

Project on Climate Resilient Agriculture

Plugin User Manual

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This document is the user guide for the plugin described in the Plugin Description Document (Phase III Deliverable), and available at <https://www.cse.iitb.ac.in/~pocra/>.

1. User needs to open the Qgis version 2.18.12 on his/her desktop PC where plugin is already added to his QGIS. Installation process is already described in the plugin description document. Once opened user needs to click on the plugin icon described in the Figure 1 below.

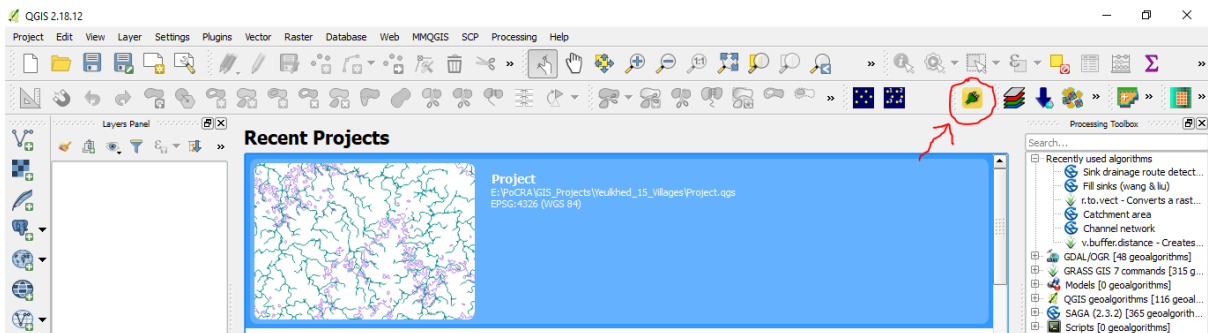


Figure 1 Qgis Interface with Plugin Icon

2. A database based upon the cluster code provided in the village shapefile has been prepared for all the project area. 15 folders for 15 districts has been prepared.
3. Each folder contains cluster-based sub folders selected in that district for project implementation. Name of these folders is kept based upon their cluster codes. This has been shown for the Akola district in the figure below. A cluster with code 501_pt-18_02 has been opened and data present in that folder is also described in the figure and table given below.
4. These cluster folders contain the following files required to run the plugin which have been already pre-processed. Pre-processing steps required on the files before running the plugin have been described in the Plugin Description Document.

Table 1 Data Provided

Sr.No	Data	Default Name	Data Source
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1	Cluster Boundary with Zones(Partial)	Zones	MRSAC
2	Land Use land Cover	LULC	MRSAC
3	Soil Layer	Soil	MRSAC
4	Cadastral Layer	Cadastral	MRSAC
5	Slope	Slope	Processing
6	Rainfall CSV	Rainfall	maharain.gov.in
7	Rainfall_5_Years CSV	Rainfall_5_Years CSV	maharain.gov.in
8	PET file	ETO_file	Walmi
9	Drainage	Drainage	Processing/MRSAC

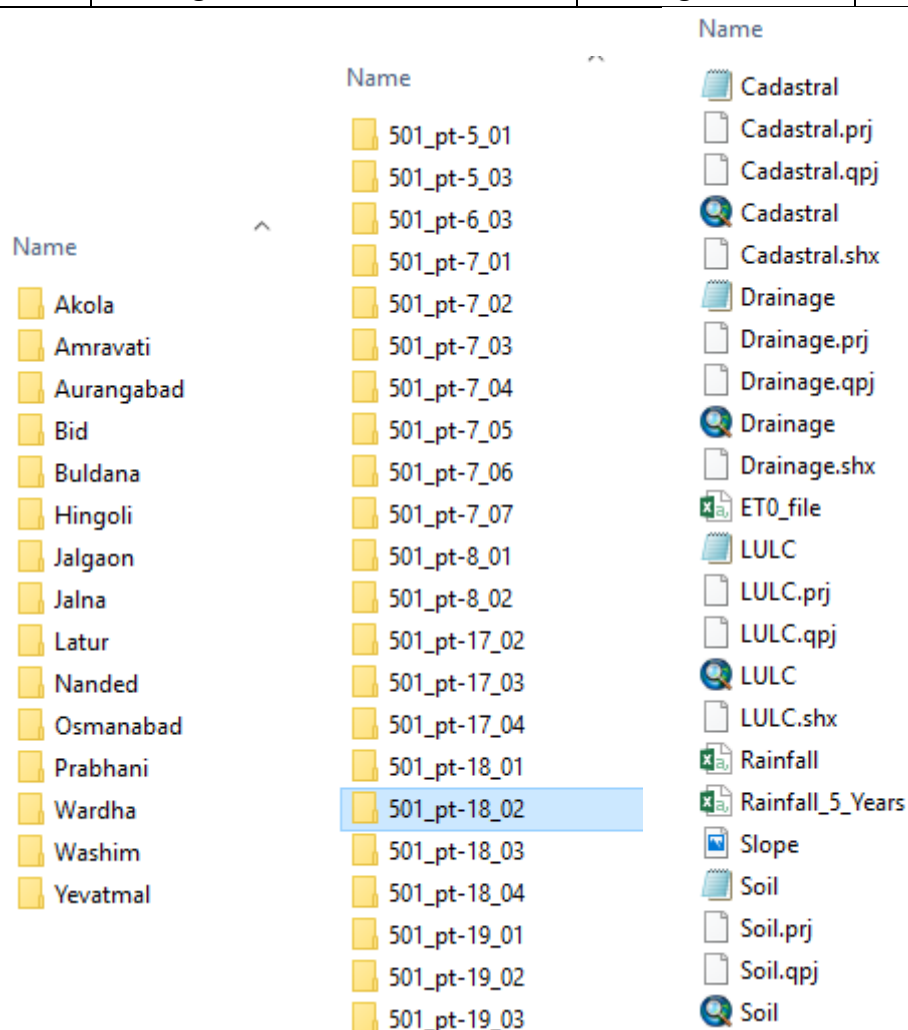


Figure 2 Data Base Folder

5. The cluster Boundary with Zones files shared in the folder requires further pre-processing. Small zones need to be merged with near ones to form the zone of optimum size. This step

requires some manual inspection. The process of preparation of zones is described in the separate document available at (<https://www.cse.iitb.ac.in/~pocra/Zoning%20Process.pdf>).

- There are two rainfall files provided in the folder namely Rainfall and Rainfall_5_Years. In the village shapefile, village and its circle are given. This information is used to prepare rainfall file and Rainfall_5_years file. In Rainfall_5_years file, for all the circles which belongs to a cluster, 5years rainfall data is given. This is shown in the image below.

Circle	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Dahihanda	2013	0	0	0	14.6	7.3	0	0	0	0	10	0	37	0	16	59	37	4
Ugawa	2013	0	0	0	14.2	6.1	0	5.1	0	0	0	0	26.6	0	19.5	58	42.6	1.3
Sanglud	2013	0	0	0	15	29	0	21	0	0	8	0	40	0	18	51	59	4.5
Dahihanda	2014	0	0	0	0	0	0	0	0	0	0	2	5	0	0	0	0	0
Ugawa	2014	0	0	0	0	0	0	0	0	0	0	2.3	25.4	0	0	0	0	0
Sanglud	2014	0	0	0	0	0	0	0	0	0	0	6.9	11.2	0	0	0	0	0
Dahihanda	2015	0	0	0	0	0	0	0	3	0	0	4	0	0	11	0	0	19
Ugawa	2015	0	0	0	0	0	0	0	0	0	4	9.2	8.1	49	13.1	0	0	13.2
Sanglud	2015	0	0	0	0	0	0	0	0	0	0	18.6	20	11	0	0	0	24
Dahihanda	2016	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Ugawa	2016	0	0	0	0	0	0	14.4	0	8	0	0	0	0	0	0	0	0
Sanglud	2016	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0
Dahihanda	2017	0	5.2	0	11.2	0	0	13.4	9	0	16	1.4	4.1	0	16.4	0	23	0
Ugawa	2017	0	0	0	0	0	12	8	0	0	0	22	20	0	41.2	0	30.8	10
Sanglud	2017	0	0	0	0	0	0	5	8	0	22	12	3	0	4	0	25	0

- Based upon above information, the average rainfall data for number of different circles is given in the Rainfall file. The average annual rainfall of last five years for circle present in cluster is compared with each year rainfall of same circle. For year whose rainfall value is close to average value is given in the Rainfall file. This is shown in the image below.

Circle	Year	1	2	3	4	5	6	7	8	9	10	11	12
Dahihanda	2017	0	5.2	0	11.2	0	0	13.4	9	0	16	1.4	4.1
Ugawa	2015	0	0	0	0	0	0	0	0	0	0	4	9.2
Sanglud	2014	0	0	0	0	0	0	0	0	0	0	6.9	11.2

- In case, user wants to run the plugin for different years, the data from the Rainfall_5_years file can be copied to Rainfall file.
- After this the plugin is ready to be run. After clicking the plugin icon, dialogue box with heading Kharif ET-Deficit calculator will appear. User can select the dataset folder on which it wants to run the plugin by browsing to the folder directory. With the default names given

to the files it will capture all the files automatically on selecting the folder. if the user wants to select the individual files he can do so. In following image with in Akola district folder cluster with code 501_pt-18_02 has been selected.

Kharif ET-Deficit Calculator ? X

Input

Data-set Folder :

Zones Vector Layer : Soil Cover Vector Layer :

LULC Vector Layer : Cadastral Map Vector Layer :

Slope Raster Layer : Drainage Vector Layer :

Daily Rainfall CSV File : Crops :

Sowing Threshold : Monsoon End Date in Oct : Rabi Crops:

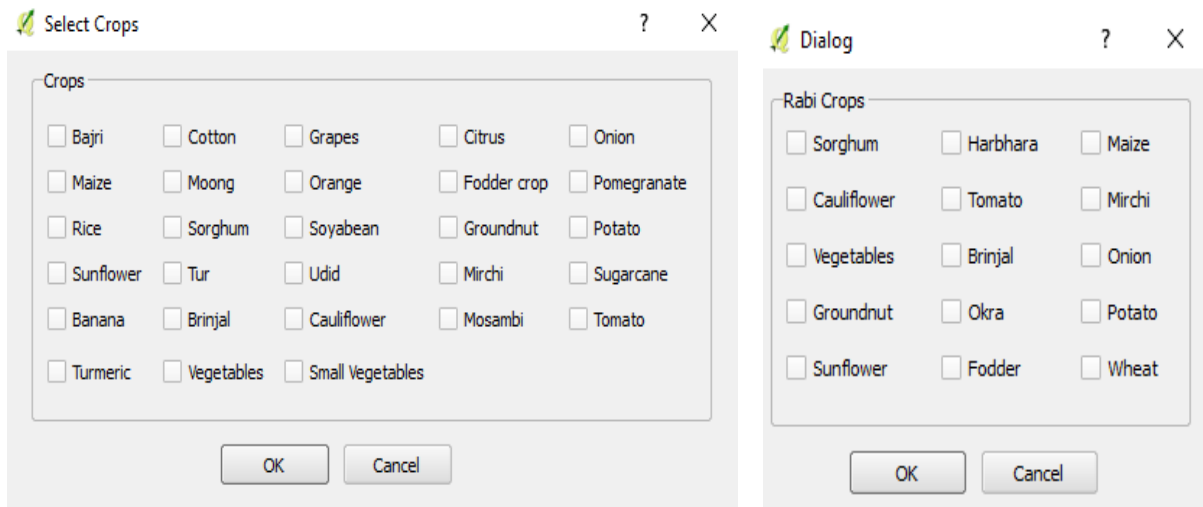
Output

Colour-code intervals for ET-Deficit map :





















Split an interval at :

Save As Image In
 Location :

10. By default, the plugin has captured all the required files present in the folder. The user needs to select the crops for which it wants to run the plugin. The crops dialogue boxes have been shown in the image below.
11. By default, sowing threshold of 30mm is given, User can change it to any suitable value.
12. By default, Monsson End Date in Oct is selected as 10th October. User can change it to any value in the month of October.
13. After completing all these steps plugin is ready to run.

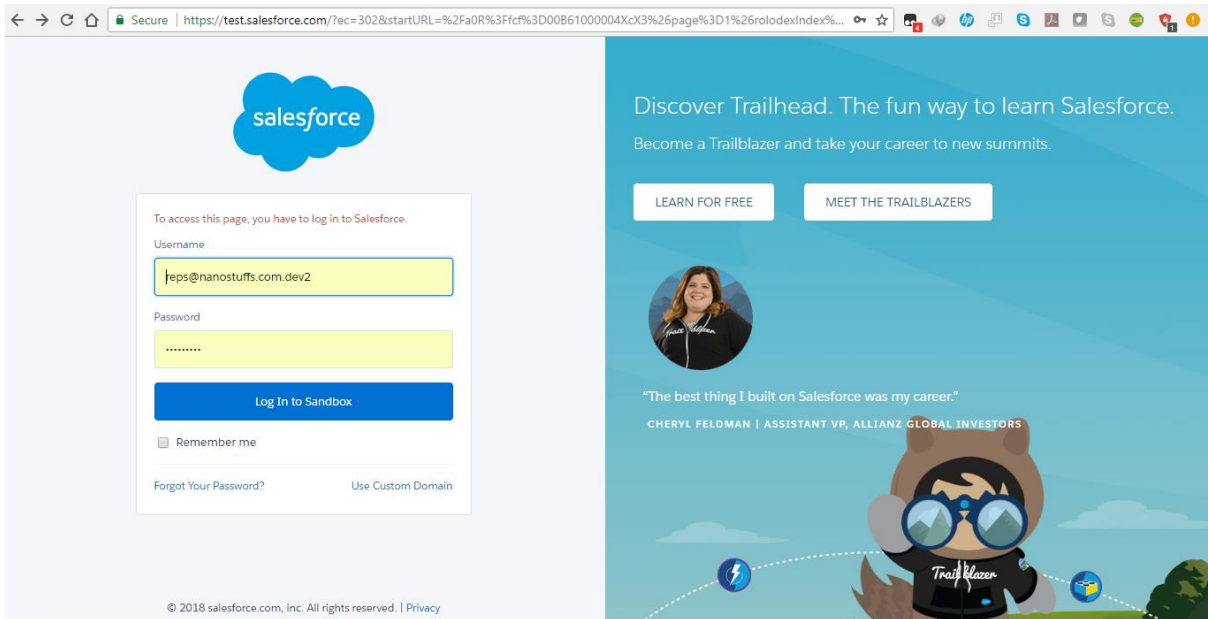


14. Once the plugin run its course, it will generate village wise output files in excel format for all the villages in the zone file.

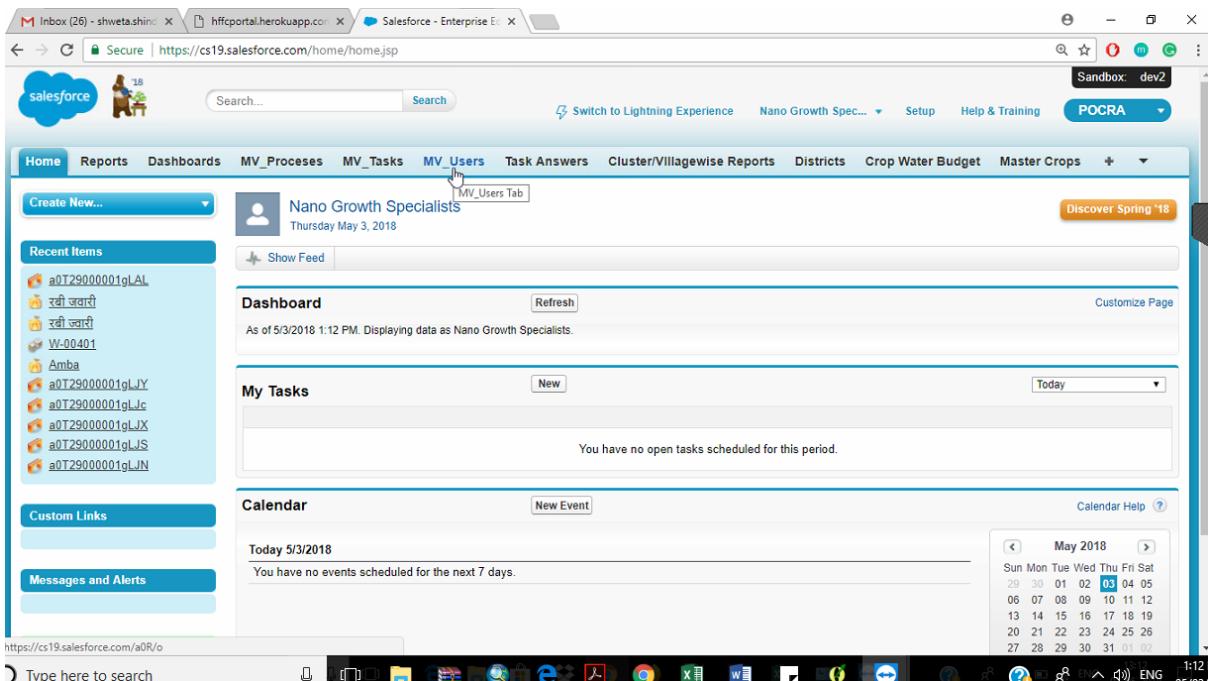
-  Village_wise_output_Akhatwada
-  Village_wise_output_Aliyabad
-  Village_wise_output_Anakwadi
-  Village_wise_output_Apatapa
-  Village_wise_output_Apoti Bk
-  Village_wise_output_Apoti Kh
-  Village_wise_output_Chachondi
-  Village_wise_output_Ghusar
-  Village_wise_output_Ghusarwadi
-  Village_wise_output_Kasali Bk
-  Village_wise_output_Kasali Kh
-  Village_wise_output_Khobarkhed
-  Village_wise_output_Lakhonda Bk
-  Village_wise_output_Lakhonda Kh
-  Village_wise_output_Marodi
-  Village_wise_output_Nirmalkhed
-  Village_wise_output_Pach Pimpal
-  Village_wise_output_Shamabad
-  Village_wise_output_Sultan Ajampur
-  Village_wise_output_Yawalkhed

15. This village wise data needs to be uploaded on the Salesforce server. By clicking on the flowing link, one can open the website where all the uploaded villages will be available. This will require id and password to be provided by the Nano stuff.

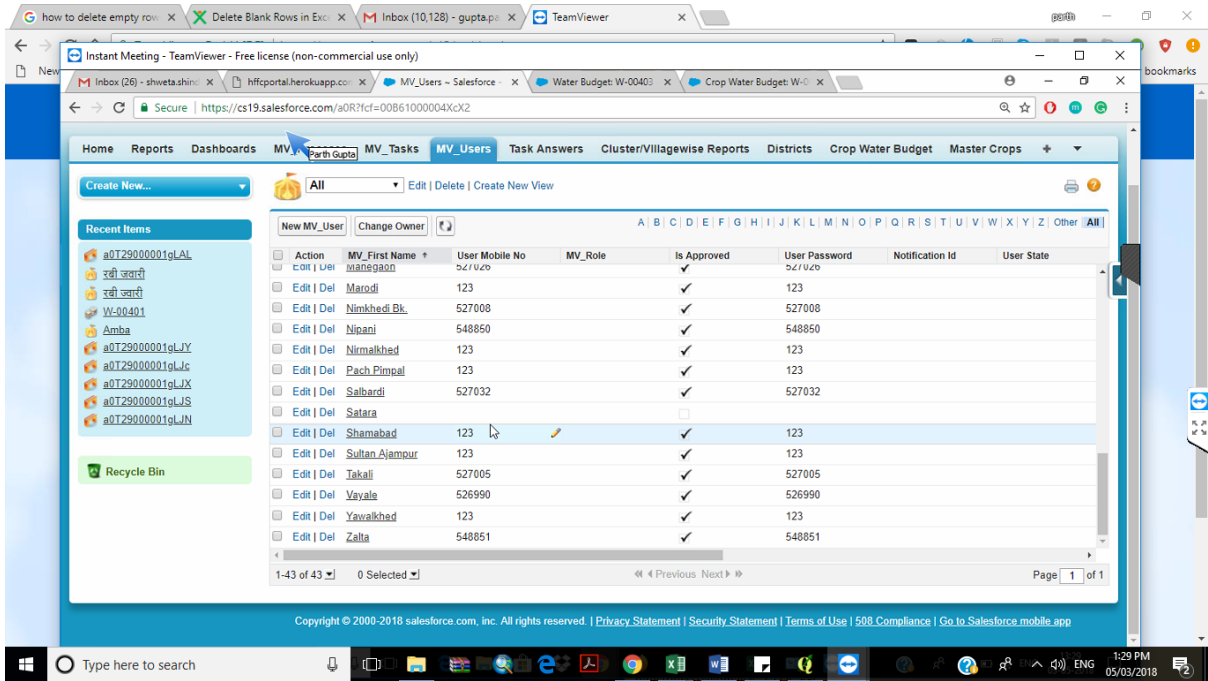
<https://login.salesforce.com/?ec=302&startURL=%2Fa0R%3Ffcf%3D00B61000004XcX3>



16. After successful login, user can check the villages for which data has already been uploaded. Go to Home->MV_Users.



17. This will open new window described in the image below. Here user can check for villages whose data has been uploaded. User can also delete the data by clicking on the delete button in front of the village name.



18. By opening the link given below one can open the window for uploading the data. The link will give one browse option where user can upload multiple village data at once.

http://hffcportal.herokuapp.com/pocra/multiple_uploads_live_pocra.php

