londa Omutendera

Londa Omutendera

Londa Ko Ddisitulikiti

londa ko ddisitulikiti

**Saba**

**2.1.0 Central Region and Lake Victoria Basin Region**

**2.2.1 Central and Western Lake Victoria Basin**

Mu mwezi gw'omwenda ebitundu bino bisuubirwa okufuna enkuba ewera ate ekendeeremu mu mwezi gwe kkumi. Enkuba esuubirwa okutandika okuggwayo nga wakati oba ku ntandikwa y'omwezi gwe kkumi n'ogumu. Ebitundu bino bisuubirwa okufuna enkuba emala nga bwekendeeramu mu sizoni eno.

**Obubaka Obw'edoboosi**

0:00 / 4:16

**VIEW ADVISORIES** **SEND FEEDBACK**

Sector	Eby'obulimi bw'emmere
Message	Okubikka ebirime naddala ebyo ebiwangaazi gamba nga ensuku z'amatooke, emmwany, okusobola okukuumu ettaka nga lirimu amazzi. Okusimba ebirime ebikumira ekyeeya. Abalimi bakubiriziddwa okutereka emmere ey'okulya mu maka gaabwe.

## **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.

### **4.2. 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 5. 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.

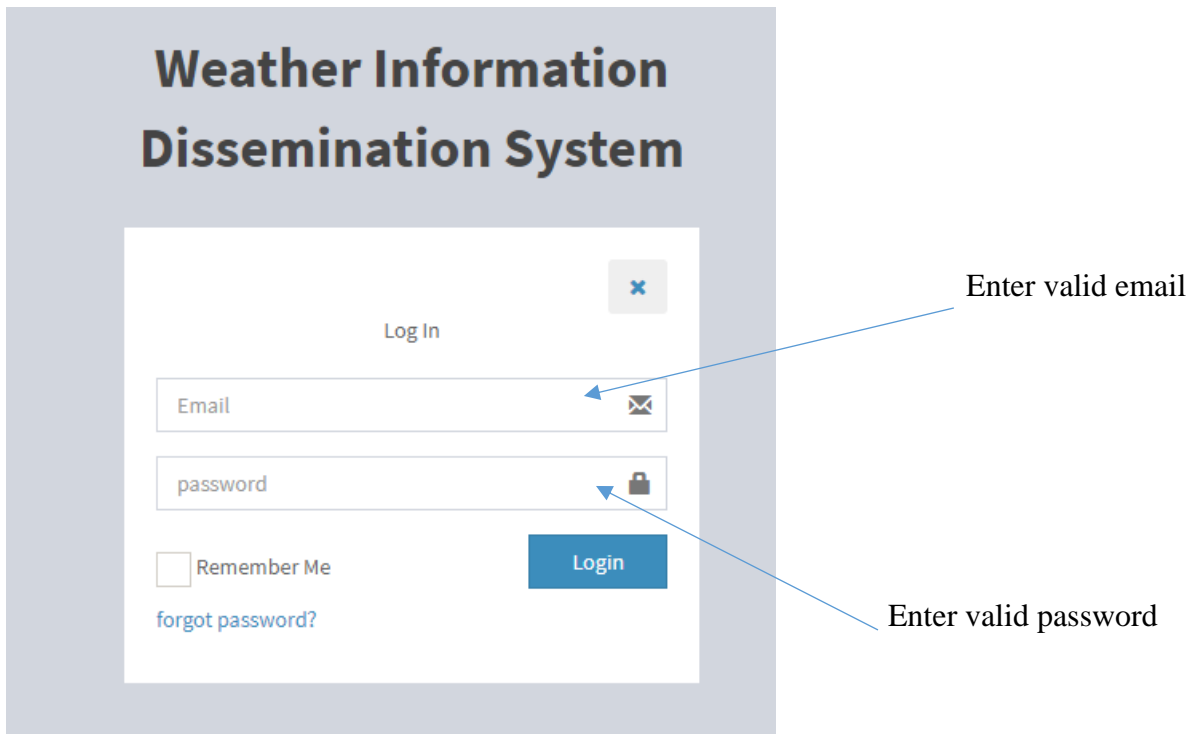


Figure 6: Login page for the WIDS system

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

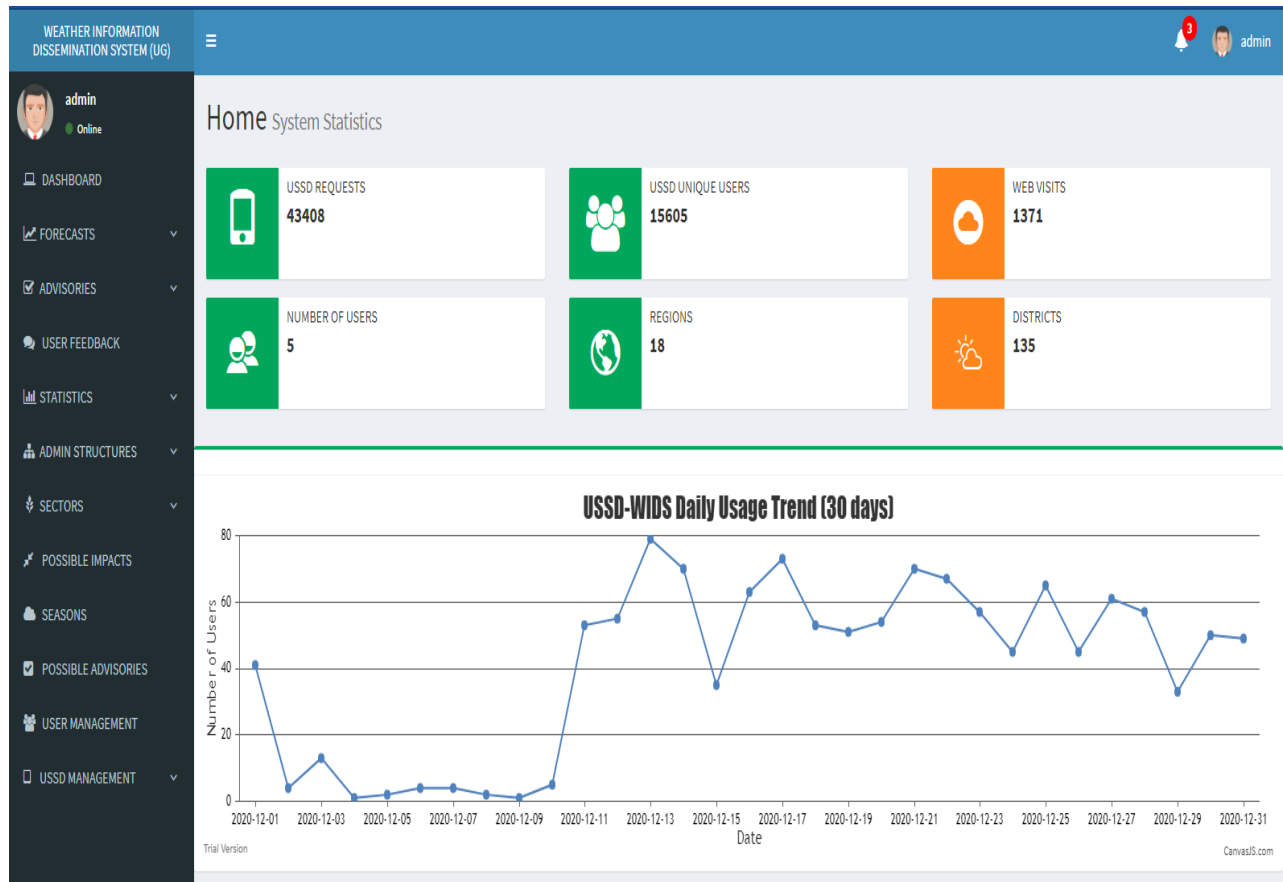
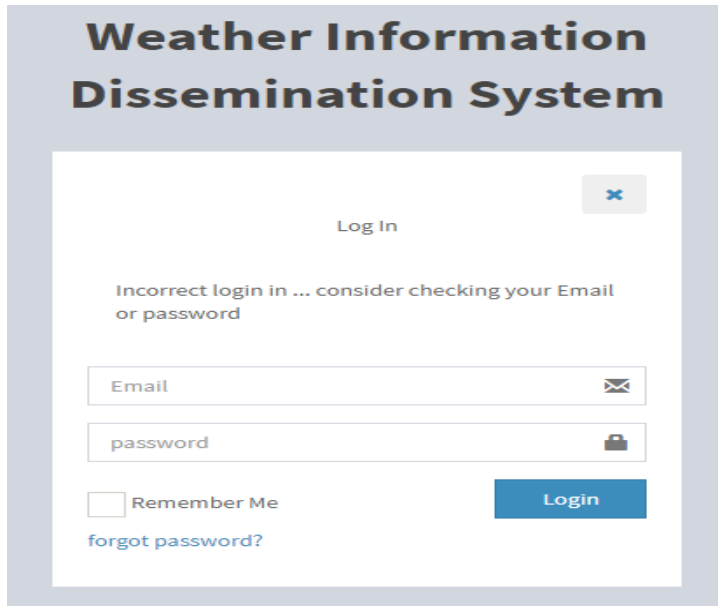


Figure 7 System administrators' dashboard

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



**Weather Information Dissemination System**

**Log In**

Incorrect login in ... consider checking your Email or password

Email

password

☐ Remember Me

[forgot password?](#)

**Login**

Figure 8: 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.

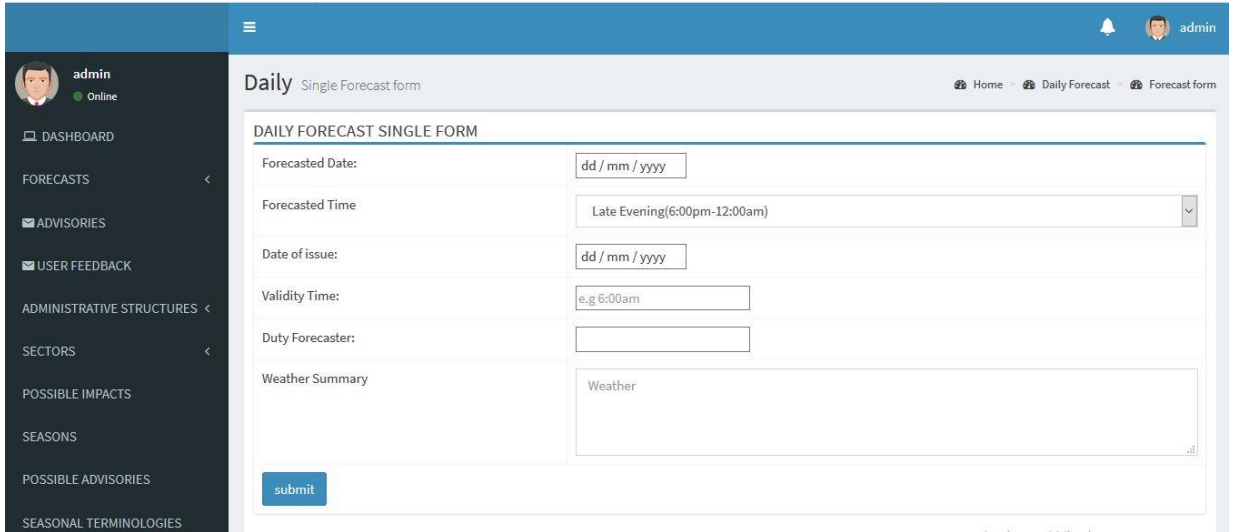
1. The Mean **Temperature** (Mean Temp) for early morning, late morning, afternoon and late evening time periods.
2. The **wind** direction for early morning, late morning, afternoon and late evening time periods.
3. The wind strength for early morning, late morning, afternoon and late evening time periods.
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 loading Daily Forecast Page, click “**Add New**” it loads the page below:

Fill the form and submit.



**Daily** Single Forecast form

Home > Daily Forecast > Forecast form

**DAILY FORECAST SINGLE FORM**

Forecasted Date:

Forecasted Time:

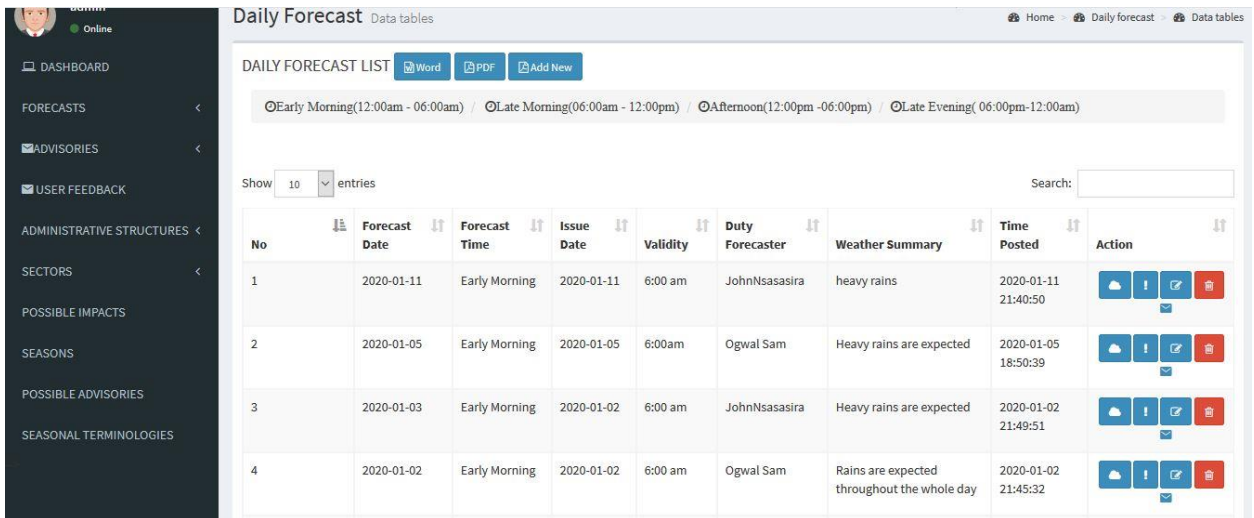
Date of issue:

Validity Time:

Duty Forecaster:

Weather Summary:

**Step 2:** Look for the forecast that has just loaded (Always the first one) and click the **cloud** icon. On the page that loads click “**Add New**”



**Daily Forecast** Data tables

Home > Daily forecast > Data tables

**DAILY FORECAST LIST**

☐ Early Morning(12:00am - 06:00am) / ☐ Late Morning(06:00am - 12:00pm) / ☐ Afternoon(12:00pm - 06:00pm) / ☐ Late Evening( 06:00pm-12:00am)

Show  entries

Search:

No	Forecast Date	Forecast Time	Issue Date	Validity	Duty Forecaster	Weather Summary	Time Posted	Action
1	2020-01-11	Early Morning	2020-01-11	6:00 am	JohnNsasasira	heavy rains	2020-01-11 21:40:50	
2	2020-01-05	Early Morning	2020-01-05	6:00am	Ogwal Sam	Heavy rains are expected	2020-01-05 18:50:39	
3	2020-01-03	Early Morning	2020-01-02	6:00 am	JohnNsasasira	Heavy rains are expected	2020-01-02 21:49:51	
4	2020-01-02	Early Morning	2020-01-02	6:00 am	Ogwal Sam	Rains are expected throughout the whole day	2020-01-02 21:45:32	

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

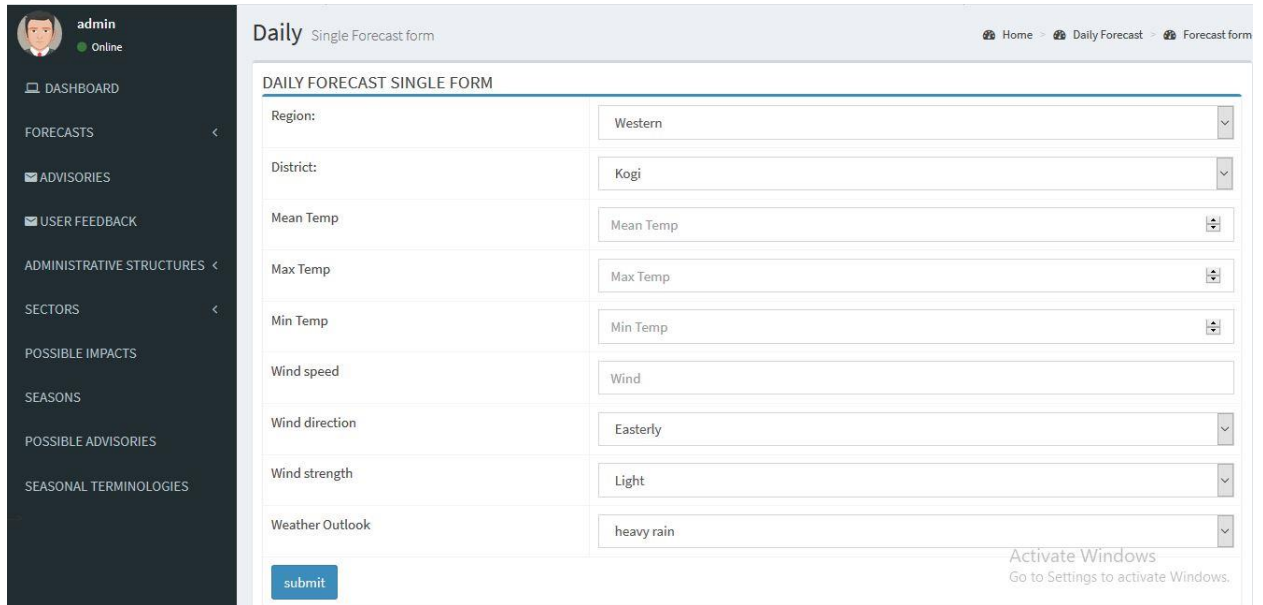


Figure 9: Daily forecast data entry form.

#### 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.

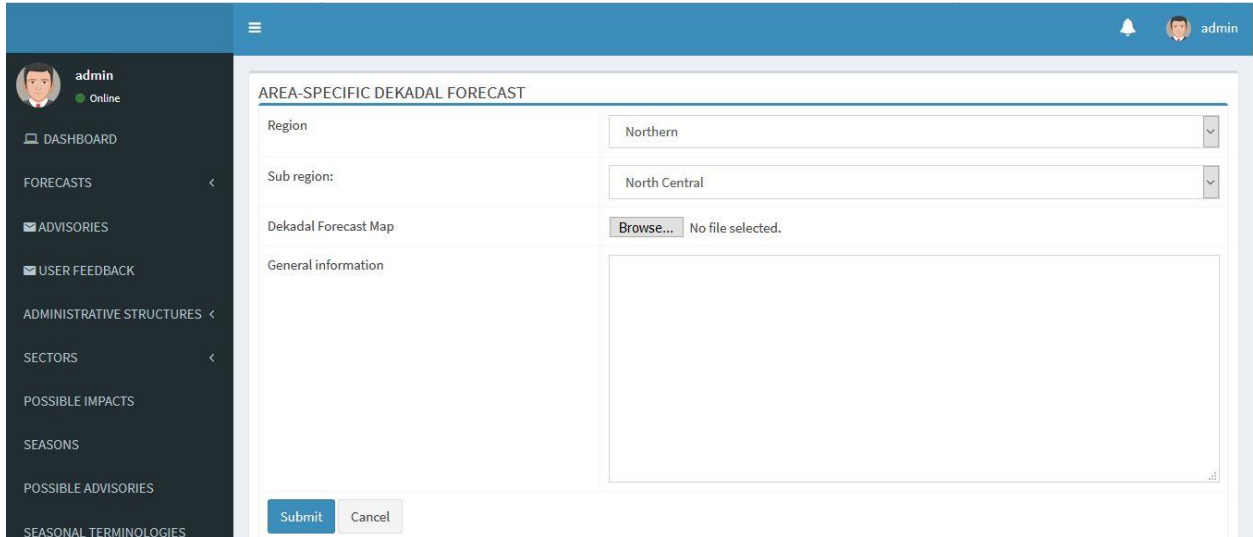


Figure 10 Dekadal forecast data entry form

#### 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.



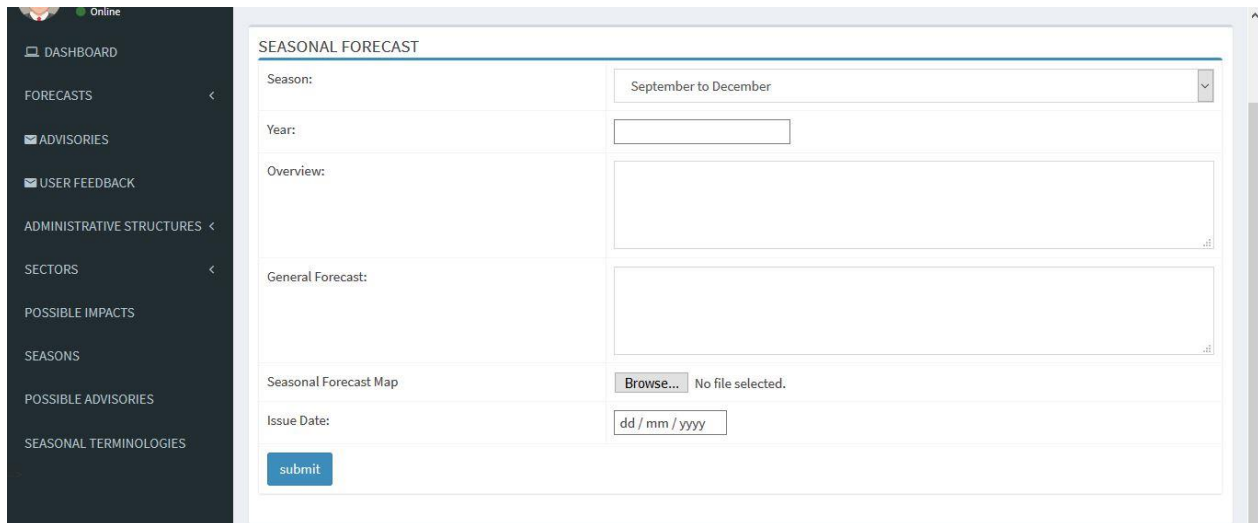
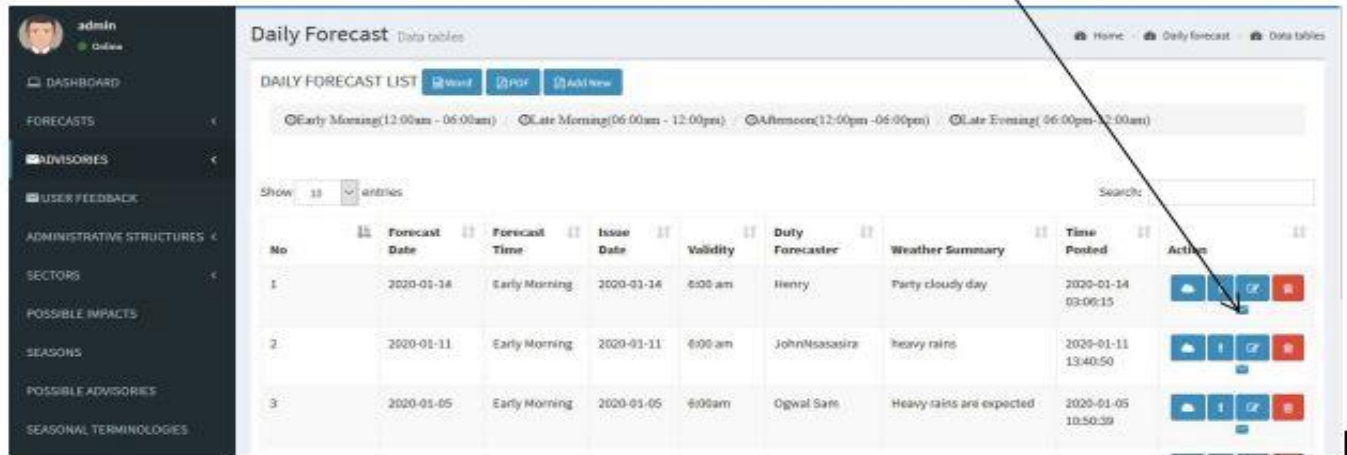


Figure 11 Seasonal forecast data entry form

### 4.3.2 Advisory data entry

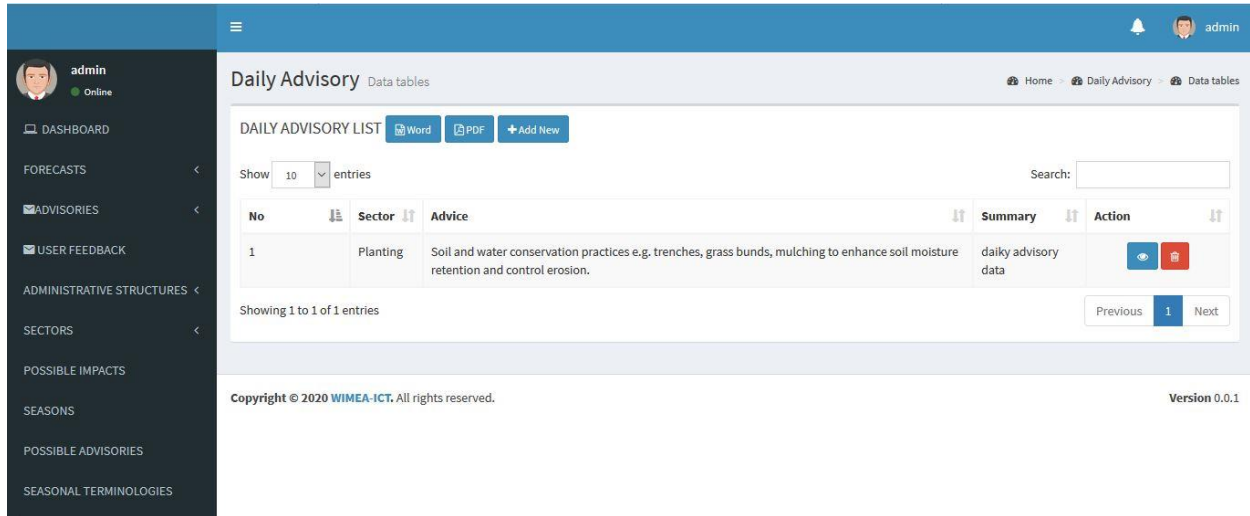
To input an advisory, for a specific forecast, follow the steps below:

**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.



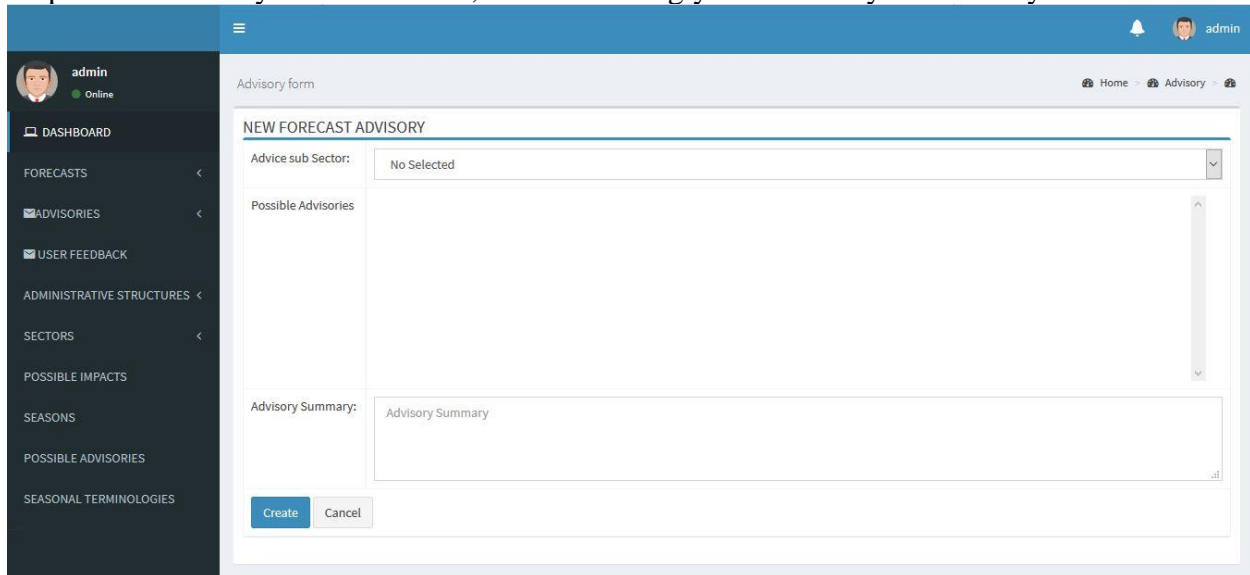
No	Forecast Date	Forecast Time	Issue Date	Validity	Duty Forecaster	Weather Summary	Time Posted	Action
1	2020-01-14	Early Morning	2020-01-14	6:00 am	Henry	Partly cloudy day	2020-01-14 03:06:15	[Message] [Edit] [Delete]
2	2020-01-11	Early Morning	2020-01-11	6:00 am	John Nsamasira	heavy rains	2020-01-11 13:40:50	[Message] [Edit] [Delete]
3	2020-01-05	Early Morning	2020-01-05	6:00am	Ogwel Sam	Heavy rains are expected	2020-01-05 10:50:39	[Message] [Edit] [Delete]

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



The screenshot displays the 'Daily Advisory' page. On the left is a sidebar menu with options like DASHBOARD, FORECASTS, ADVISORIES, and USER FEEDBACK. The main content area is titled 'Daily Advisory' and includes a 'DAILY ADVISORY LIST' section with buttons for Word, PDF, and Add New. A table lists advisory entries with columns for No, Sector, Advice, Summary, and Action. One entry is visible for 'Planting' with advice on soil and water conservation. The footer shows 'Copyright © 2020 WIMEA-ICT. All rights reserved.' and 'Version 0.0.1'.

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



The screenshot shows the 'Advisory form' for creating a new forecast advisory. The form has a title 'NEW FORECAST ADVISORY' and includes the following fields: 'Advice sub Sector' (a dropdown menu currently showing 'No Selected'), 'Possible Advisories' (a large text area), and 'Advisory Summary' (a text area). At the bottom of the form are 'Create' and 'Cancel' buttons. The interface is consistent with the previous screenshot, featuring the same sidebar and top navigation.

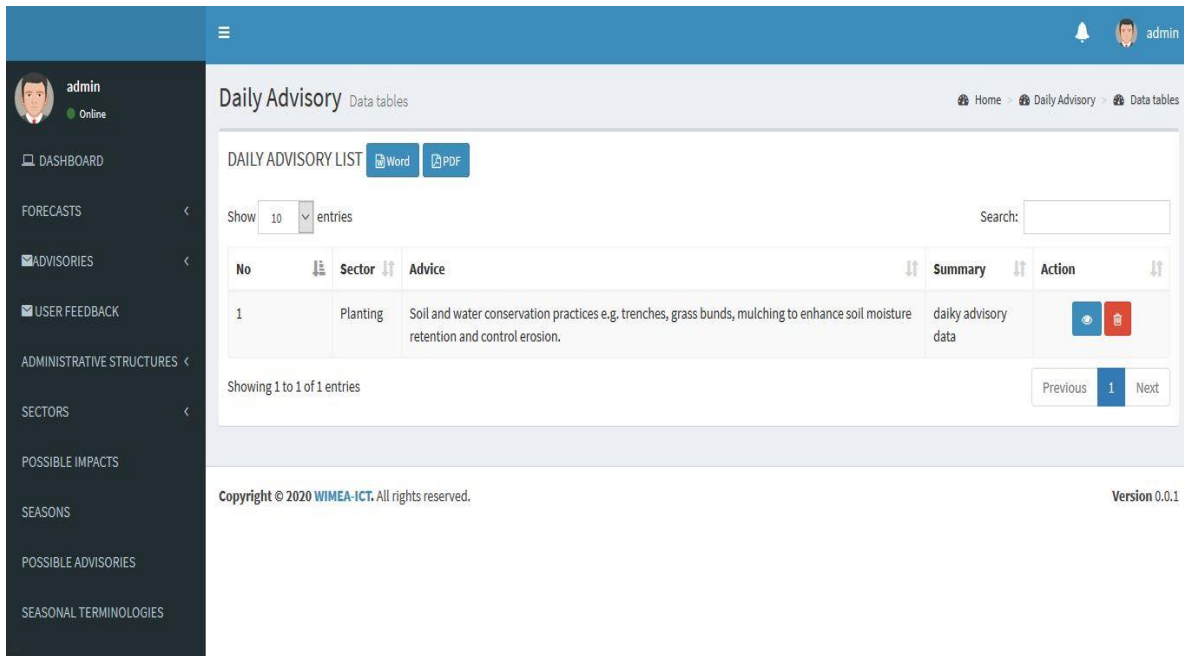
Figure 12 Advisory data entry form

## 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.



The screenshot shows the 'Daily Advisory' section of the WIMEA-ICT application. On the left is a dark sidebar menu with options: DASHBOARD, FORECASTS, ADVISORIES (selected), USER FEEDBACK, ADMINISTRATIVE STRUCTURES, SECTORS, POSSIBLE IMPACTS, SEASONS, POSSIBLE ADVISORIES, and SEASONAL TERMINOLOGIES. The main content area has a blue header with 'Daily Advisory' and 'Data tables'. Below this is a 'DAILY ADVISORY LIST' with buttons for 'Word' and 'PDF'. A search bar and a 'Show 10 entries' dropdown are present. A table displays one advisory entry:

No	Sector	Advice	Summary	Action
1	Planting	Soil and water conservation practices e.g. trenches, grass bunds, mulching to enhance soil moisture retention and control erosion.	daily advisory data	 

Below the table, it says 'Showing 1 to 1 of 1 entries' and has 'Previous', '1', and 'Next' pagination links. The footer includes 'Copyright © 2020 WIMEA-ICT. All rights reserved.' and 'Version 0.0.1'.

Figure 13. 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