

Operation Manual on ARMIS Application: V2



Bangladesh Agricultural Research Council

Abbreviations and Acronyms

Admin: Administrator

ARMIS: Agricultural Research Management Information System

BARC: Bangladesh Agricultural Research Council

CSO: Chief Scientific Officer

ER: External Reviewer

GIS: Geographical Information System

Gov: Government

ICT: Information and Communication Technology

INGO: International Non-Governmental Organization

IO: International Organization

IR: Internal Reviewer

NARS: National Agricultural Research System

NGO: Non-Governmental Organization

Org: Organization

PDF: Portable Document Format

PI: Principal Investigator

V2: Version 2

Operation Manual

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1. Introduction

The agricultural research organizations specifically, National Agricultural Research System (NARS) institutes and universities have long been engaged in agricultural research in Bangladesh. Unfortunately, the information on agricultural research conducted by different institutions is scattered around and poorly organized i.e. there is no central depository of research information that can be accessed from a single source. A centralized online Agricultural Research Management Information System (ARMIS) has been developed by Computer and GIS Unit of Bangladesh Agricultural Research Council (BARC) to provide real time information for conducting, planning and evaluation of research together with need analysis and draw up new program/projects. ARMIS would enable the users to input, view, update, search and generate reports online according to the privilege set for the specific user level.

The activities of the ARMIS have been designed to be executed in collaboration with all who have institutional responsibility and interest in activities in the broader area of agricultural research; covering land, soil, water, crop, livestock, fisheries, forestry, socio-economics, policy and environment etc. BARC as the custodian, shall be maintaining the research database in an organized, updated and sustainable manner.

This manual describe how to use ARMIS web application for different types of user. This briefly describe how a visitor will access the app and use it, a user can entry, edit, update research data, and a reviewer can review the data.

2. Overview of the system

2.1 What is ARMIS: Essentially, ARMIS is a gizmo for informed decision making. The on-line ARMIS database is to provide a single source location of agricultural research information on projects/programs/activities in order to enable the research planners/managers and other users to make use of it, to identify research needs and in initiating new research programs/projects as per priority and implementation thereof. The configuration of the service-oriented initiative of ARMIS tool is intended to facilitate users to view, update, search/query and generate report according to the user's privilege and specific need.

2.2 Rationale of ARMIS: For sustainable development of agricultural research; functionality of a modern agricultural research management system and access by all, at all times to the near-real time information is crucial. For the agricultural development practionners in general and the research community in particular, there is a crying need of a technological tool for knowledge management to bring efficiency in research. In this context, establishment and maintenance of an effective Agricultural Research Management Information System (ARMIS) was prudentially thought to be the solution. ARMIS, as a central depository could assist by way of providing the required research information for understanding the strength and weakness of the past, planning future research and economization of research investment by avoiding extravagant recurrence. The objectives of ARMIS are-

- To gather and input research projects/programs related information of NARS and other organizations and accordingly develop a comprehensive and effective ARMIS database and application.
- To ensure availability of information for the researchers, policy planners and others in an organized and timely manner through ICT based communication channel and
- To develop sustainable repository/hub of agricultural research information/findings for the users with up to date information.

3. How ARMIS can help: In order to make ARMIS more workable; data entry and retrieval procedure restructured and based on the feedback from the training/workshop participants and knowledgeable sources, the software has been turned more client responsive. With the updated and modified arrangement, the ARMIS should take the shape of an user-friendly genuine hub of centralized and integrated online application system for collection and retrieval of agricultural research information. The sustainability of ARMIS has been ensured by establishing an in-built mechanism of information flow from various agencies through a two way system and their integration into the database through internal review for authentication and external review for transparency.

4. How ARMIS works: The application has been designed to verify and validate the data in two steps; both by institute and by BARC. As there will be multiple user in each division/department of an organization who will enter research data, one internal reviewer (Head of the division/department) will verify and validate the data entered from his/her division. There will be an external reviewer from BARC or from the organizations or concerned persons who will also verify and validate the data reviewed by internal reviewer and finally the research entry will be published in the website. When an user enters data and submit, it will appear to the internal reviewer of his/her division/department for verification. If internal reviewer recommends, then it will go for verification by external reviewer. If internal reviewer rejects and pass some comments it will go back to the user for modification and when he/she resubmits it after modification, it will go again to the internal reviewer. When finally the internal reviewer recommends, it will go for verification by external reviewer (during project period by experts and on expiry by BARC division). If external reviewer approves, it will finally appear in the website. If the external reviewer rejects and makes comment, it will go back to the internal reviewer for modification/comments and appropriate action from the researcher doing the entry job and so on.

The application settings, like- inclusion of organization, division/department, research type, funding source, program area, commodity group, commodity, knowledge management, creation of users, reviewers (internal & external), focal points and external reviewer assignment will be made by the Super Admin (at BARC level) user and Admin (at institute level) user (limited to inclusion of division/department, creation of users, internal reviewers of his/her organization).

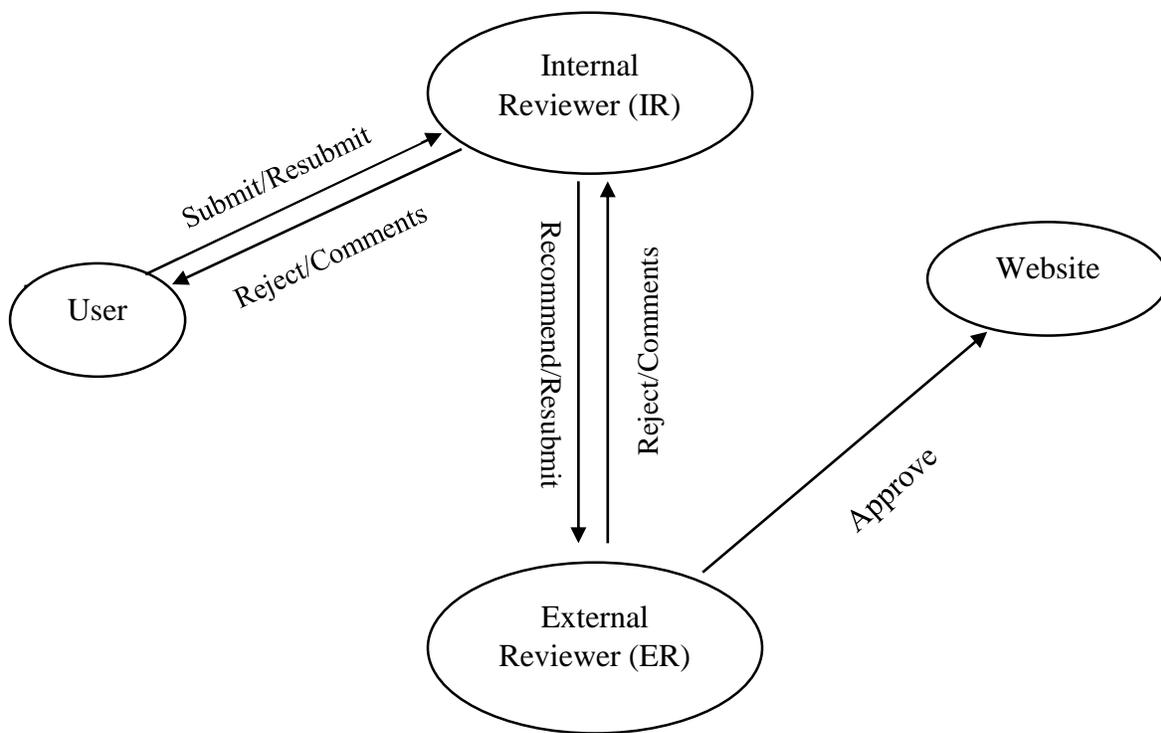
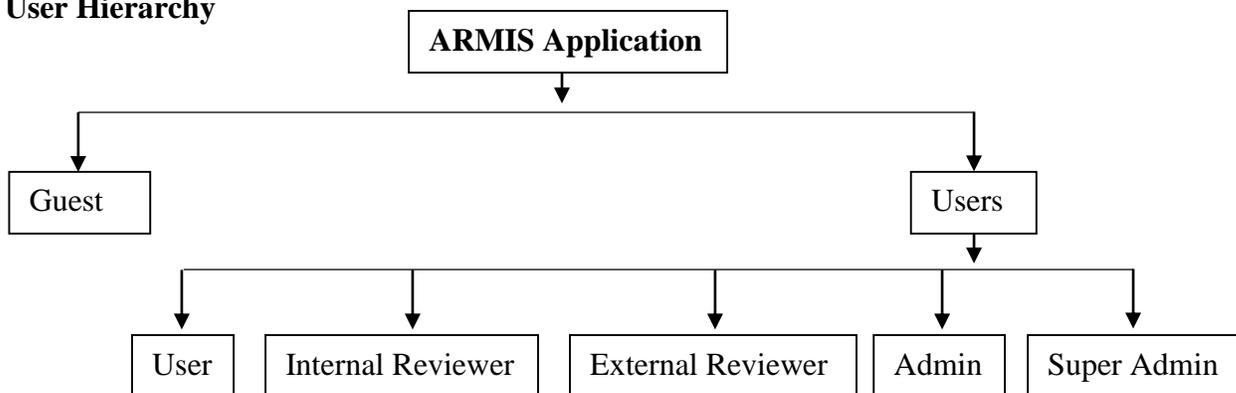


Fig. Research Entry Review Process

5. User management in ARMIS: The users have been categorized into two parts. Guest who can only access the research data entered into ARMIS database and Users who can enter and review the research data.

I. User Hierarchy



II. Users Role:

- 1. User:** An individual scientist of a division/department of an organization. Only be able to input data in ARMIS.

2. **Internal Reviewer (IR):** Head of the division/department or concern person assign by an organization. Responsible for validate/check the data entered by divisional scientists.
3. **External Reviewer (ER):** Except head of the division/department and not below CSO to check entries recommended by Internal Reviewer (IR) from specific organization/organizations or designated by BARC Authority.
4. **Admin:** Focal Point or Contact Person of an organization. S/he will observe activities of the User of his/her organization and control administrative settings on behalf of his/her organization.
5. **Super Admin:** Designated by BARC Authority. S/he will control all the administrative settings for ARMIS.

6. Guest Section

Those who want to access the research data of ARMIS database are known as Guest. As they are using our data we are keeping statistics about them, from where and for which purpose they are using ARMIS.

The screenshot displays the ARMIS (Agricultural Research Management Information System) web application interface. At the top left is the BARC logo. The main header features the 'ARMIS' logo in large blue letters, with the full name 'Agricultural Research Management Information System' below it. A navigation menu includes links for Home, Research Summary, Search, About Us, User's Guideline, Contact Us, and Report. A status message indicates that 21223 research entries have been reached. The interface is divided into two main sections: 'Login' and 'Sign Up'. The 'Login' section has an 'Email' input field and a 'Login' button. The 'Sign Up' section contains several input fields: 'Name' (with placeholder 'Enter Full Name'), 'Organization', 'Email' (with placeholder 'Email (Must be valid and it will b...)', 'Country' (a dropdown menu currently set to 'Bangladesh'), 'Profession' (with placeholder 'Profession, Ex- Scientist, Resea...'), 'Purpose' (a dropdown menu with 'Please select purpose'), and 'Phone'. A 'Signup' button is located at the bottom right of the Sign Up section.

Access to the ARMIS web Application: Provide the URL <http://armis.barcapps.gov.bd> into the address bar of any browser (e.g- Mozilla Firefox, Internet Explorer, Google Chrome etc.) and press **ENTER**. ARMIS **Guest tracking** page will appear.

Guest Sign up:

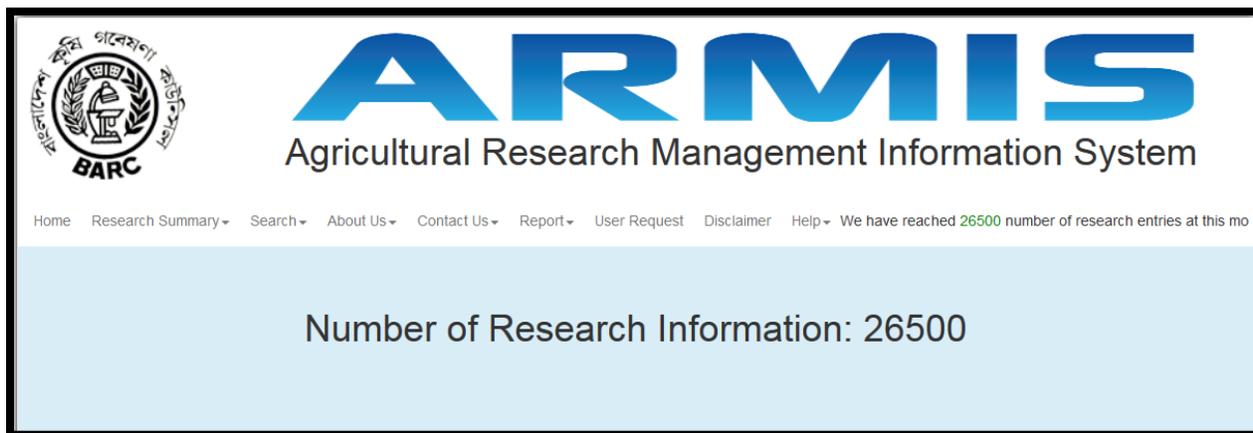
To access the whole ARMIS application you have to sign up first to complete our guest tracking system. In the home page fill all the fields of Sign up form as all the fields are mandatory and click on the signup button. An email notification will be sent after signup to activate your account. When sign up please put your valid email address which will be used to activate. From the email notification click on the link provided to activate your account. Once complete the sign up process login using your email for further access.

Note: Sign up is needed only for once.

Guest Login:

If already you are a guest then please login using your email from the home page login section.

After Login ARMIS **Home** page will appear. In the home page, total number of research approved by the reviewer will be displayed.



Through top menu one can get the facility to browse the whole application as visitor/user.

Top (main) menu with sub menus:



Home

Research Summary

- All
- Government Organization → List of Government Organization
- Autonomous/Semi Gov Org → List of Autonomous/Semi Gov Org
- NARS → List of NARS Organization
- Public University → List of Public University
- Private University → List of Private University
- INGO/IO/NGO/Private Org → List of INGO/IO/NGO/Private Org
- Foreign University → List of Foreign University

Search

- Search by keyword
- Search by Organization
- Search by funding source
- Search by Program Area
- Search by Commodity/Non-commodity
- Search by Researcher

- Custom Search
- On-going Research

About Us

- ARMIS
- Brochure

Contact Us

- BARC Personnel
- ARMIS Personnel
- Feedback

Report

- All
- By Organization
- Research Trend Analysis
- Similarity Check

User Request

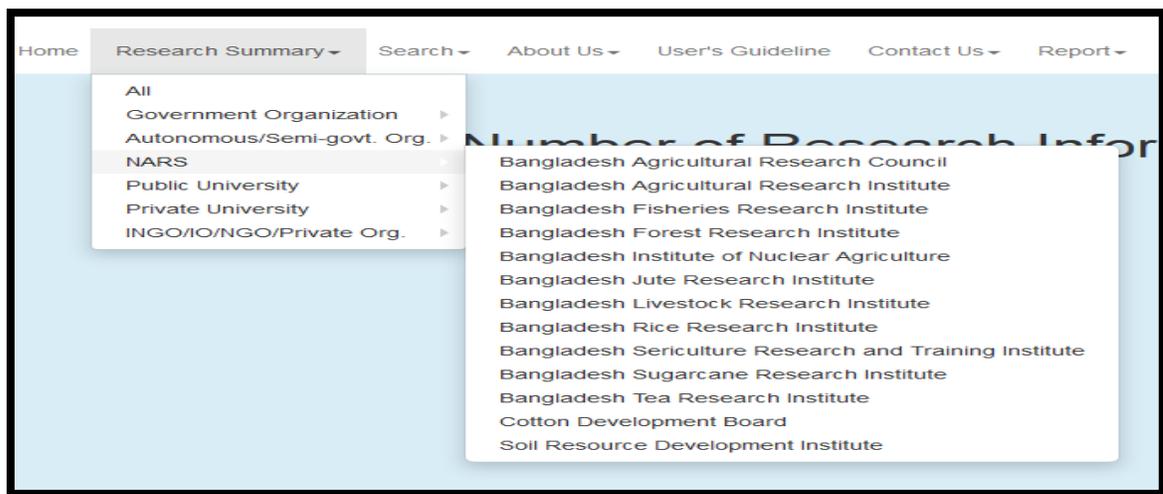
Disclaimer

Help

- Operation Manual
- Program Area and Commodity

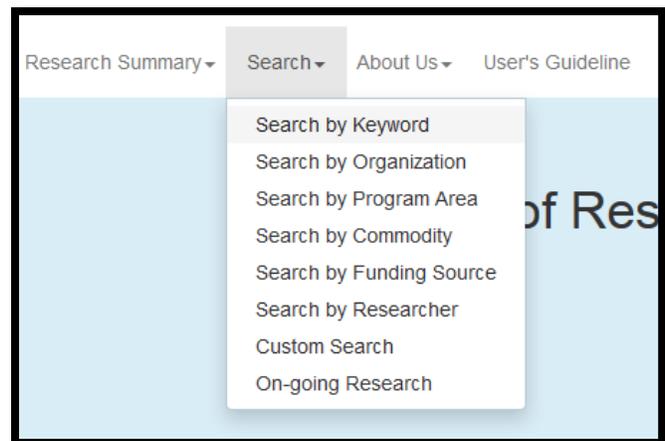
Top menus:

- I. **Research summary:** Search the Summary report of all the organizations or of a specific organization by **Research summary** menu categorized by **All, NARS, Gov Organization, Autonomous/Semi Gov Organization, Public Universities, Private Universities, Foreign Universities** and **NGO/INGO/IO/Private Org.** The guest can download the report as PDF.

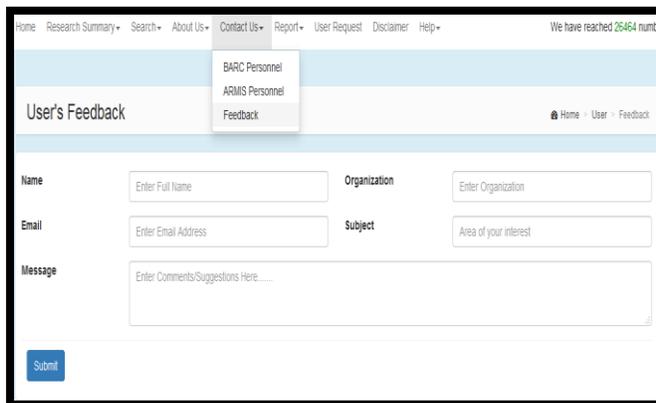


- II. **Search:** Guest/User may find the research information using different parameters by **Search** menu. Multiple search options available are given below-

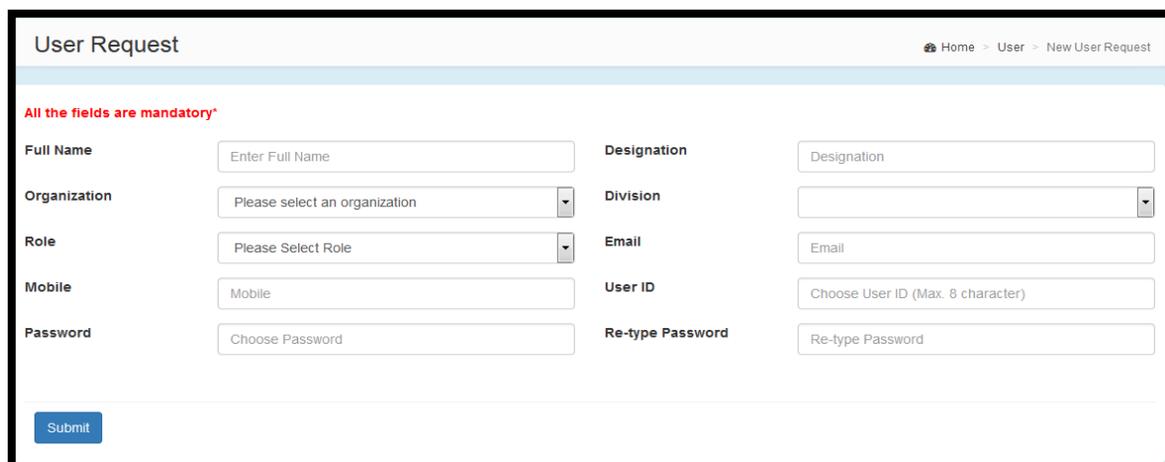
- a. **Search by keyword:** Guest/User may give any **keyword** of his/her desire. Application will search from all the entries according to given keyword(s) and show a list of entries from where user can see the details of an entry and also can take output in PDF. Further, the user can search with different keywords if needed from the same page again.
- b. **Search by organization:** Guest/User may select any organization of his/her desire. Application will search from all the entries according to the selected organization and show a list of entries from where user can see the details of an entry and also can take output in PDF. The user can search with different institute if needed from the same page as well.
- c. **Search by funding source:** Guest/User may select any funding source of his/her desire. Application will search from all the entries according to the selected funding source and show a list of entries from where user can see the details of an entry and also can take output in PDF. The user can search with different funding source if needed from the same page again.
- d. **Search by Program Area:** Guest/User may select any program area of his/her desire. Application will search from all the entries according to the selected program area and show a list of entries from where user can see the details of an entry and take output in PDF as well. Also the user can search with different program area if needed from the same page again.
- e. **Search by Commodity/Non-commodity:** Guest/User may select any commodity/Non-commodity group and all or a specific commodity/Non-commodity of that group of his/her desire. Application will search from all the entries according to selected commodity/Non-commodity group and commodity/Non-commodity and show a list of entries from where user can see the details of an entry and also can take output in PDF.
- f. **Search by Researcher:** Guest/User may give any researchers name and select any organization of his/her desire. Application will search from all the entries according to given researcher of that particular organization and show a list of entries from where user can see the details of an entry and also can take output in PDF.
- g. **Custom Search:** From **Custom search** section, a Guest/User may make an in-depth search according to multiple searching criteria. Keyword(s), Organization, Program area, Commodity Group, Commodity, Funding source, Budget range and Research or Project duration are the selection criteria for custom search. User can download the report of searching result as PDF also.
- h. **On-going Research:** Guest/User may find on-going research entered in ARMIS database by this menu.



- III. **About Us:** Guest/User can know about ARMIS and its Brochure through this menu
 - a. **ARMIS:** A Short description of ARMIS is available in this page.
 - b. **Brochure:** one can find ARMIS Brochure here.
- IV. **Contact Us:** Guest/User may find contact information related to ARMIS by this menu
 - a. **BARC Personnel:** Guest/User will find Contact information of BARC personnel related to ARMIS.
 - b. **ARMIS Personnel:** Contact information of ARMIS project personnel are available here.
 - c. **Feedback:** Guest/User can query or give suggestions on ARMIS through online (email notification) by this menu. Click on the link, Feedback form will appear. By putting Name, organization, email address and valuable message click on submit button. Feedback will be sent to designated ARMIS person and as soon as possible response will be made.



- V. **Report:** Business Intelligence part uses the entered research information to generate output like trend analysis, statistics of different organizations, program areas, commodity groups, divisions of organizations, similarity check and based on custom result.
- VI. **User Request:** One can make a user request to be an user to input research information of his/her personal or on behalf of his/her organization. Fill-up all the information carefully as all the fields are mandatory when sending user request. After sending request your information will be verified by the ARMIS authority and you will be notified by email (used in user request) whether you are eligible or not. If eligible will be an user based on request. Please follow the **User's** section of operation manual to deal with entry in ARMIS.

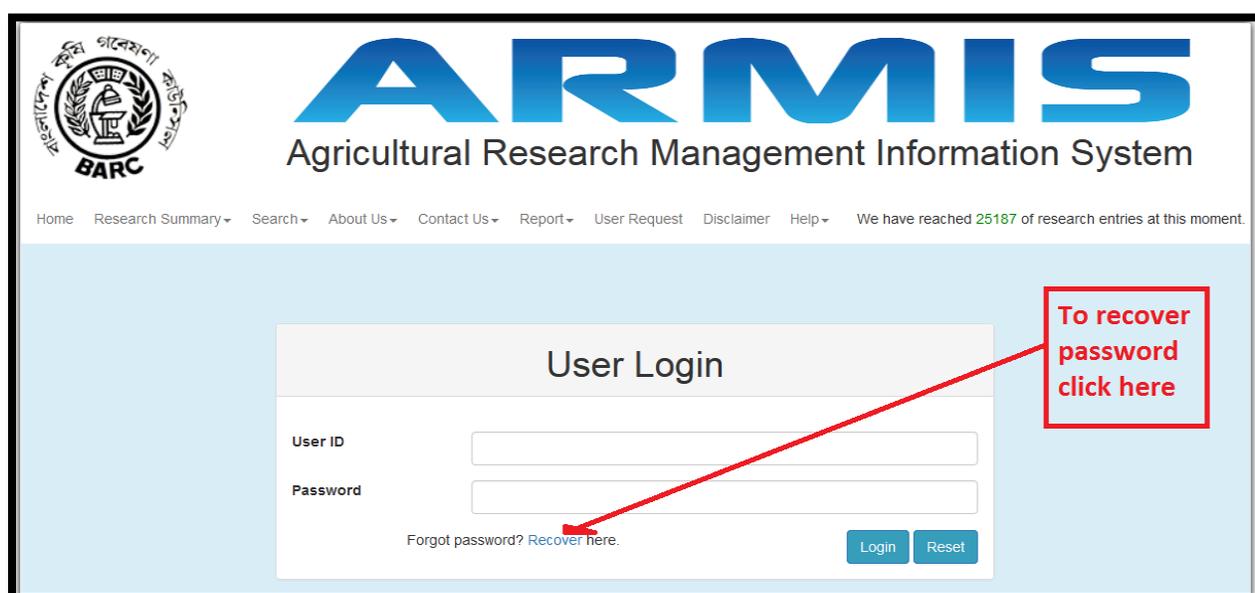


- VII. **Disclaimer:** To find ARMIS disclaimer click on this menu
- VIII. **Help:**
 - a. **Operation Manual:** To find ARMIS Operation Manual both pdf and video click here
 - b. **Program Area and Commodity:** To find ARMIS Program Area and Commodity click on this sub menu

7. User's Section

Those who will enter research information into ARMIS database and review those data are known as User.

Access to the ARMIS web Application as a user for data entry and management: Provide the URL <http://armis.barcapps.gov.bd/user> into the address bar of any browser (e.g- Mozilla Firefox,



Internet Explorer, Google Chrome etc.) and press **ENTER**. ARMIS **user login** page will appear.

7.1 User: As data entry user one have a user name and password (given when made user). Put the user name and password and press login button to login. If one forget password s/he can recover password by clicking on the recover link and putting user name and email. S/he will get a new password by email notification as long as s/he is a valid user.

After Login Research entry page will appear. To entry research information-

- i. Fill the fields as your information are available following the instructions.
- ii. One will have two options after put information- **Save/Drafts** and **Submit**.



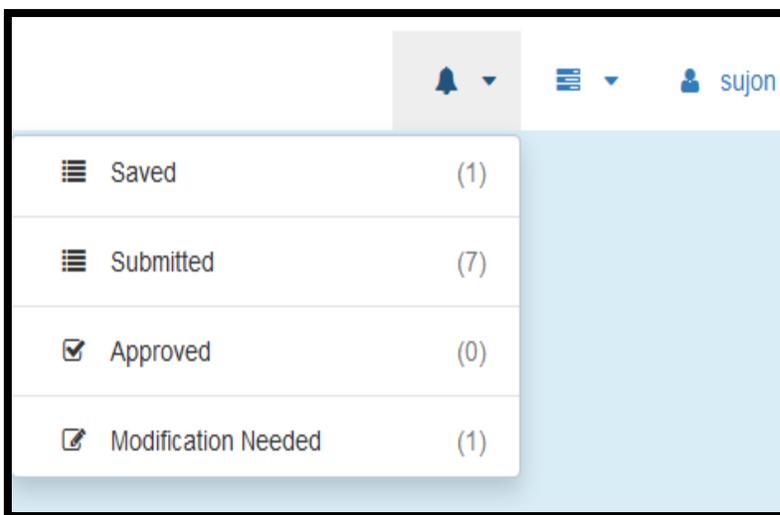
- iii. If you would not be able to put full data at a time save the information using **Save/Drafts** button.
- iv. If your information is available and you have enough time to put it then put all the information and submit it to check by internal reviewer. Unless one put all the mandatory fields can't submit it. Research ID only be given after submit an entry.

Note: to put **multiple** entity like commodity, organization, PI, Co-author, Funding source use add more button and to delete (if no need) use remove button.

To get back the research entry form after submit or save an entry again click on home menu and then from the left side menu click on Research Entry → New Research.

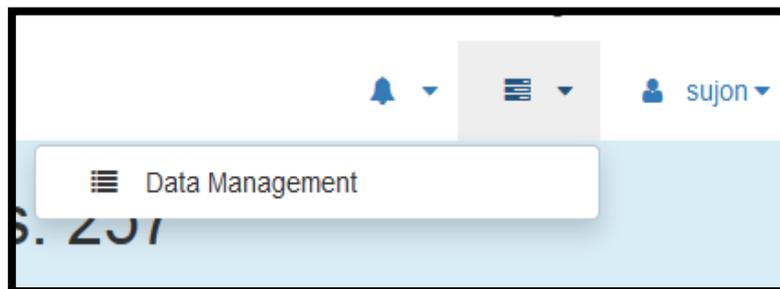
Top right menus:

- I. **Notifications:** all types of notifications will be shown here
 - a. **Saved:** one will find the saved research here. Click on the link, go to the list and complete the entries and submit to internal reviewer.
 - b. **Submitted:** one will find all the submitted research entry here. Click on the link, go to the list and make changes if the entries still remain pending. Once it is approved or recommended by Internal Reviewer you will not be able to edit them.
 - c. **Approved:** one will find here all the approved research submitted by himself. Click on the link, go to the list to see all. As they are approved you will not be able to edit them.
 - d. **Modification needed:** one will find all the research entry which are rejected by **Internal Reviewer** here. Click on the link, go to the list and modify the entries according to comments/suggestions of internal reviewer and resubmit.



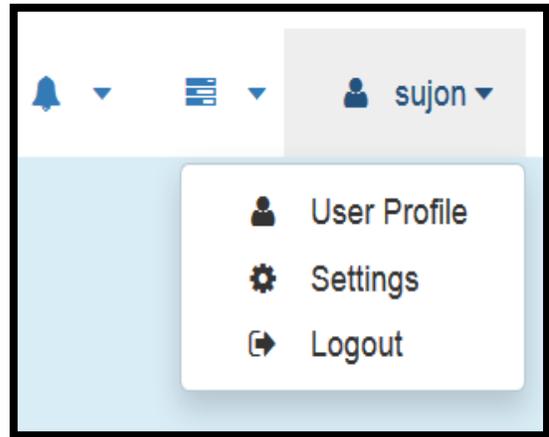
- II. **Activities:** Daily activities will be shown here

- a. **Data Management:** one may find daily activity (e.g Entry, Edit etc.) reports here. One has to go to the menu, fill the forms and submit to get the results.



III. **Profile Management:** one can view/change personal information here

- a. **User Profile:** clicking on this link one can see profile information here
- b. **Settings:** One can change password here. To do so one has to go to this menu, put old password, new password, retype new password and click on update button. Password will change as desired.
- c. **Logout:** After completion of the work use this menu to logout from ARMIS.



7.2 Internal Reviewer (IR): As **Internal Reviewer** one has to have a user name and password (given when created as internal reviewer). Put the user name and password and press login button to login. If one forget password s/he can recover password by clicking on the recover link and putting user name and email. S/he will get a new password by email notification as long as s/he is a valid **Internal Reviewer**.

After Login ARMIS **Home** page will appear. In the home page, a summary of status (for approval, approved, resubmitted, external's comment) of the entries will be displayed.

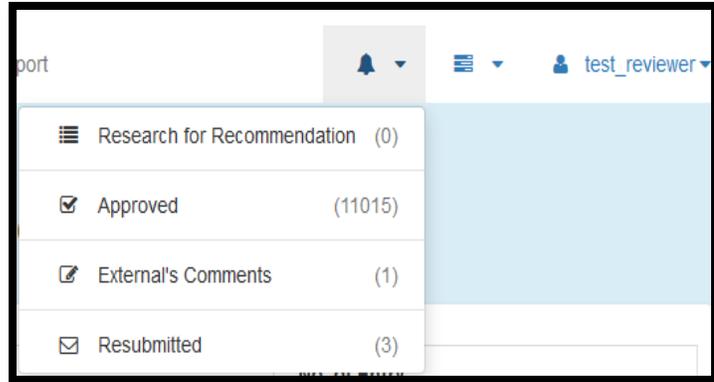
Recommended Entries: 18

Sl. No	Title	No. of Entry
1.	Research for Recommendation	0
2.	External's Comments	1
3.	Resubmitted	0

Top right menus:

- I. **Notifications:** all types of notifications will be shown here
 - a. **Research for Recommendation:** one can find the research submitted by divisional user. Click on the link, go to the list and check the entries and go for **Recommend/Comments**.
 - b. **Approved:** one can find here all the research approved by himself. Click on the link, go to the list to see all.

c. **External's Comment:** one may find all the research commented by **External Reviewer** using this menu. Click on the link, go to the list, you will find 3 (Three) options.



- i. **Edit:** if the change is minor and one is able to do that then modification to be done according to **External Reviewer** comments and resubmit it.
- ii. **Feedback:** if it seems that there is no need to change or differ with the comments of external reviewer feedback to external reviewer may be given using this button.
- iii. **Send to user:** if you have no support against external reviewer comments then please send back it to the user who has sent it to you.

External's Comments Home > Research > Comments

Pending Entries: 1

Show entries Search:

Sl. No	Research ID	Title	Total Budget (Taka)	Start Date	End Date	Comments	Comments Time	Resubmit	Feedback	Return to user
1	31748	Test 1: a Socio Economic Overview of Jhum Cultivation in the Hill District Bandarban at Bjri	100.00	00-00-2016		test for edit	22-05-2016 10:27: AM	Resubmit	Feedback	Send

Showing 1 to 1 of 1 entries Previous **1** Next

d. **Resubmitted:** one can find all the research entry resubmitted by user using this menu. Click on the link, go to the list and check the resubmitted entries and Recommend/Comment again.

II. **Activities:** Daily activities will be shown here

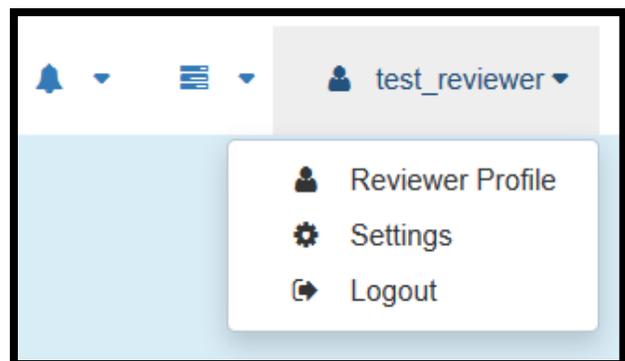
a. **Data Management:** one may find daily activity (Review) reports here. One has to go to the menu, fill the forms and submit to get the results.

III. **Profile Management:** one can view/change personal information here

a. **Reviewer Profile:** one can see profile information here

b. **Settings:** One can change password here. Click on the menu, put old password, new password, retype new password and click on update button. Password will change as desired.

c. **Logout:** After completion of the work use this menu to logout from ARMIS.

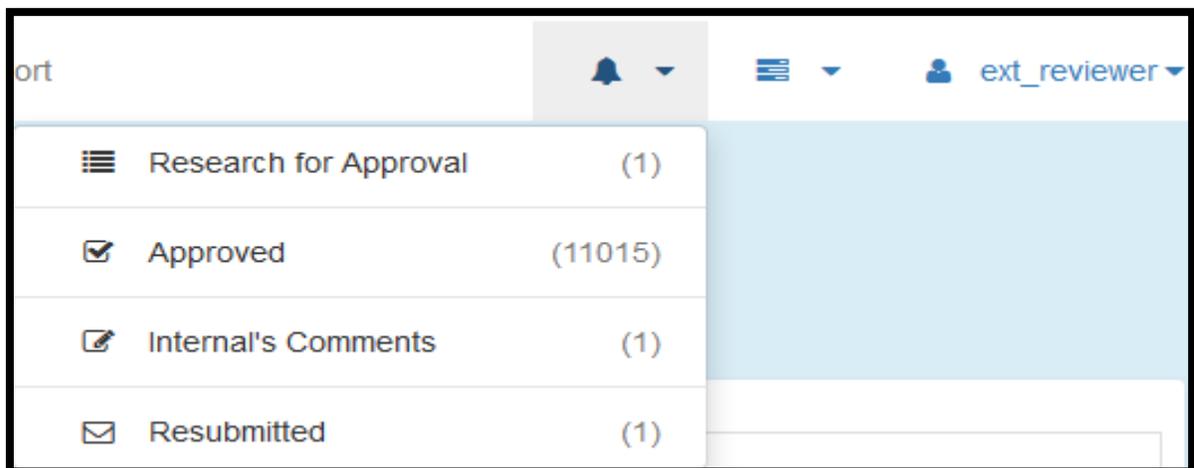


7.3 External Reviewer (ER): As **External Reviewer** one has to have a user name and password (given when created as external reviewer). Put the user name and password and press login button to login. If one forget password s/he can recover password by clicking on the recover link and putting user name and email. S/he will get a new password by email notification as long as s/he is a valid **External Reviewer**. After Login **ARMIS Home** page will appear. In the home page, a summary of status (for approval, approved, resubmitted, internal’s comment) of the entries will be displayed.

Approved Entries: 14		
Sl. No	Title	No. of Entry
1.	Research for Approval	735
2.	Internal's Comments	0
3.	Resubmitted	7

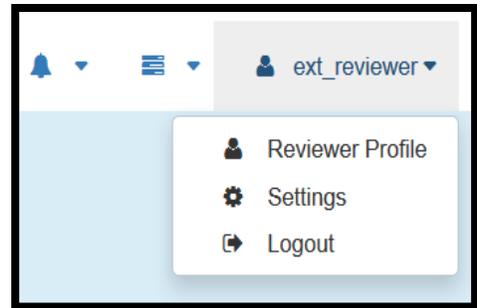
Top right menus:

I. **Notifications:** all types of notifications will be shown here



- a. **Research for Approval:** one may find the research recommended by internal reviewer of the organizations assigned to him. Click on the link, go to the list and check the entries and Approve/Comment.
- b. **Approved:** one may find here all the research approved by himself. Click on the link, go to the list to see all.
- c. **Internal’s Comment:** one may find all the research commented by Internal Reviewer using this menu. Click on the link, go to the list, one will have 2 (Two) options.
 - i. **Recheck:** One can recheck the entries according to internal’s comments and approve.

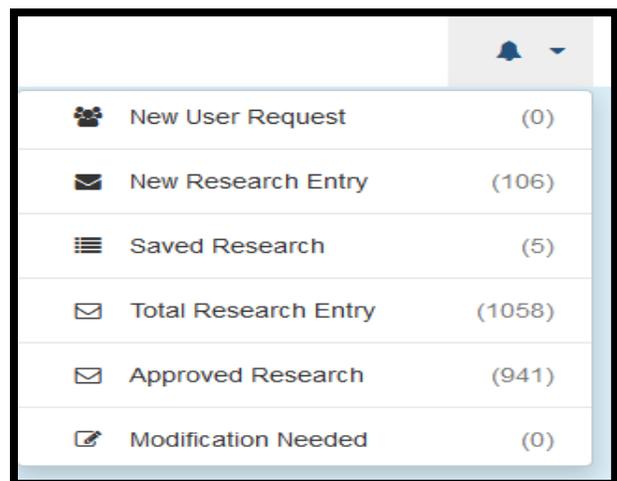
- ii. **Approve:** Directly one can approve the entries one by one using approve button in the approve column or select all and use approve button (below the table) to approve all entries at a time.
 - d. **Resubmitted:** one may find all the research entry resubmitted by user/internal reviewer using this menu. Click on the link, go to the list and check the resubmitted entries and Approve/Comment.
- II. **Activities:** Daily activities is shown here
- a. **Data Management:** one may find daily activity (Review) reports here. Go to the menu, fill the forms and submit to get the results.
- III. **Profile Management:** one can view/change personal information here
- a. **Reviewer Profile:** one can see profile information here
 - b. **Settings:** One can change password here. To do so one has to go to this menu, put old password, new password, retype new password and click on update button. Password will change as desired.
 - c. **Logout:** After completion of the work use this menu to logout from ARMIS.



7.4 Admin: As **Admin** user one has to have a user name and password (given when define as focal point or contact person). Put the user name and password and press login button to login. If one forget password s/he can recover password by clicking on the recover link and putting user name and email. S/he will get a new password by email notification as long as s/he is a valid **Admin user**. After Login ARMIS **Home** page will appear. In the home page, total number of research of Admin’s organization will be displayed

Top right menus:

- I. **Notifications:** all types of notifications will be shown here
- a. **New User Request:** User request from your organization which are pending will be displayed here. Click on the link, go to the list and approve the user which are valid.
 - b. **New Research Entry:** Here one can see the research entries of his/her organization which are not approved yet.
 - c. **Saved Research:** one can find the saved research of his/her organization here. Click on the link to see the saved entries.



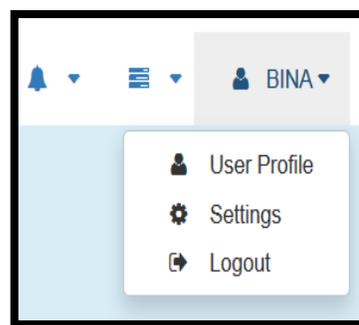
- d. **Total Research Entry:** one can see all the researches (Approved/Rejected) submitted by user of his/her organization by this option.
- e. **Approved Research:** one can find here all the approved research of his/her organization. Click on the link to see all.
- f. **Modification needed:** one can find all the research entries of his/her organization which are rejected by **Internal Reviewer** here. Click on the link to see the rejected entries.

II. **Activities:** Daily activities of the users will be shown here

- a. **Data Management:** you will find daily activities (e.g Entry, Edit etc.) reports here. One has to go to the menu, fill the forms and submit to get the results.

III. **Profile Management:** one can view/change personal information here

- a. **User Profile:** one can see profile information here
- b. **Settings:** One can change password here. To do so one has to go to this menu, put old password, new password, retype new password and click on update button. Password will change as desired
- c. **Logout:** After completion of the work use this menu to logout from ARMIS.



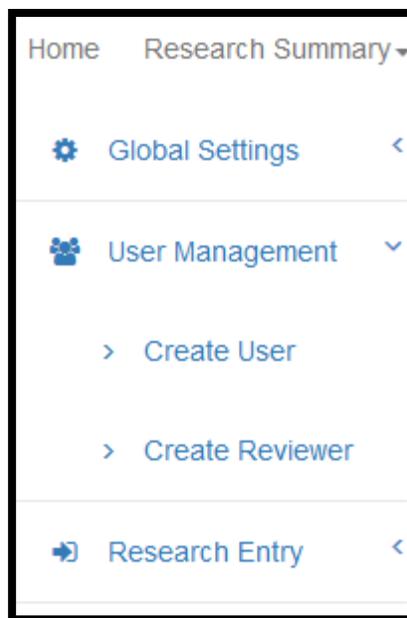
Left menus:

I. **Global Settings:** All the settings of ARMIS application is done by this option.

- a. **Division:** All the divisions of your organization are added in ARMIS application by this menu.

II. **User Management:** one can create Users, Internal Reviewer of own organizations by this option

- a. **Create User:** Data entry users are created by this option. Click on the menu, fill-up the form as all the fields are mandatory and submit to create a new user. Note down the User ID and password and provide it to the user for further login to the system.
- b. **Create Reviewer:** Internal reviewer are created by this option. Click on the menu, fill-up the form as all the fields are mandatory and submit to create a new internal reviewer. Note down the User ID and password and provide it to the reviewer for further login to the system.



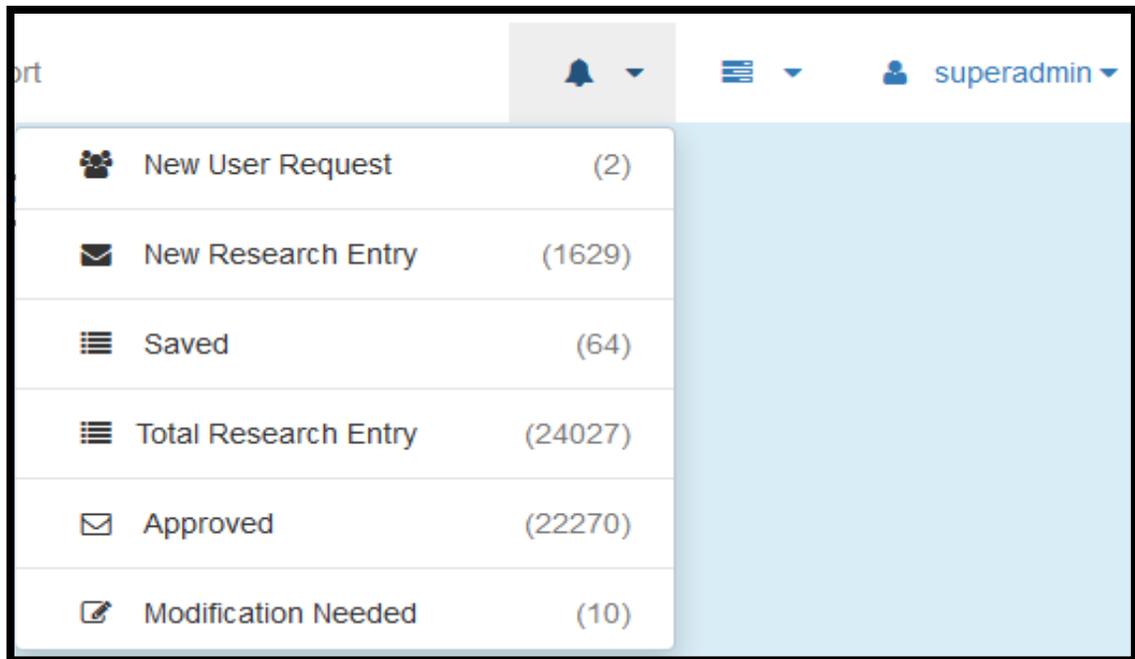
III. **Research Entry:** Research entry in ARMIS application is done by this menu

- a. **New Research:** You can entry research information by this menu.
- b. **Research List:** Entered research entries are viewed by this menu.

7.5 Super Admin: As **Super Admin** user one has to have a user name and password (given when designated and defined by BARC Authority). Put the user name and password and press login button to login. If one forget password s/he can recover password by clicking on the recover link and putting user name and email. S/he will get a new password by email notification as long as s/he is a valid **Super Admin user**. After Login **ARMIS Home** page will appear. In the home page, total number of approved research will be displayed.

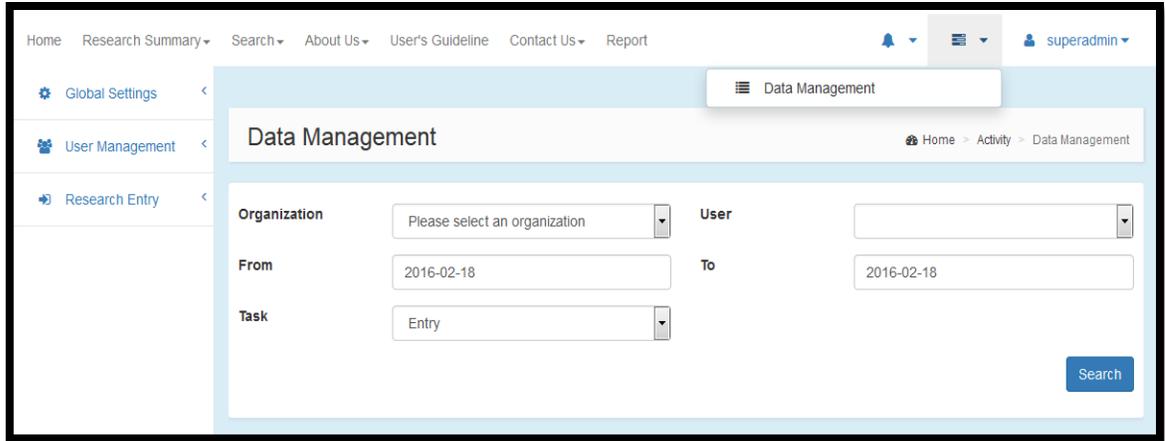
Top right menus:

I. **Notifications:** all types of notifications will be available here



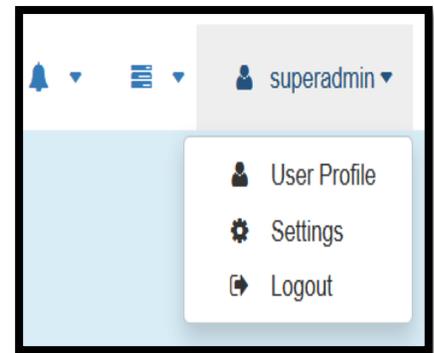
- New User Request:** User request from all organization which are pending will be displayed here. Click on the link, go to the list and approve the user which are valid.
- New Research Entry:** One can see the research entries of all organization which are not approved yet.
- Saved Research:** you will find the saved research of all organization here. Click on the link to see the saved entries.
- Total Research Entry:** one can see all the researches (Approved/Rejected) submitted by user of all organization by this option.
- Approved Research:** super admin can find here all the approved research of all organization. Click on the link to see all.
- Modification needed:** find all the research entry which are rejected by **Internal Reviewer** here. Click on the link to see the rejected entries of all organization.

- II. **Activities:** one can see daily activities of the users of all organization here
- a. **Data Management:** find daily activity (Entry/Edit/Review) reports of all users here. Go to the menu, fill the forms and submit, you will get the results.



III. **Profile Management:** one can view/change personal information here

- a. **User Profile:** one can see profile information here
- b. **Settings:** One can change password here. To do so one has to go to this menu, put old password, new password, retype new password and click on update button. Password will change as desired
- c. **Logout:** After completion of the work use this menu to logout from ARMIS.



Left menus:

- I. **Global Settings:** All the settings of ARMIS application is done by this option.
 - a. **Research Type:** Research type for ARMIS application is added by this menu.
 - b. **Visiting purpose:** Visiting purpose are added by this menu.
 - c. **Organization Type:** Type of the organization included in ARMIS is added by this menu.
 - d. **Organization Structure:** Organization Structure of different organization defined in ARMIS is added by this menu.
 - e. **Organization:** All the targeted organizations are added in ARMIS application by this menu.
 - f. **Division:** All the divisions of different organization are added in ARMIS application by this menu.
 - g. **Contact Person:** Focal Point/Contact person of different organization are added by this menu.
 - h. **Program Area:** All the program areas defined for ARMIS are added by this menu.
 - i. **Commodity/ Non-commodity Group:** All the commodity/Non-commodity groups defined for ARMIS are added by this menu.

- j. **Commodity/Non-commodity:** All the commodities/Non-commodities defined for ARMIS are added by this menu.
 - k. **Funding Source:** All the possible funding sources of agricultural research are added in ARMIS application by this menu.
 - l. **Knowledge Management:** All the knowledge management technologies defined for ARMIS are added by this menu.
- II. **User Management:** Creation of Users, Reviewer; external reviewer assignment for different organizations are done by this menu
- a. **Create User:** Different types of user are created by this menu. Click on the **Create User** menu, a form will appear, fill-up all the information as all the information are mandatory and click on create new button. Remember or note down User ID and password as required for login to the system.
 - b. **Create Reviewer:** Both External and Internal reviewer are created by this menu. Click on the **Create Reviewer** menu, a form will appear, fill-up all the information as all the information are mandatory and click on create new button. Remember or note down User ID and password as required for login to the system.
 - c. **Assign Reviewer:** External reviewers are assigned to different organization by this menu. Click on the link, a list of all external reviewer will appear. Click on the **Assign** button (available in the right side of a row) of corresponding reviewer to assign. If want to assign only organization to an external reviewer select only organization. If want to assign organization and specific program area of that organization select organization and program area. If want assign more than one organization or program area then use add more button.
- III. **Research Entry:** Research entry in ARMIS application is done by this menu
- a. **New Research:** one can enter research information by this menu.
 - b. **Research Edit:** one can directly edit an entry using this menu. Go to the page, search the entry by **Research ID** and click on edit button available in the right corner of the search result to edit the entry.

8. Conclusion

It is envisaged that, the service-oriented approach of ARMIS will make it possible for the users from any corner of the globe to view, provide online input of information, update and search/query as well as generate desired report. The system will provide opportunity for sharing of research information/data, review and formulate new research proposals and thus assist to avoid wasteful duplication. Further, the process will facilitate services for the researchers to find and manage information efficiently and effectively and add value to their insight. The system will thus benefit all the stakeholders engaged in the broad field of agricultural research and development.