1.0 System Overview

Sugarcane Monitoring and Farmer Assistance System for SRA is an information system that aims to assist and provide recommendations faster to the farmers. It is also aimed at assisting the Mill district officer in creating observations that will help in making better analysis that can be used for providing more farming practices. Lastly, it aims to assist board members in decision making with regards to programs and sugar allocation

1.1 System Requirements

A. Software

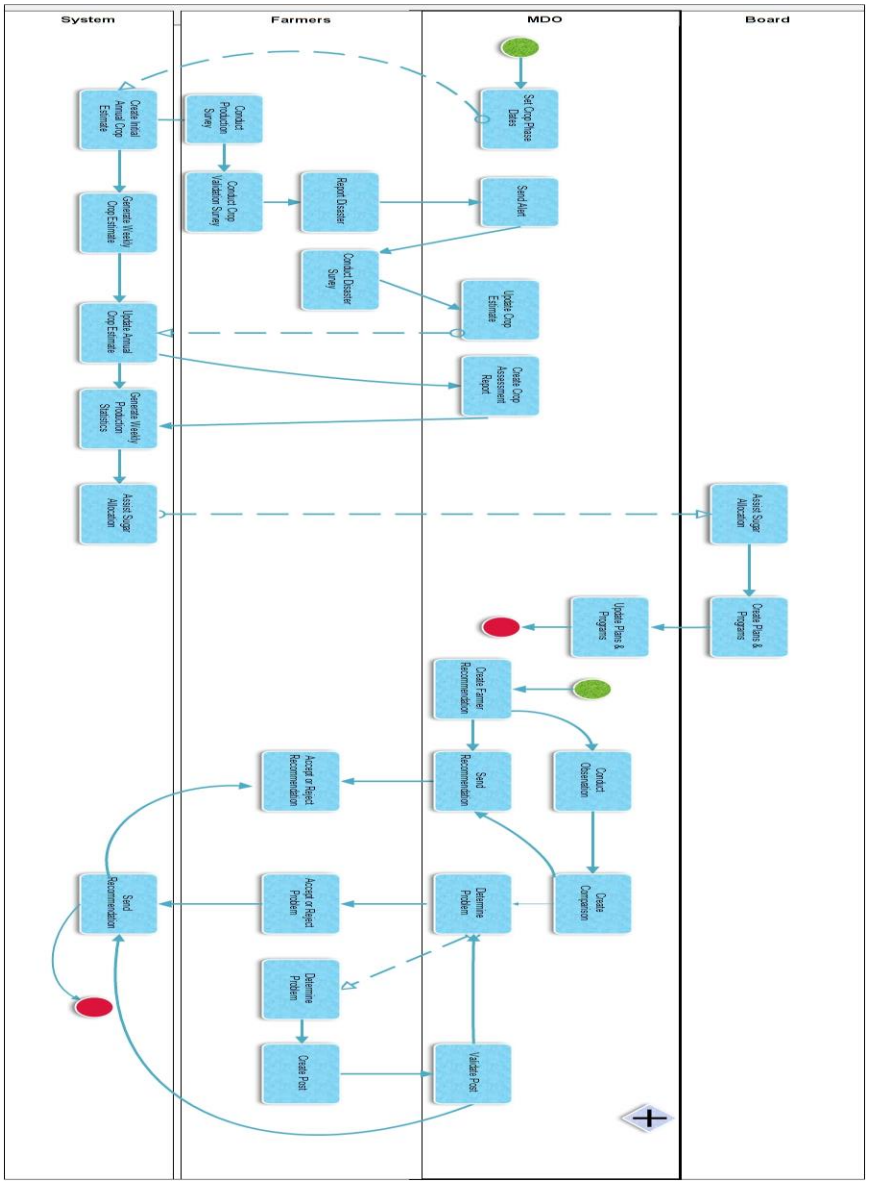
- Windows 7 or higher
- NetBeans 8.02
- Android Studio
- Apache Tomcat
- MySQL
- GitHub
- Google maps
- Internet Browser preferably Google Chrome

B. Hardware

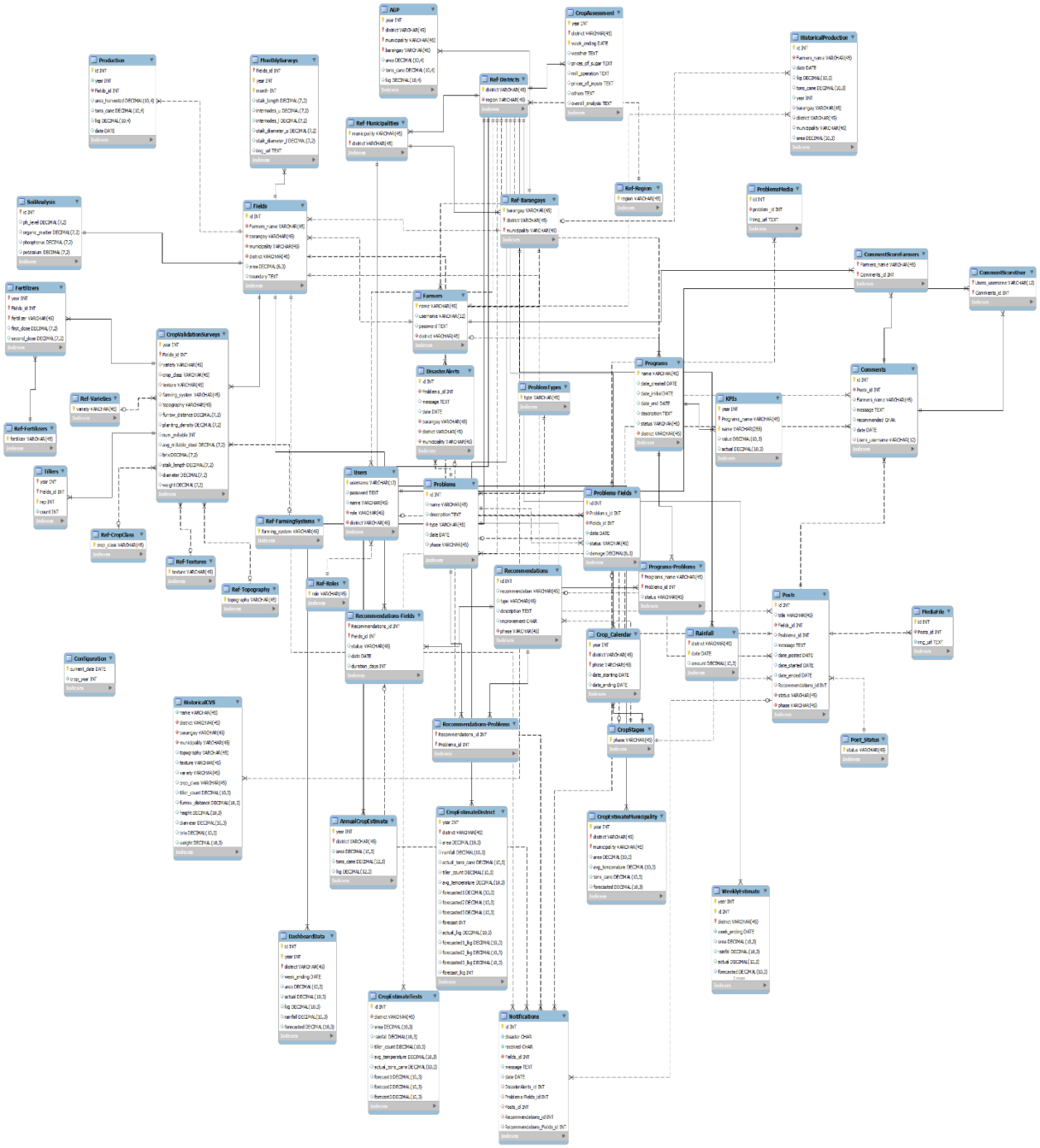
- 4GB RAM and above
- Intel i3 dual core and above
- 2GB free hard disk space
- Android Smartphone
- Internet Connection

1.2 System Conceptual Design

A. Swimlane Flowchart



B. Entity Relationship Diagram



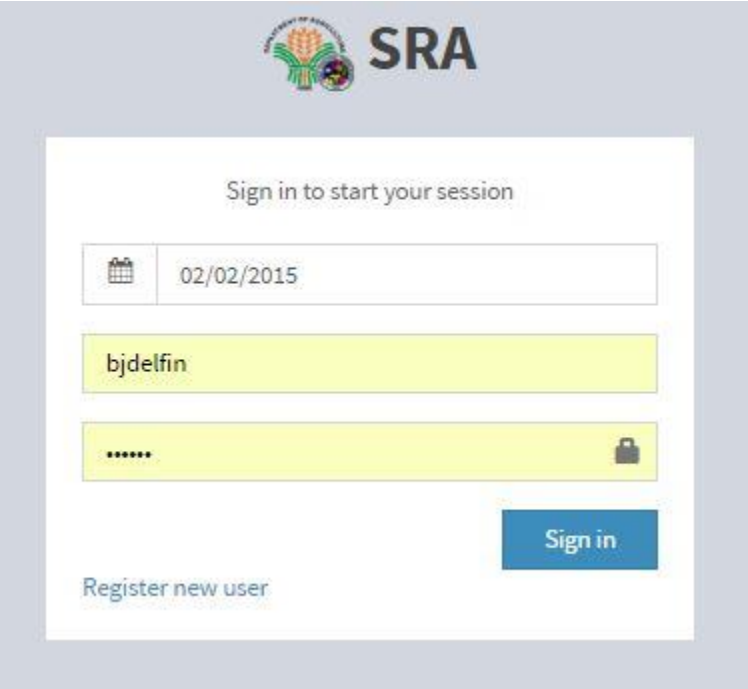
2.0 Screen Specifications

Screen Name : Login Screen

File Name : index.jsp

Description : The login page enables the user to enter his/her username and password in the input boxes. The “Login” button will transfer the user to the homepage. The “Register” button will bring the user to the register page.

Layout :

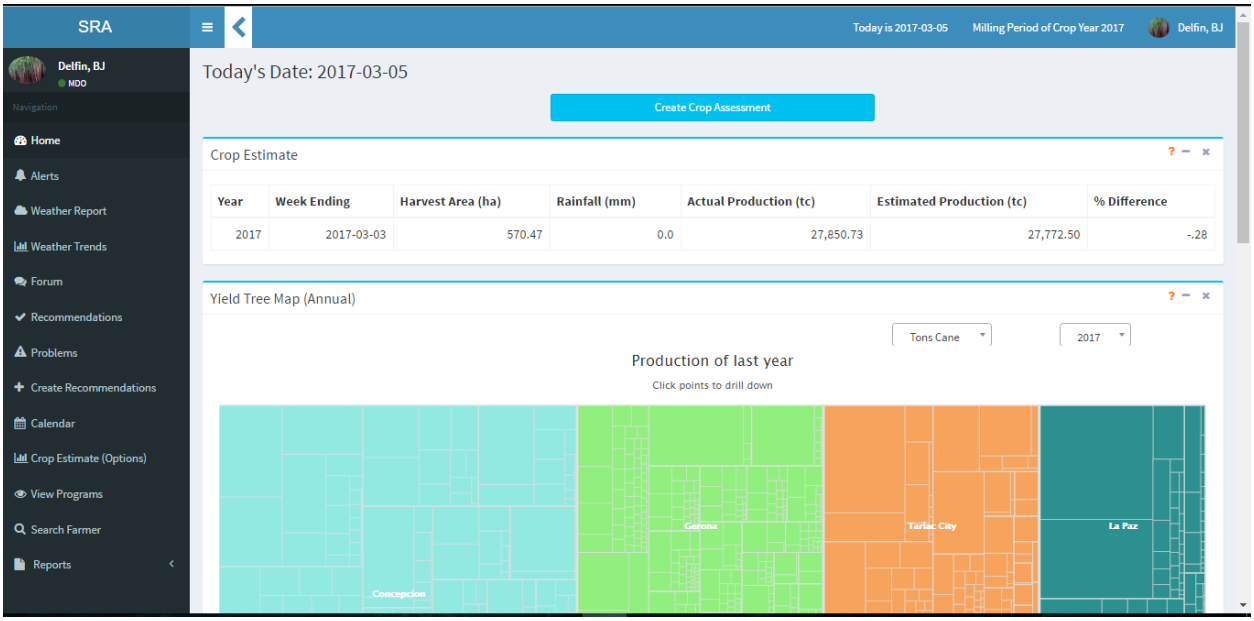


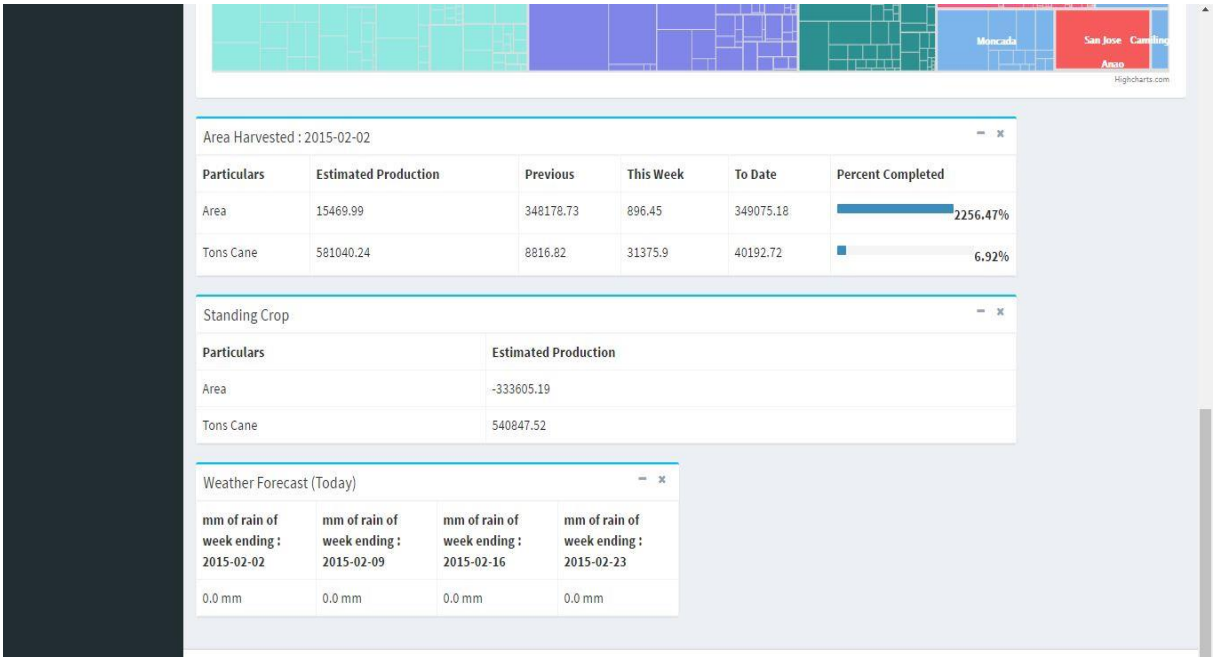
Screen Name : MDO HomeScreen

File Name : Homepage.jsp

Description : The page shows the homepage for the MDO user. The weekly production can be seen here as well as the treemap where the district production can be drilled down to the farmer level. The rainfall forecast can also be seen in this page.

Layout :


SRA
Today is 2017-03-05
Milling Period of Crop Year 2017
Delfin, BJ
Delfin, BJ
MDO
Navigation
Home
Alerts
Weather Report
Weather Trends
Forum
Recommendations
Problems
Create Recommendations
Calendar
Crop Estimate (Options)
View Programs
Search Farmer
Reports
Today's Date: 2017-03-05
Create Crop Assessment
Crop Estimate
Year | Week Ending | Harvest Area (ha) | Rainfall (mm) | Actual Production (tc) | Estimated Production (tc) | % Difference
2017 | 2017-03-03 | 570.47 | 0.0 | 27,850.73 | 27,772.50 | -.28
Yield Tree Map (Annual)
Tons Cane
2017
Production of last year
Click points to drill down
Concepcion
Gerona
Tarlac City
La Paz

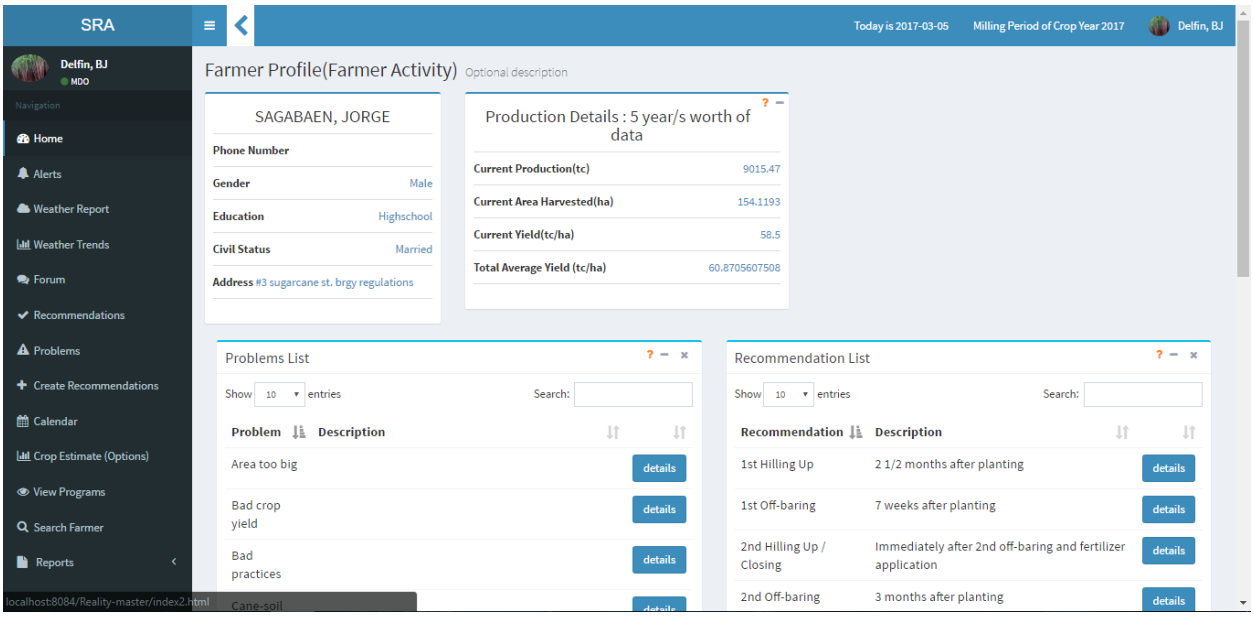

Moncada
San Jose
Camiling
Anao
Highcharts.com
Area Harvested : 2015-02-02
Particulars | Estimated Production | Previous | This Week | To Date | Percent Completed
Area | 15469.99 | 348178.73 | 896.45 | 349075.18 | 2256.47%
Tons Cane | 581040.24 | 8816.82 | 31375.9 | 40192.72 | 6.92%
Standing Crop
Particulars | Estimated Production
Area | -333605.19
Tons Cane | 540847.52
Weather Forecast (Today)
mm of rain of week ending : 2015-02-02 | mm of rain of week ending : 2015-02-09 | mm of rain of week ending : 2015-02-16 | mm of rain of week ending : 2015-02-23
0.0 mm | 0.0 mm | 0.0 mm | 0.0 mm

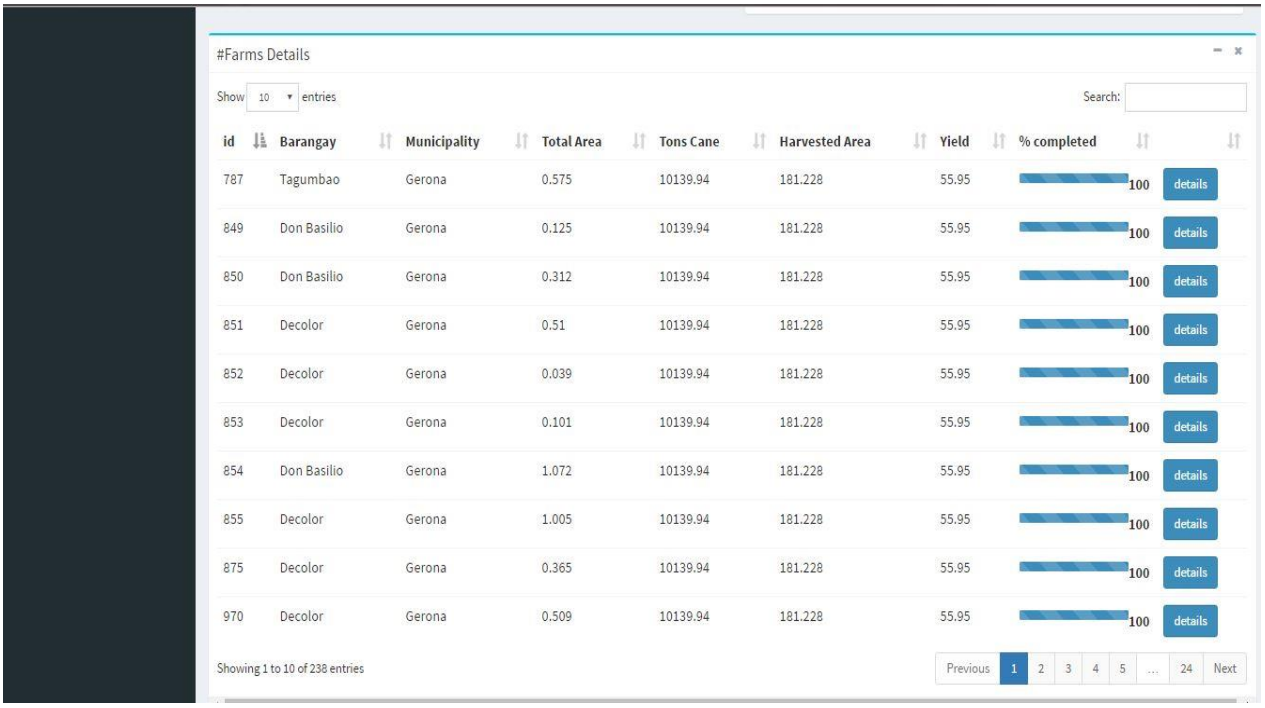
Screen Name : Farmer Profile

File Name : viewFarmerprofile.jsp

Description : The page shows the details of the farmer including his current production and the for the previous years. The list of problems can he has is displayed. The recommendations and programs can also be seen.

Layout :



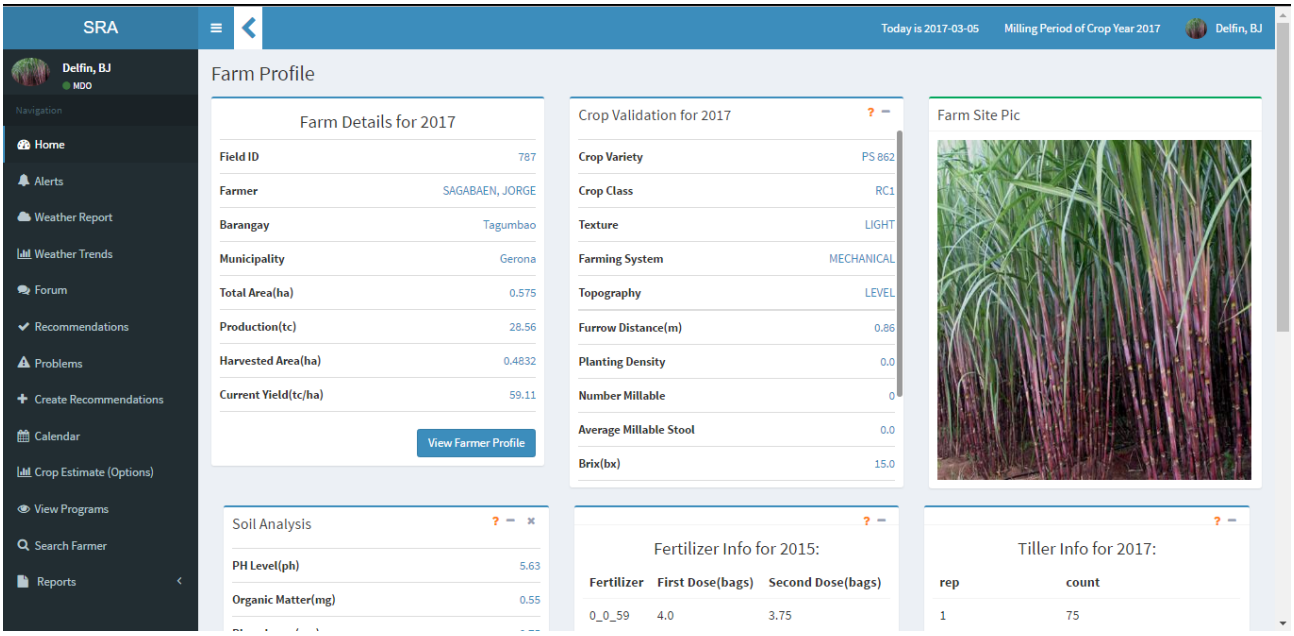


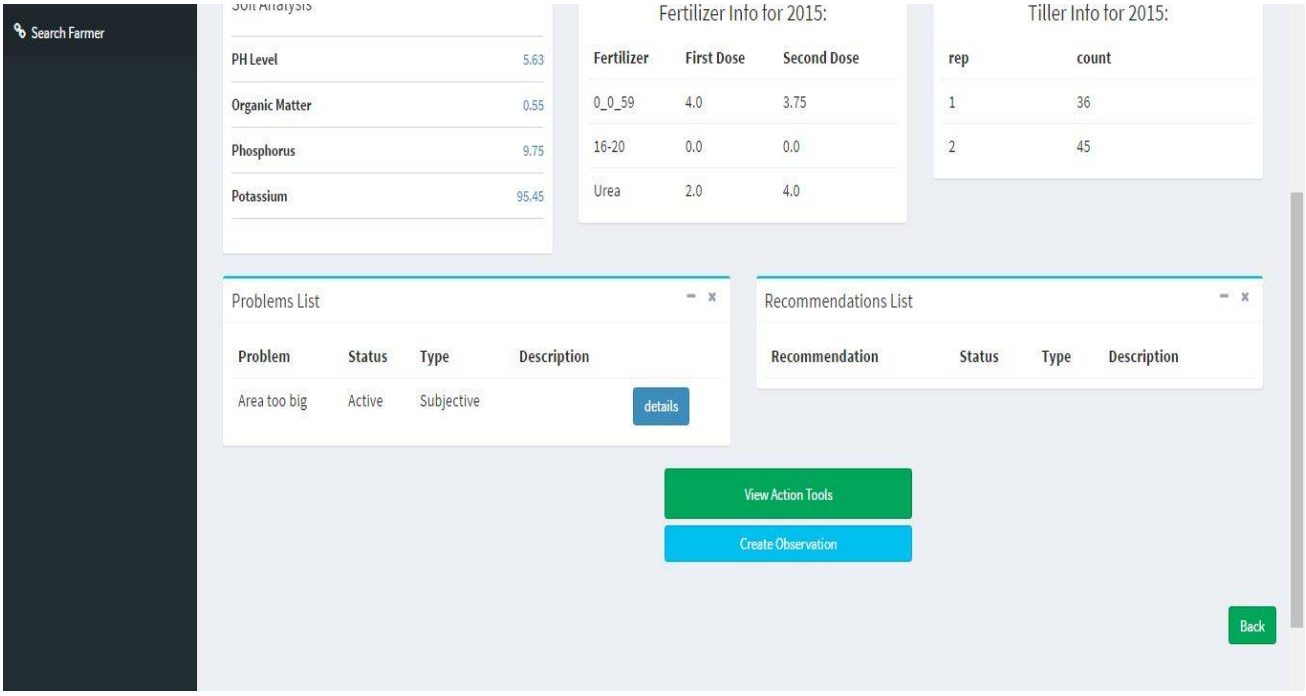
Screen Name : Farmer Profile

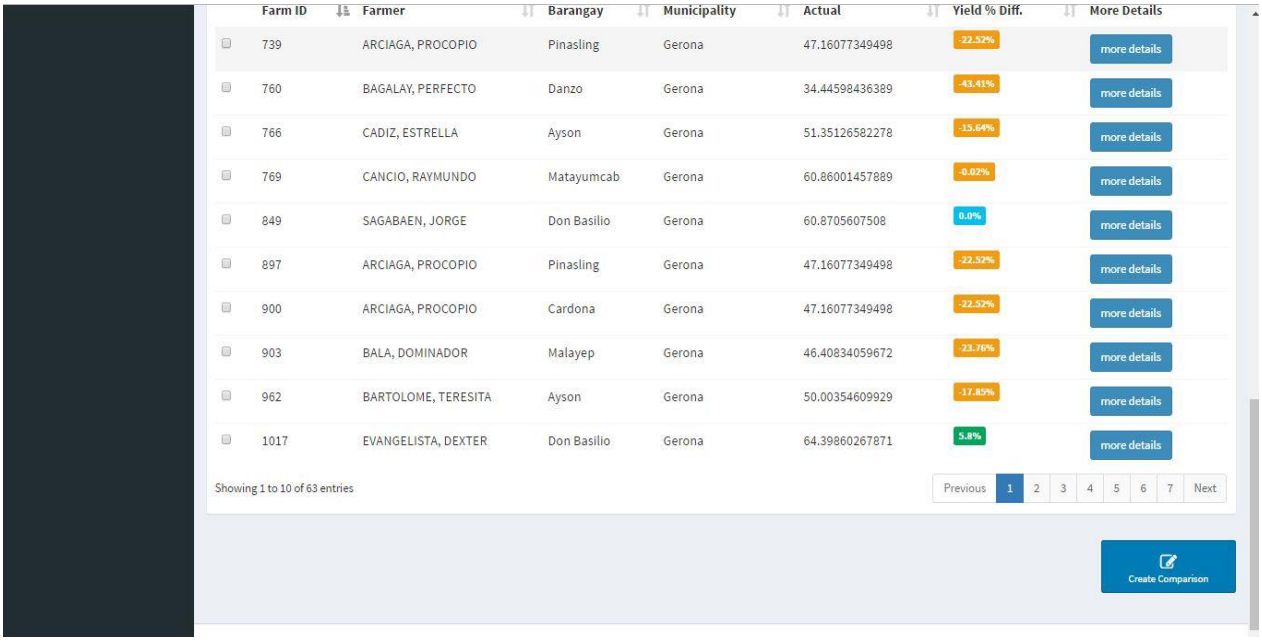
File Name : viewFarmerprofile.jsp

Description : The page shows the details of the farm like area and crop characteristics. Here the observation and comparison can be made.

Layout :


SRA
Today is 2017-03-05
Milling Period of Crop Year 2017
Delfin, BJ
Delfin, BJ
MDO
Navigation
Home
Alerts
Weather Report
Weather Trends
Forum
Recommendations
Problems
Create Recommendations
Calendar
Crop Estimate (Options)
View Programs
Search Farmer
Reports
Farm Profile
Farm Details for 2017
Field ID 787
Farmer SAGABAEN, JORGE
Barangay Tagumbao
Municipality Gerona
Total Area(ha) 0.575
Production(tc) 28.56
Harvested Area(ha) 0.4832
Current Yield(tc/ha) 59.11
View Farmer Profile
Crop Validation for 2017
Crop Variety PS 862
Crop Class RC1
Texture LIGHT
Farming System MECHANICAL
Topography LEVEL
Furrow Distance(m) 0.86
Planting Density 0.0
Number Millable 0
Average Millable Stool 0.0
Brix(bx) 15.0
Farm Site Pic
Soil Analysis
PH Level(ph) 5.63
Organic Matter(mg) 0.55
Fertilizer Info for 2015:
Fertilizer First Dose(bags) Second Dose(bags)
0_0_59 4.0 3.75
Tiller Info for 2017:
rep count
1 75


Search Farmer
PH Level 5.63
Organic Matter 0.55
Phosphorus 9.75
Potassium 95.45
Fertilizer Info for 2015:
Fertilizer First Dose Second Dose
0_0_59 4.0 3.75
16-20 0.0 0.0
Urea 2.0 4.0
Tiller Info for 2015:
rep count
1 36
2 45
Problems List
Problem Status Type Description
Area too big Active Subjective
details
Recommendations List
Recommendation Status Type Description
View Action Tools
Create Observation
Back



Farm ID	Farmer	Barangay	Municipality	Actual	Yield % Diff.	More Details
739	ARCIAGA, PROCOPIO	Pinasling	Gerona	47.16077349498	-22.52%	more details
760	BAGALAY, PERFECTO	Danzo	Gerona	34.44598436389	-43.41%	more details
766	CADIZ, ESTRELLA	Ayson	Gerona	51.35126582278	-15.64%	more details
769	CANCIO, RAYMUNDO	Matayumcab	Gerona	60.86001457889	-0.02%	more details
849	SAGABAEN, JORGE	Don Basilio	Gerona	60.8705607508	0.0%	more details
897	ARCIAGA, PROCOPIO	Pinasling	Gerona	47.16077349498	-22.52%	more details
900	ARCIAGA, PROCOPIO	Cardona	Gerona	47.16077349498	-22.52%	more details
903	BALA, DOMINADOR	Malayep	Gerona	46.40834059672	-23.76%	more details
962	BARTOLOME, TERESITA	Ayson	Gerona	50.00354609929	-17.85%	more details
1017	EVANGELISTA, DEXTER	Don Basilio	Gerona	64.39860267871	5.8%	more details

Showing 1 to 10 of 63 entries

Previous 1 2 3 4 5 6 7 Next

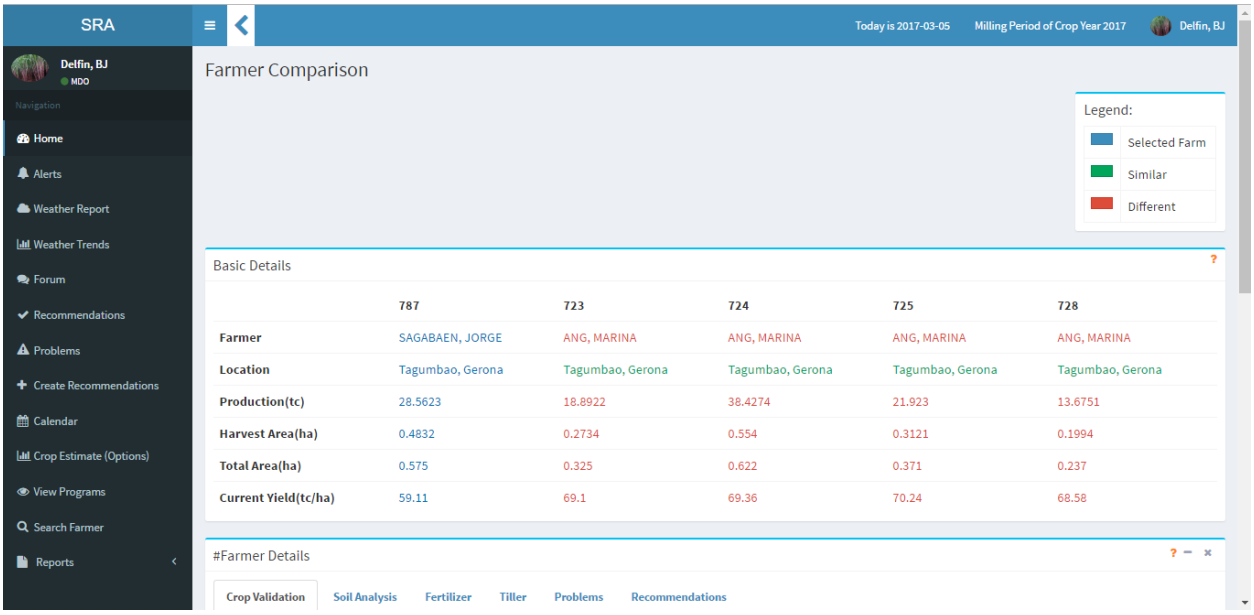
Create Comparison

Screen Name : Create Comparison

File Name : viewFarmerdifferences.jsp

Description : The page shows the details of the farm like area and crop characteristics. Here the observation and comparison can be made.

Layout :

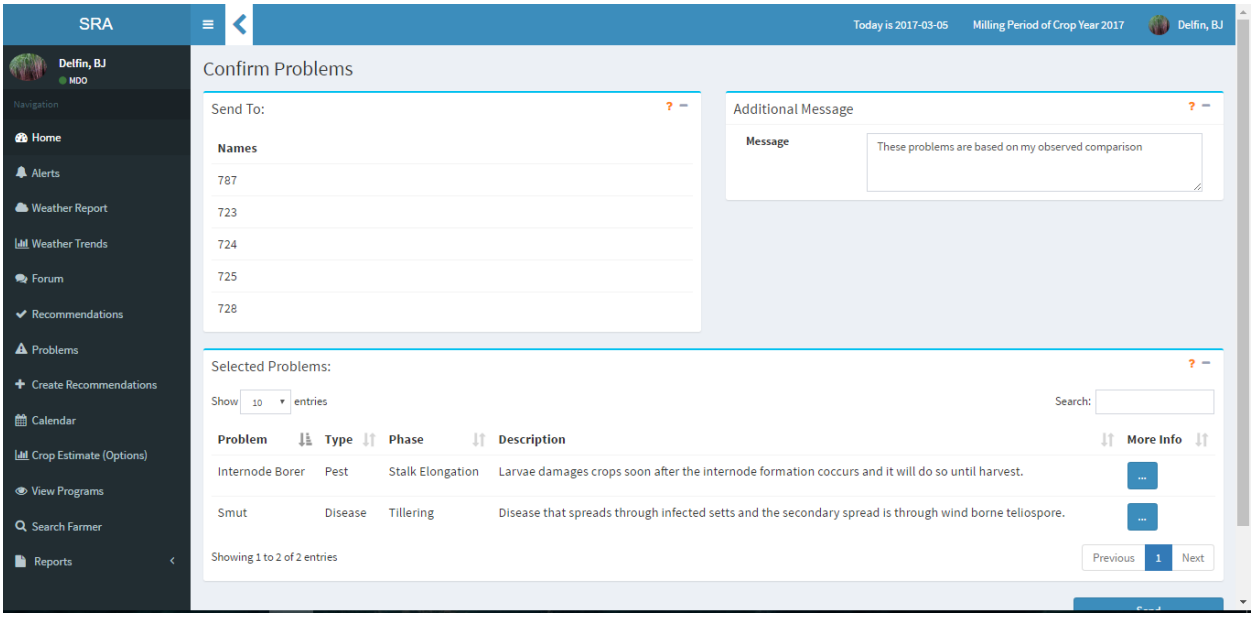


Screen Name : Determine Problem

File Name : viewSendRec.jsp

Description : The page enables the user to determine the problem by selecting the possible problems and putting additional message to be sent to the selected farmer/s.

Layout :

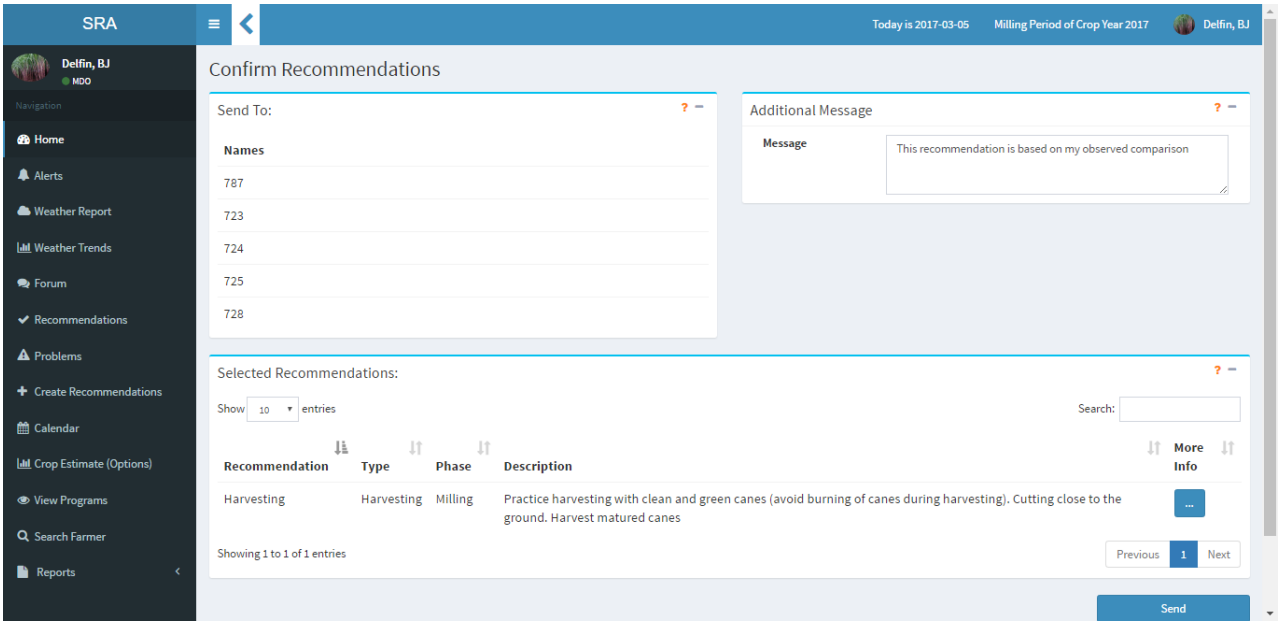


Screen Name : Send other recommendation

File Name : viewSendRec.jsp

Description : The page enables the user to send other recommendations and input additional messages.

Layout :

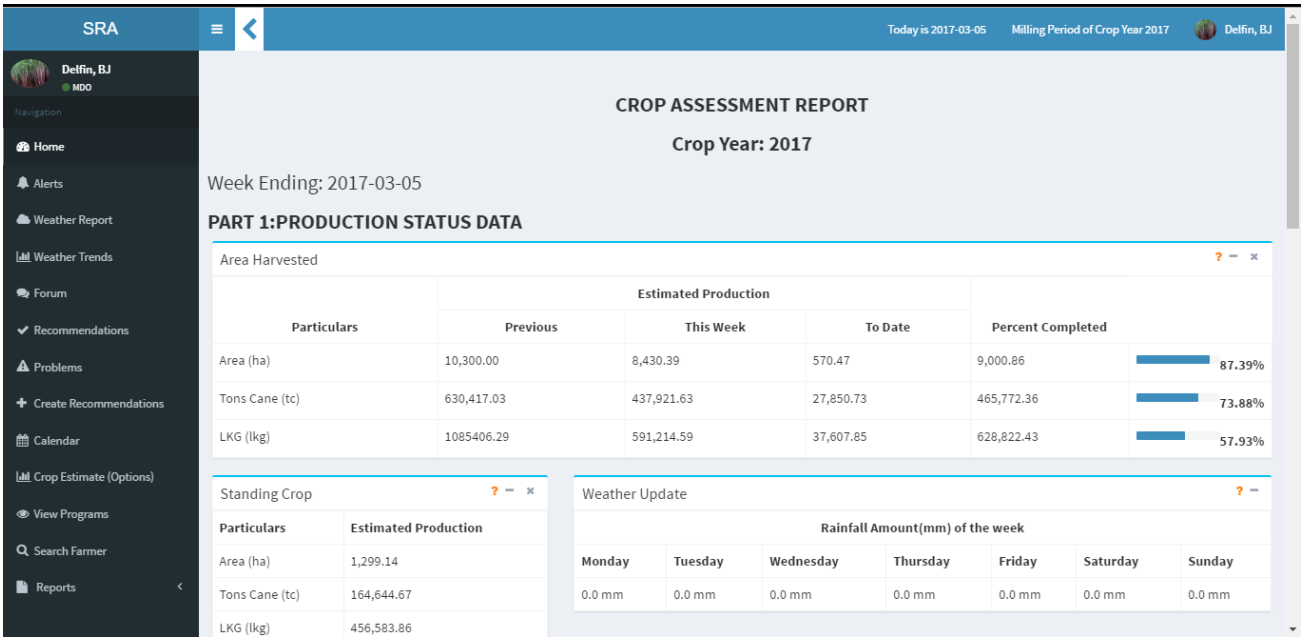


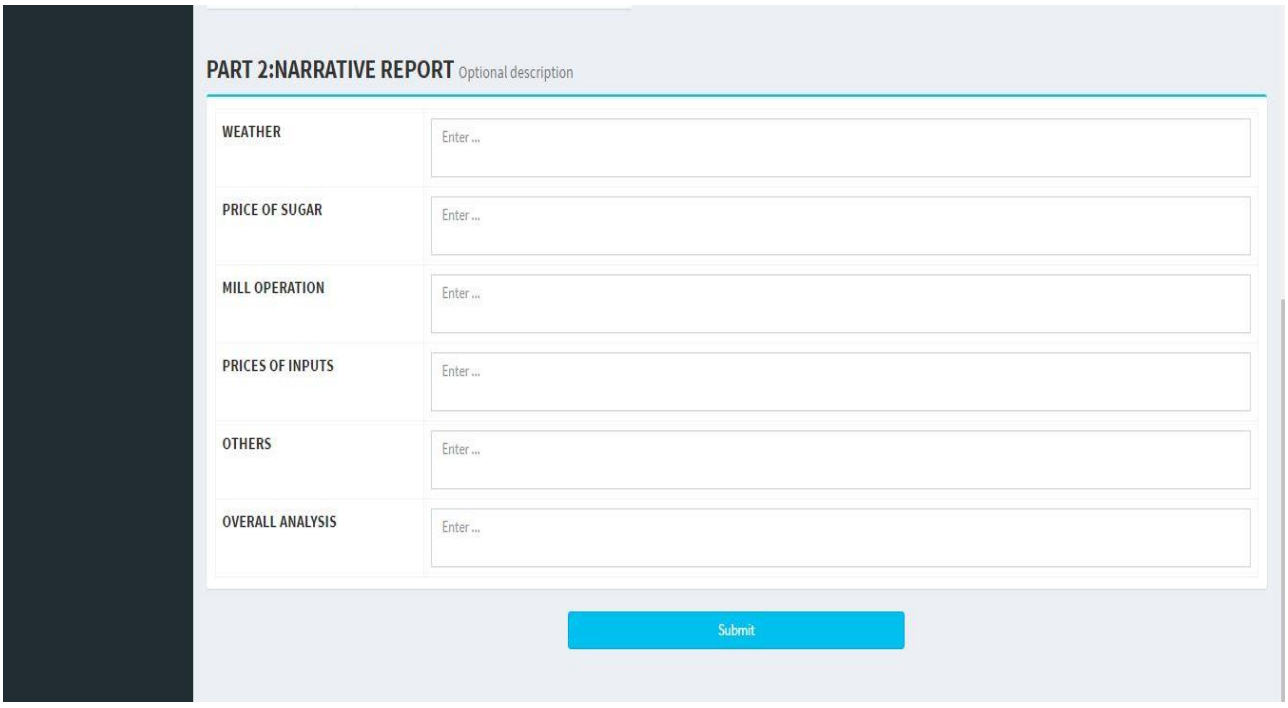
Screen Name : Create Crop Assessment

File Name : viewCropAssessment.jsp

Description : The page allows the user to create a crop assessment report with the production details.

Layout :



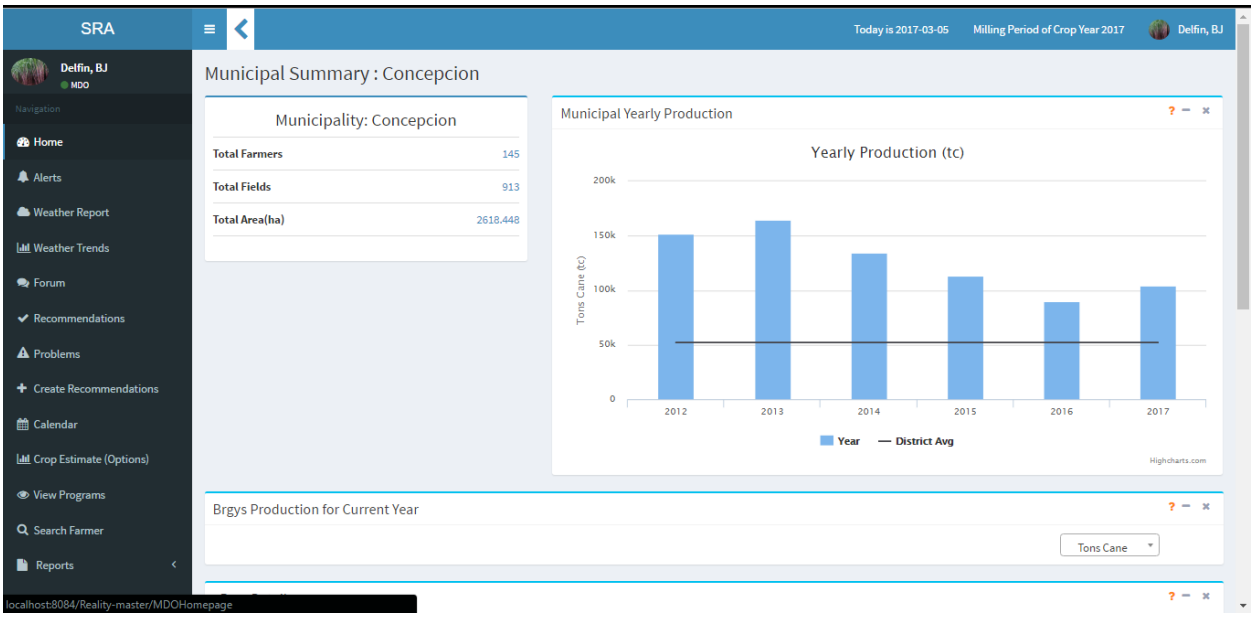


Screen Name : Municipality Summary

File Name : viewMunicipality.jsp

Description : The page shows the production summary of the municipality as well as the barangay.

Layout :

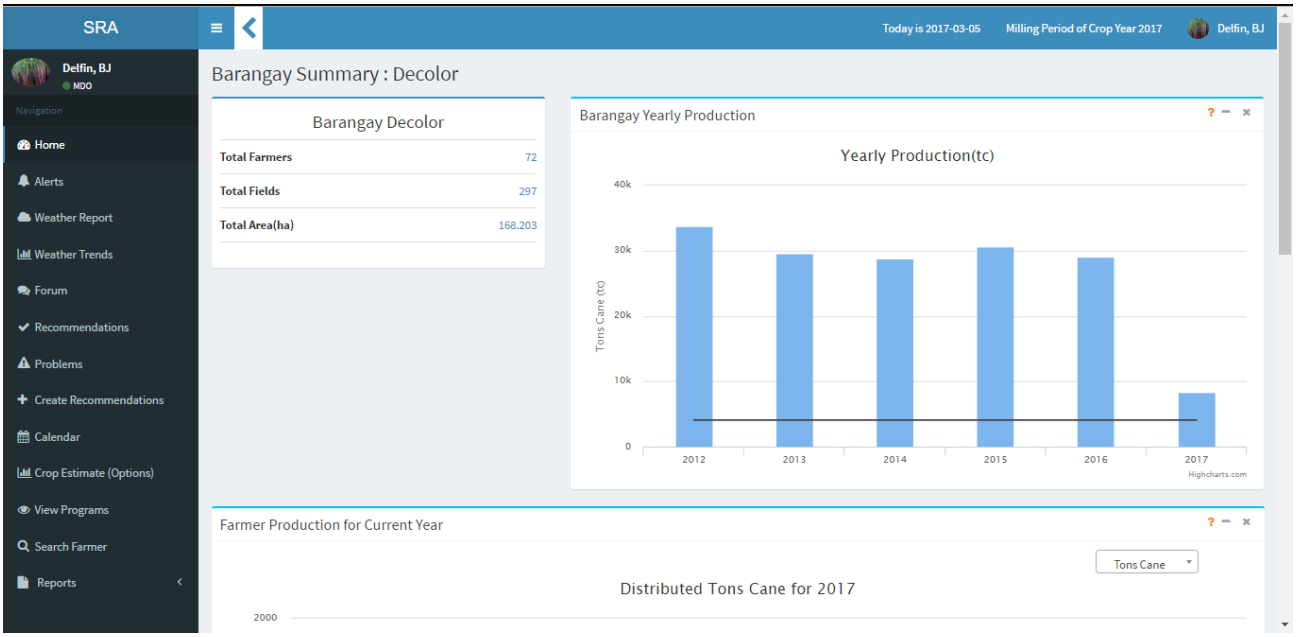


Screen Name : Barangay Summary

File Name : viewbarangay.jsp

Description : The page shows the production summary of the barangay and the farmers inside it.

Layout :

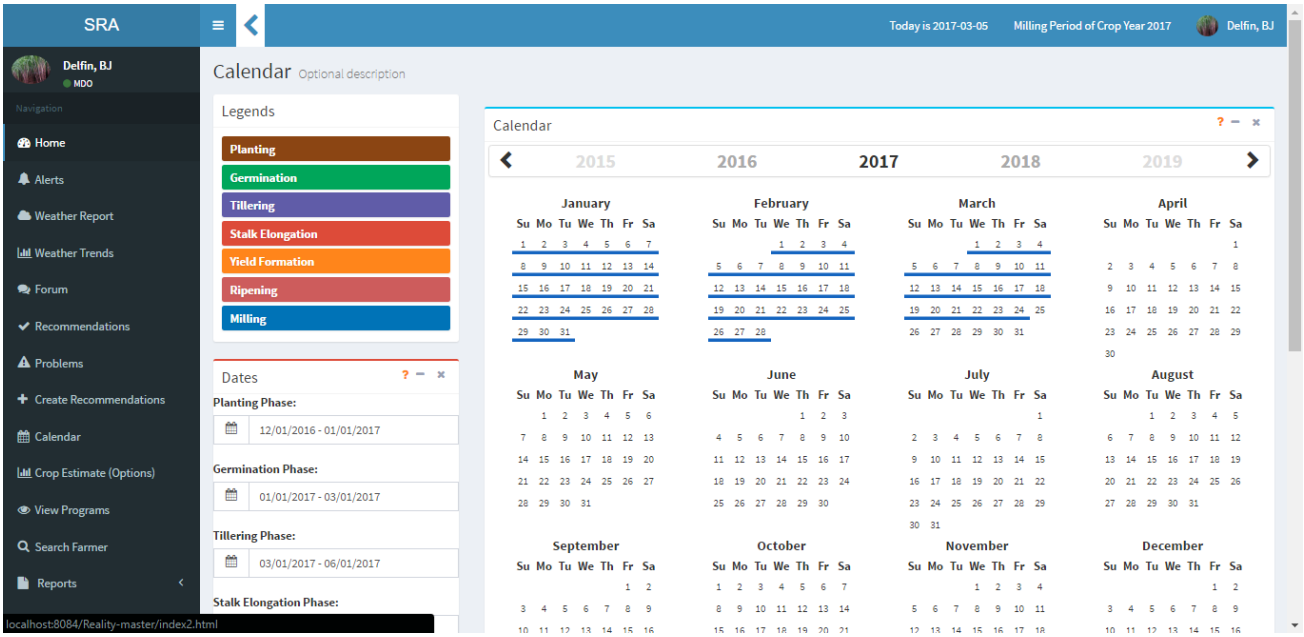


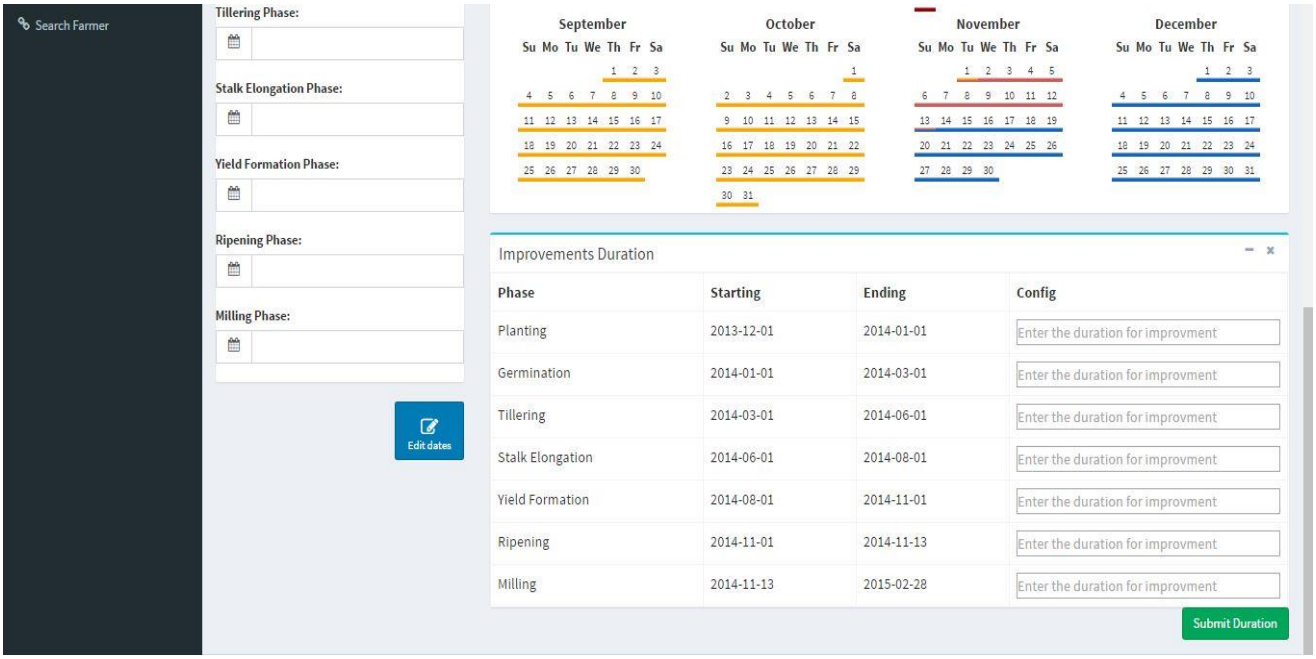
Screen Name : Calendar

File Name : viewPhaseDates.jsp

Description : The page shows the dates and duration of the crop growth phases. The user may edit the phases here and the duration of improvements per phase.

Layout :



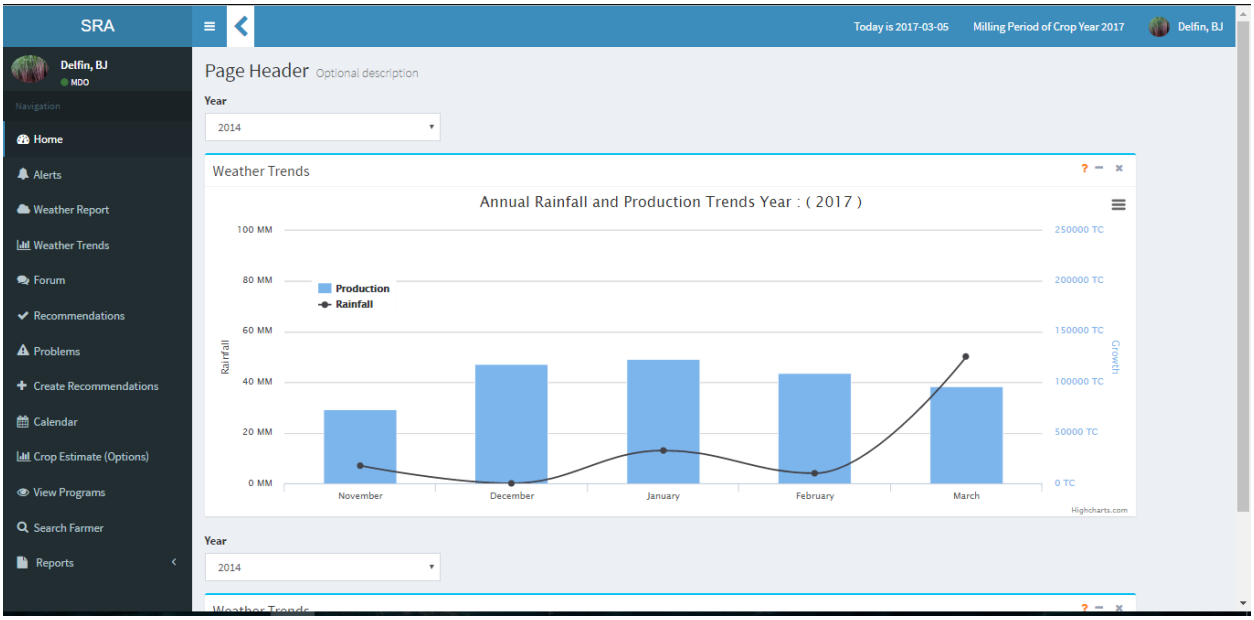


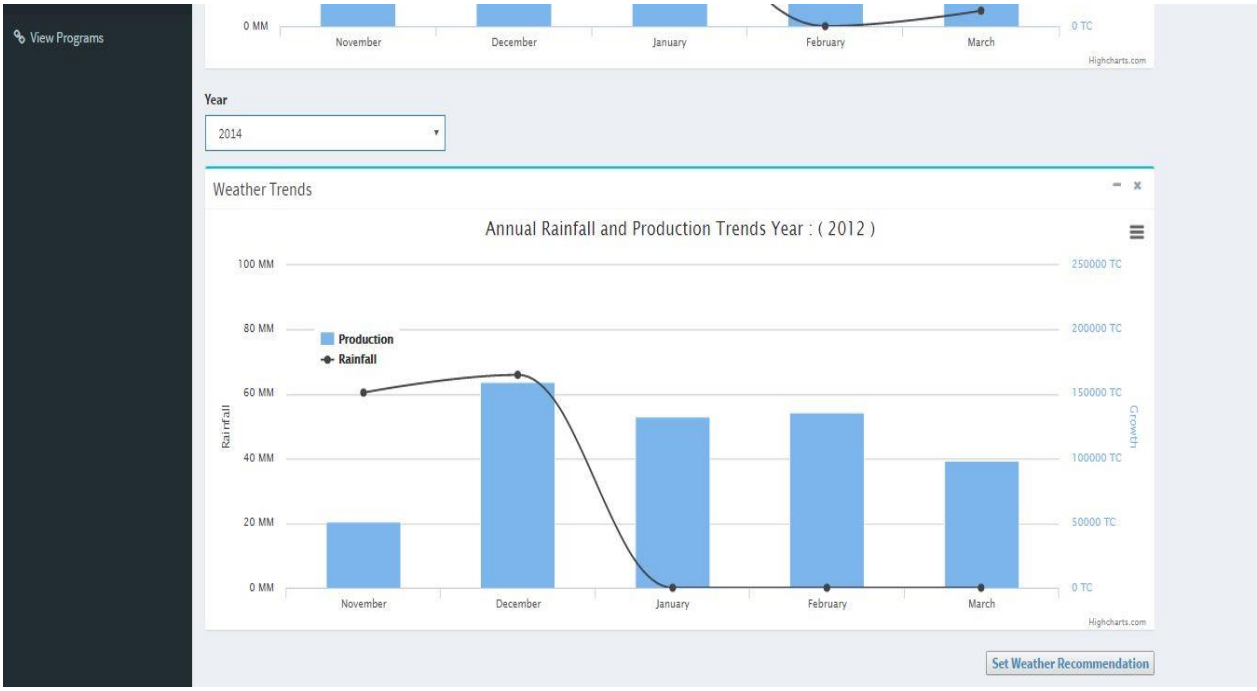
Screen Name : Weather Trends

File Name : viewbarangay.jsp

Description : The page shows the rainfall trend and production per month for 2 years for comparison. Here the weather related recommendation can be modified

Layout :



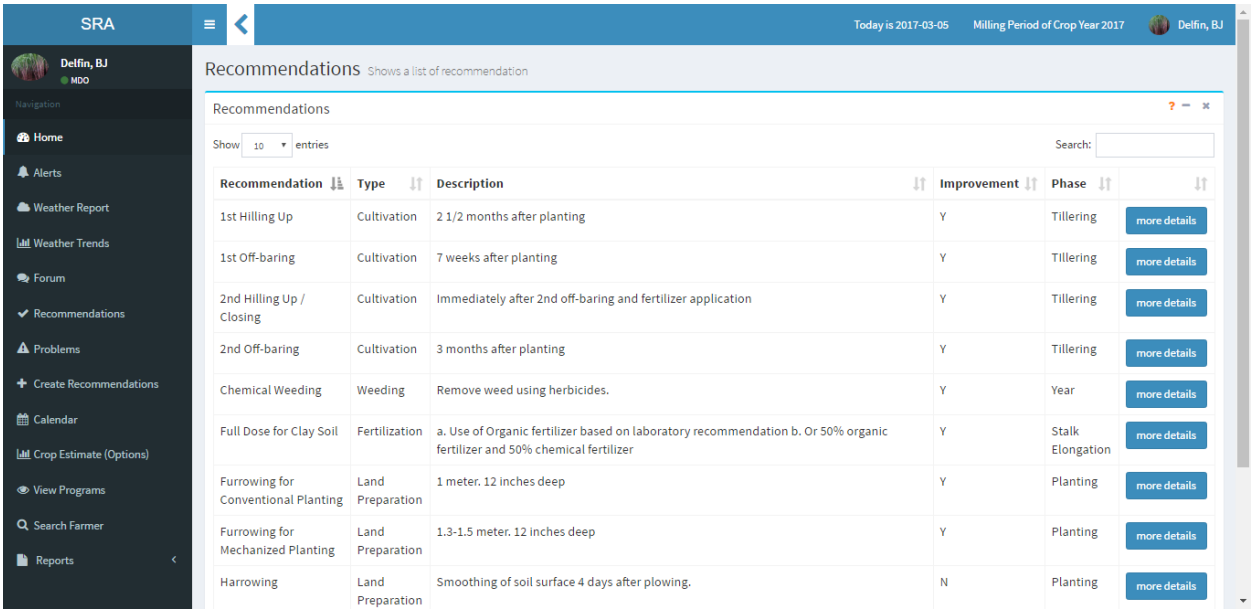


Screen Name : View Recommendations List

File Name : Recommendations.jsp

Description : The page shows the list of recommendations. The button can be clicked to see the details.

Layout :



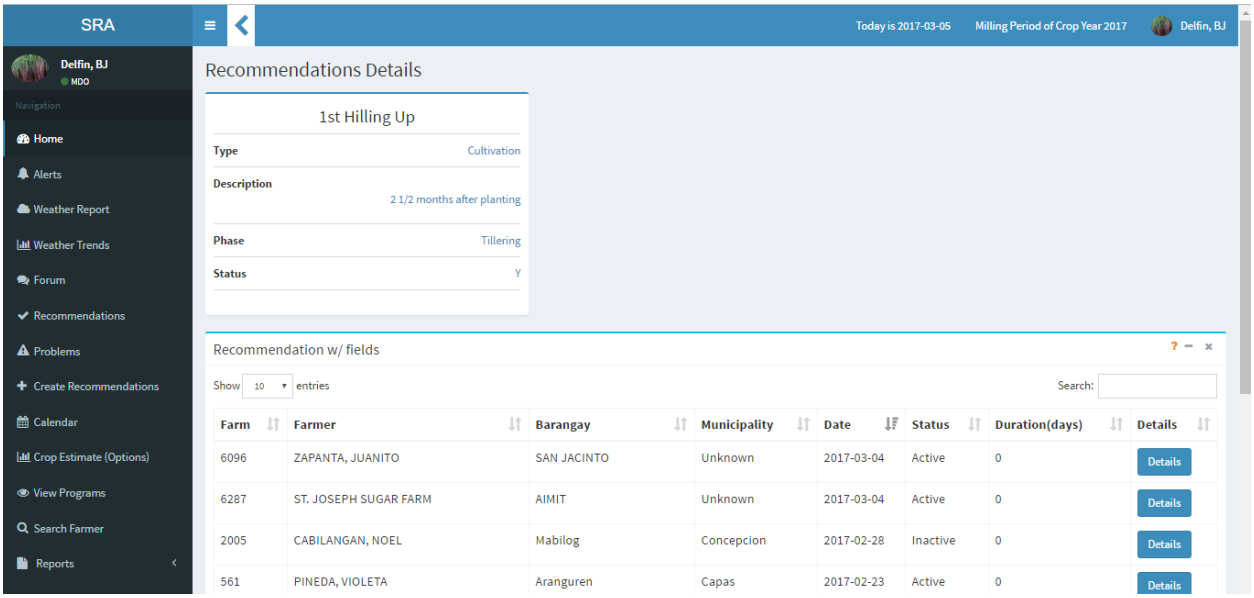
Recommendation	Type	Description	Improvement	Phase	
1st Hilling Up	Cultivation	2 1/2 months after planting	Y	Tillering	more details
1st Off-baring	Cultivation	7 weeks after planting	Y	TIllering	more details
2nd Hilling Up / Closing	Cultivation	Immediately after 2nd off-baring and fertilizer application	Y	Tillering	more details
2nd Off-baring	Cultivation	3 months after planting	Y	Tillering	more details
Chemical Weeding	Weeding	Remove weed using herbicides.	Y	Year	more details
Full Dose for Clay Soil	Fertilization	a. Use of Organic fertilizer based on laboratory recommendation b. Or 50% organic fertilizer and 50% chemical fertilizer	Y	Stalk Elongation	more details
Furrowing for Conventional Planting	Land Preparation	1 meter. 12 inches deep	Y	Planting	more details
Furrowing for Mechanized Planting	Land Preparation	1.3-1.5 meter. 12 inches deep	Y	Planting	more details
Harrowing	Land Preparation	Smoothing of soil surface 4 days after plowing.	N	Planting	more details

Screen Name : Recommendation Details

File Name : viewRecdetails.jsp

Description : The page shows the details of the recommendations and the farms that have the recommendation

Layout :

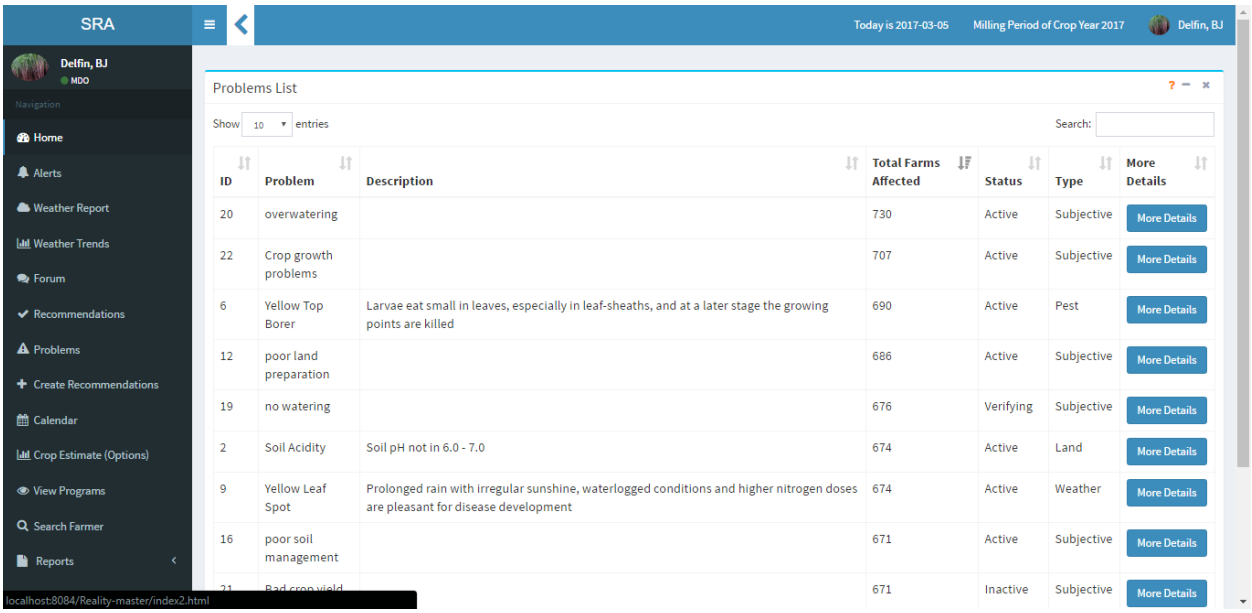


Screen Name : Problem List

File Name : Problems.jsp

Description : The page shows the list of problems.

Layout :

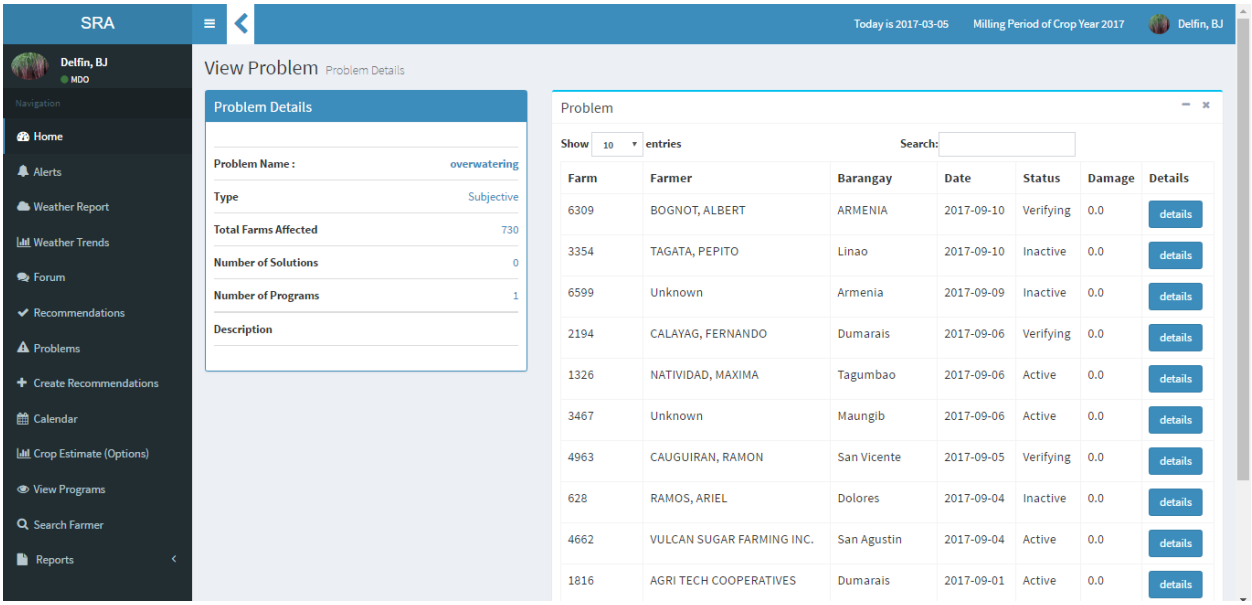


Screen Name : Problem Details

File Name : viewprobdetails.jsp

Description : The page shows the production summary of the barangay and the farmers inside it. The user is able to create a recommendation or a program

Layout :

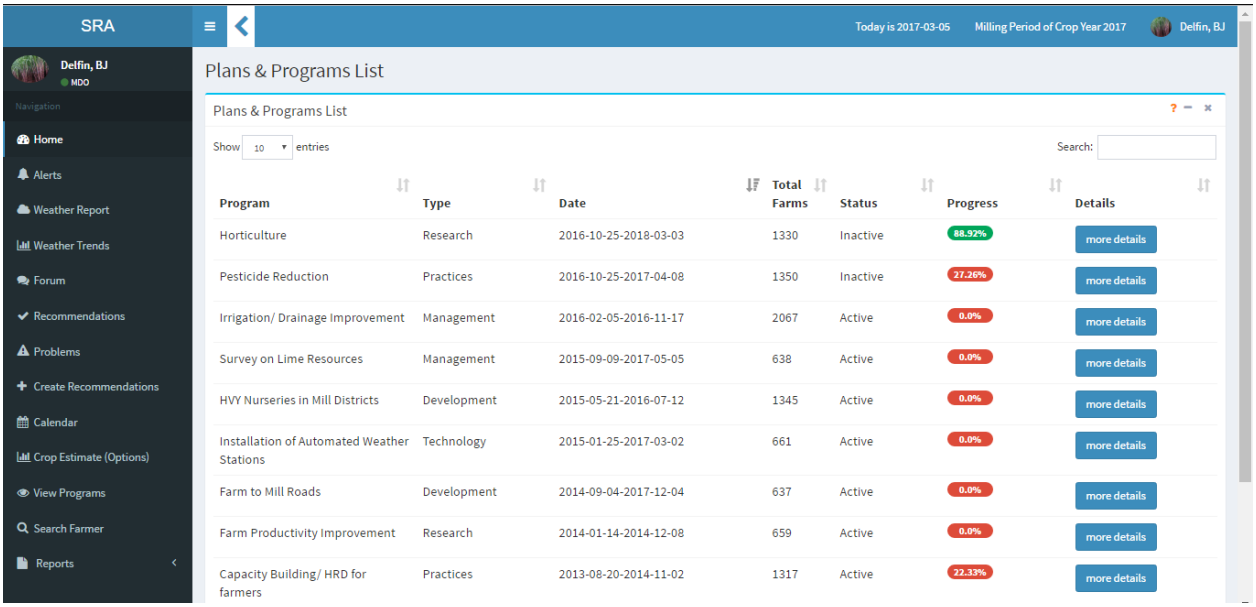


Screen Name : Program Lists

File Name : viewPrograms.jsp

Description : The page shows the list of programs

Layout :

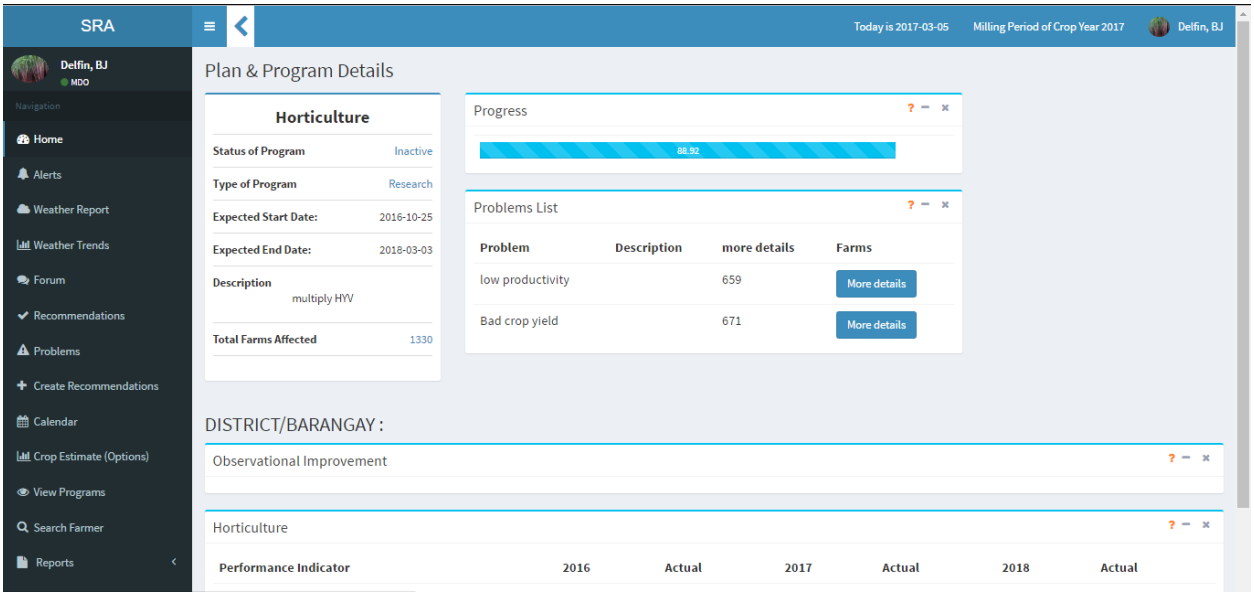


Screen Name : Program Details

File Name : viewbarangay.jsp

Description : The page shows the production summary of the barangay and the farmers inside it.

Layout :


SRA
Today is 2017-03-05
Milling Period of Crop Year 2017
Delfin, BJ
Delfin, BJ
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Navigation
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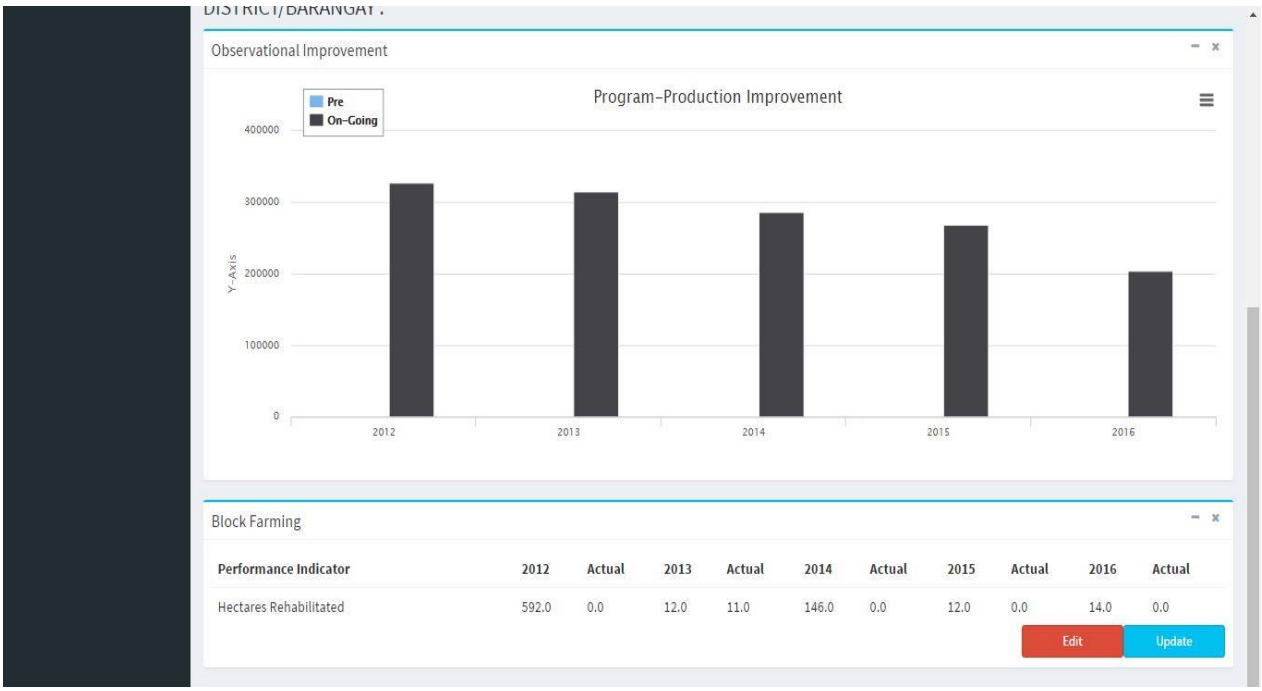
Alerts
Weather Report
Weather Trends
Forum
Recommendations
Problems
Create Recommendations
Calendar
Crop Estimate (Options)
View Programs
Search Farmer
Reports
Plan & Program Details
Horticulture
Status of Program Inactive
Type of Program Research
Expected Start Date: 2016-10-25
Expected End Date: 2018-03-03
Description multiply HYV
Total Farms Affected 1330
Progress
88.92
Problems List
Problem Description more details Farms
low productivity 659 More details
Bad crop yield 671 More details
DISTRICT/BARANGAY :
Observational Improvement
Horticulture
Performance Indicator 2016 Actual 2017 Actual 2018 Actual

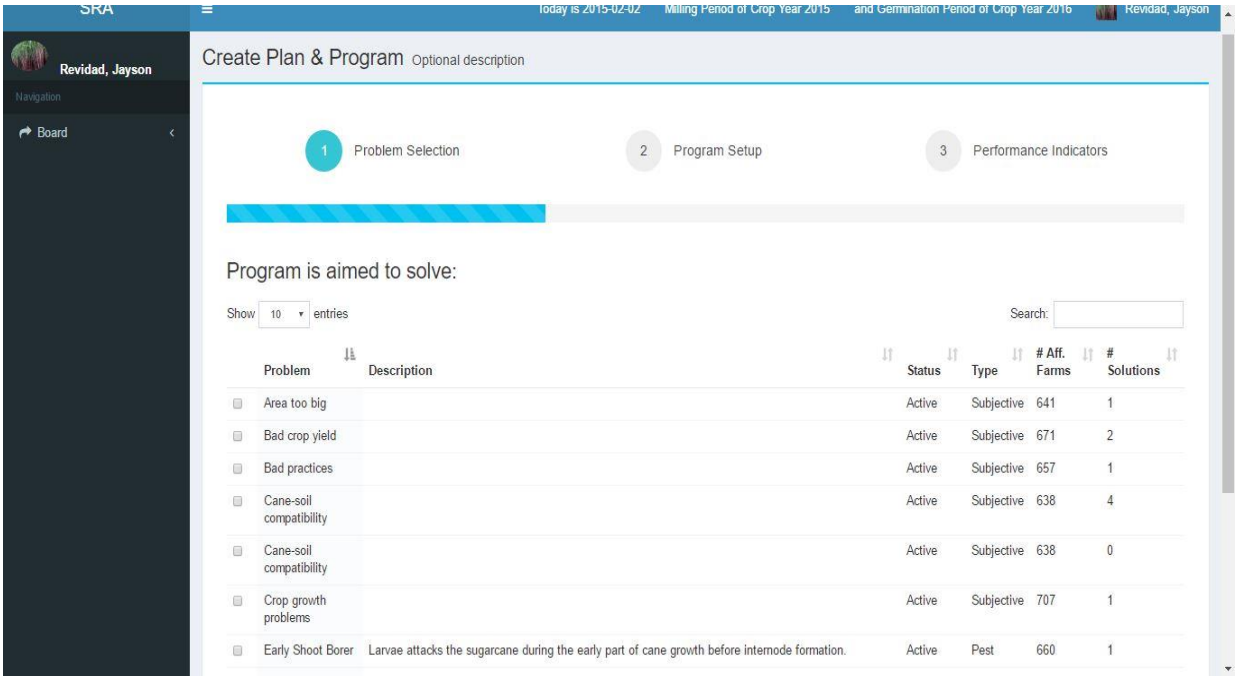

Observational Improvement
Program-Production Improvement
Pre
On-Going
Y-Axis
400000
300000
200000
100000
0
2012
2013
2014
2015
2016
Block Farming
Performance Indicator 2012 Actual 2013 Actual 2014 Actual 2015 Actual 2016 Actual
Hectares Rehabilitated 592.0 0.0 12.0 11.0 146.0 0.0 12.0 0.0 14.0 0.0
Edit
Update

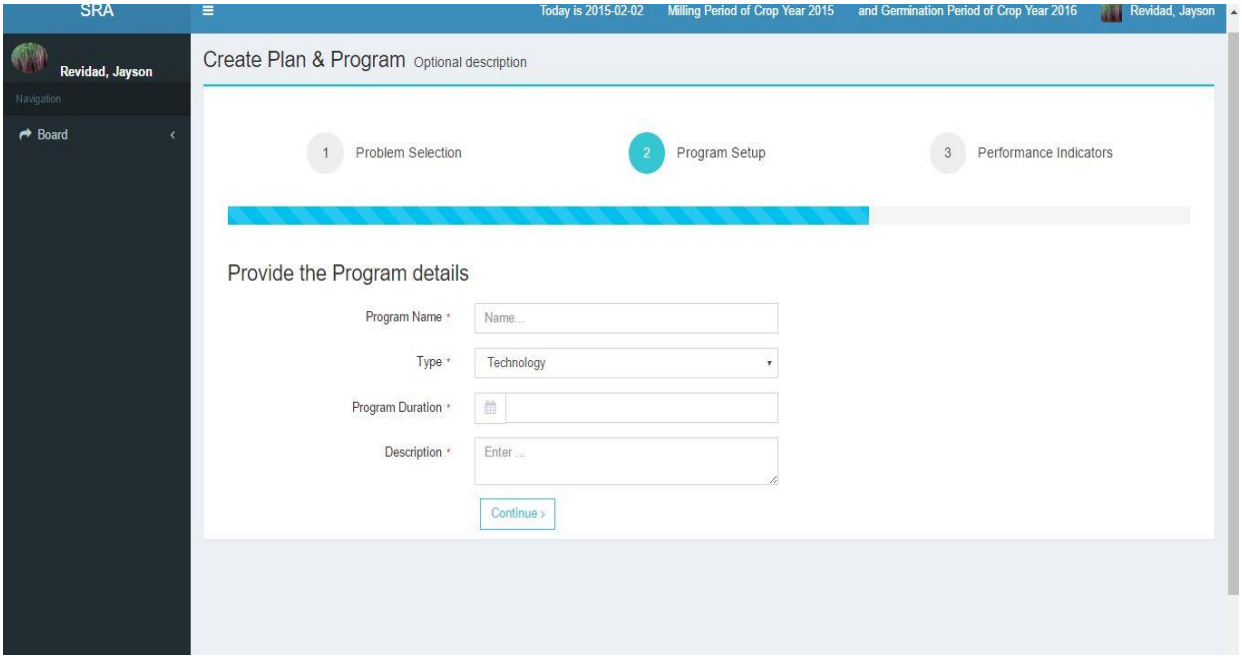
Screen Name : Create Program

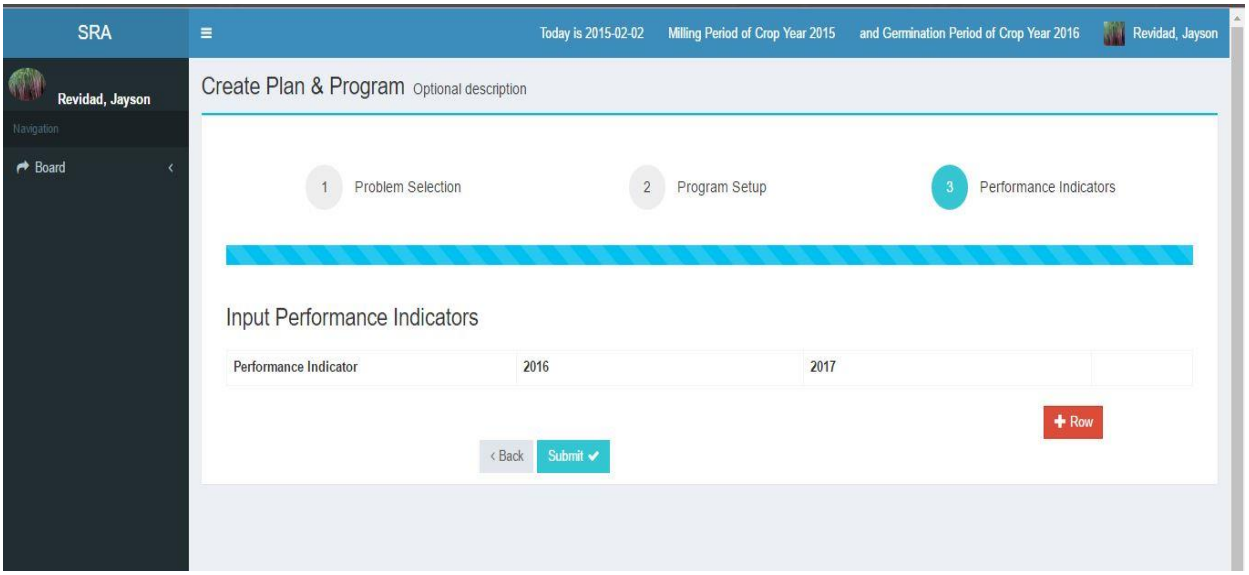
File Name : createprogram.jsp

Description : The page allows the user to select problems, input the program details and set the performance indicators.

Layout :





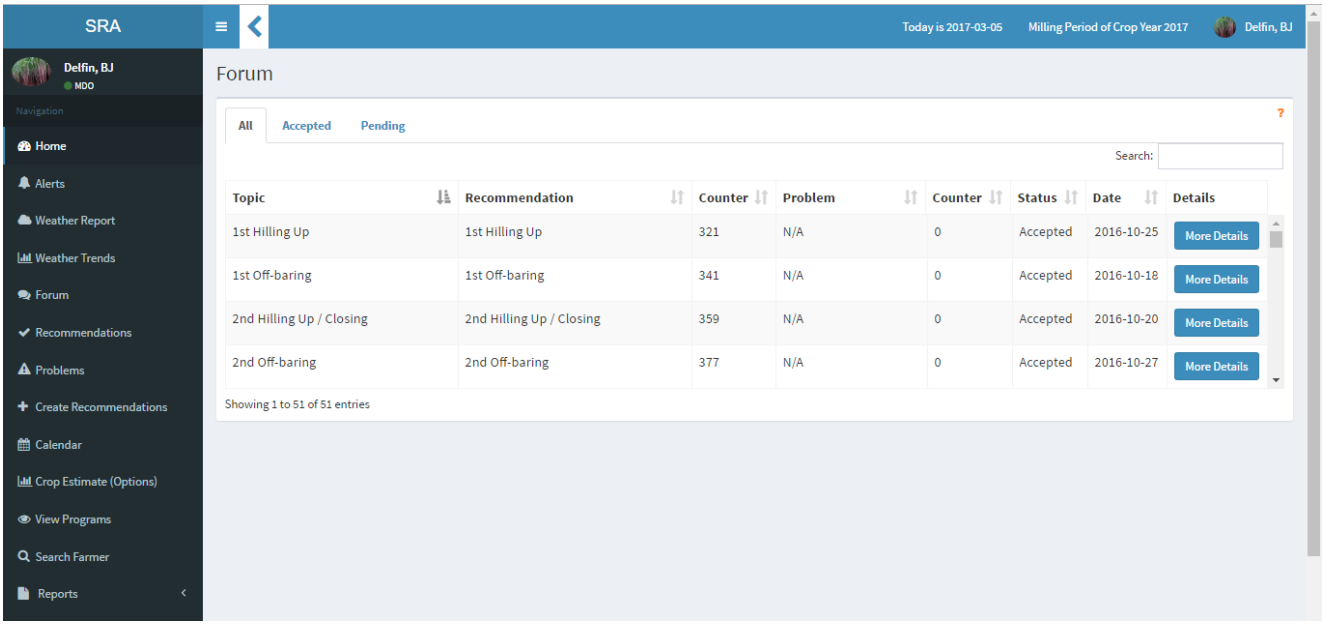


Screen Name : Forum

File Name : Forum.jsp

Description : The page shows the list of posts with their statuses.

Layout :

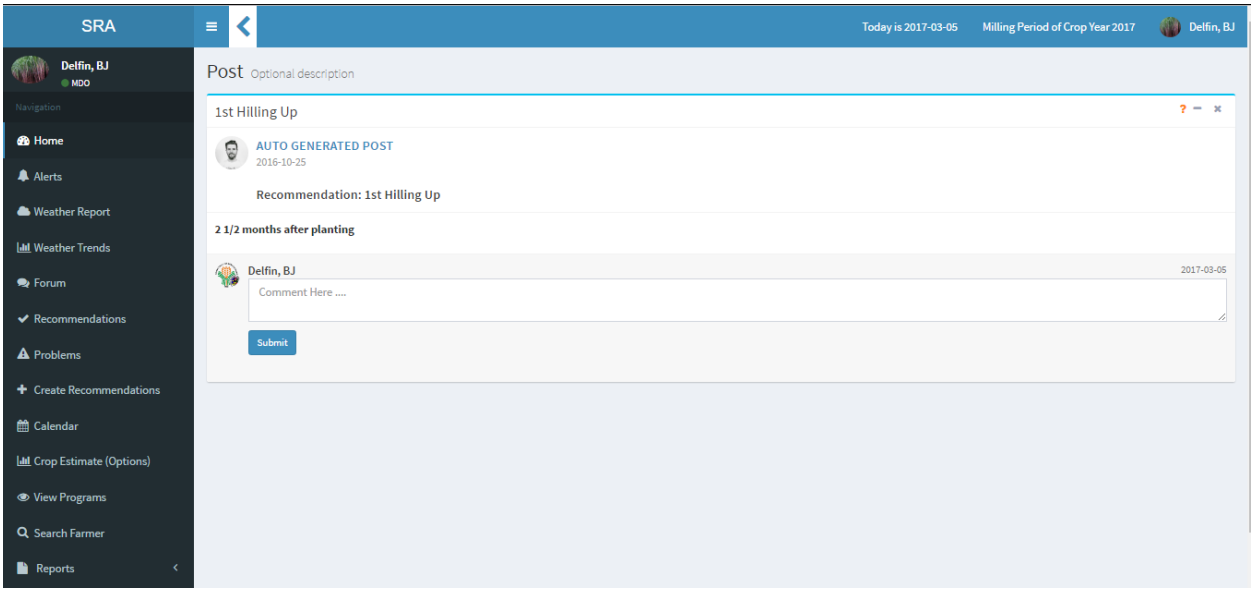


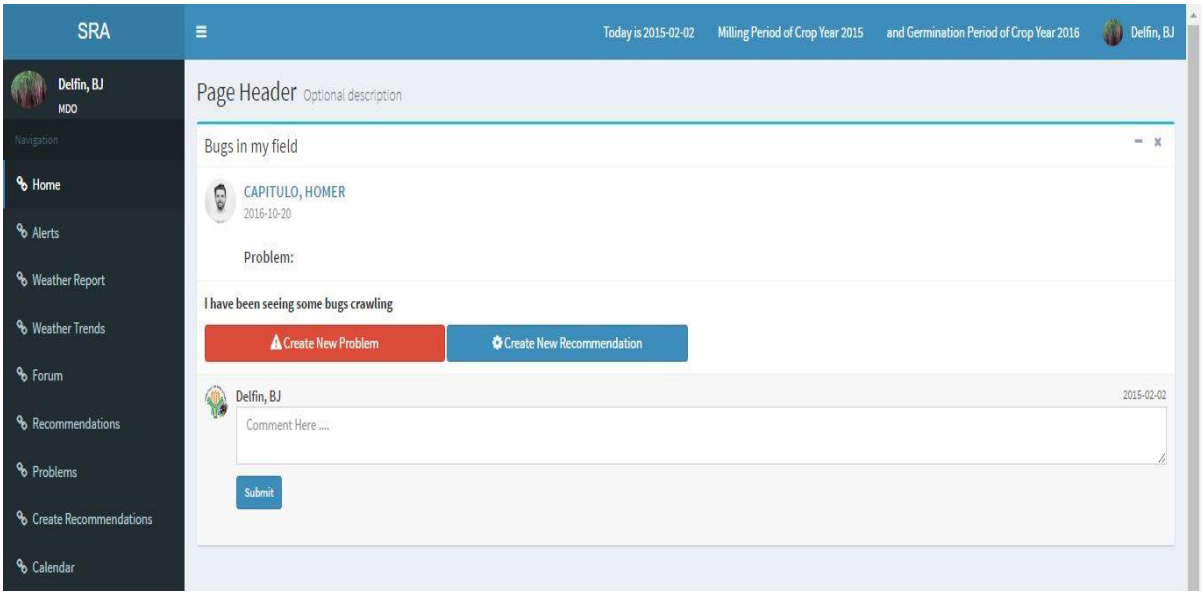
Screen Name : Forum Post

File Name : ApprovePost.jsp

Description : The page shows the post of the farmer made in the forum and the MDO can approve or reject the post.

Layout :



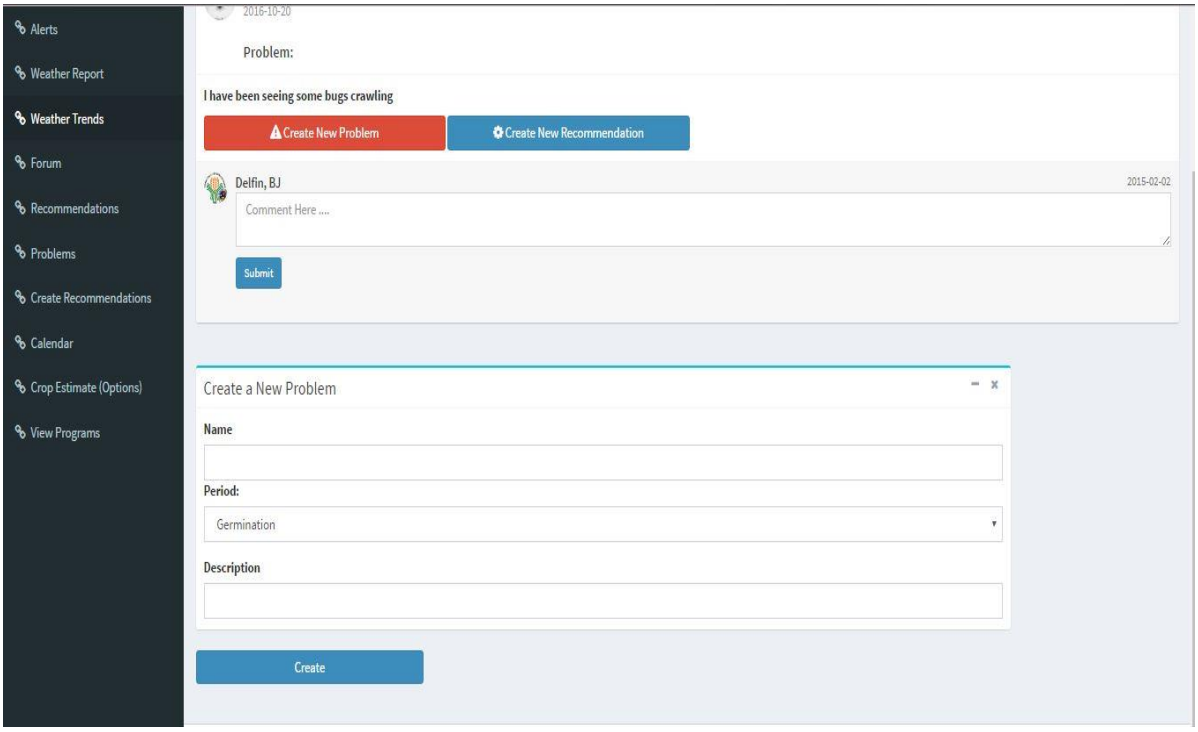


Screen Name : Create New Problem

File Name : ApprovePost.jsp

Description : The page allows the user to create a problem based on his evaluation of the post.

Layout :

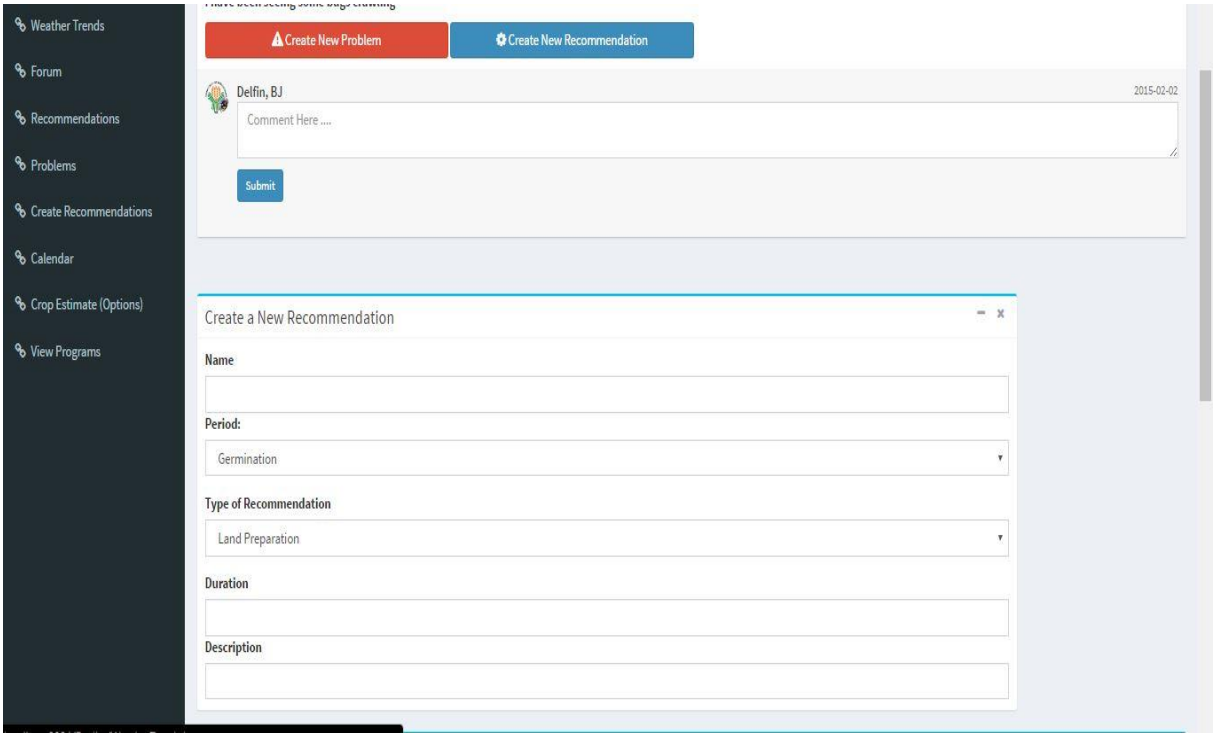


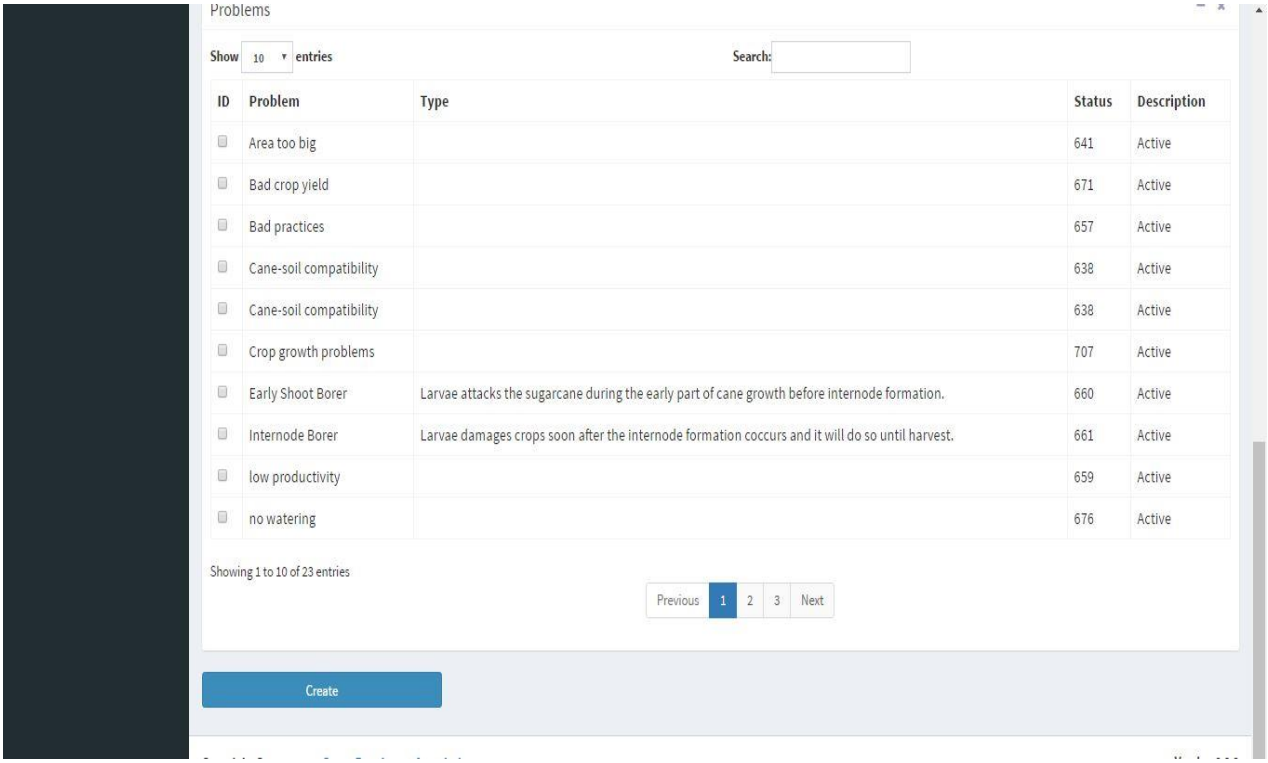
Screen Name : Create Recommendation Forum

File Name : ApprovePost.jsp

Description : The page allows the user to create a recommendation.

Layout :


Weather Trends
Forum
Recommendations
Problems
Create Recommendations
Calendar
Crop Estimate (Options)
View Programs
Create New Problem
Create New Recommendation
Delfin, BJ
2015-02-02
Comment Here ....
Submit
Create a New Recommendation
Name
Period:
Germination
Type of Recommendation
Land Preparation
Duration
Description

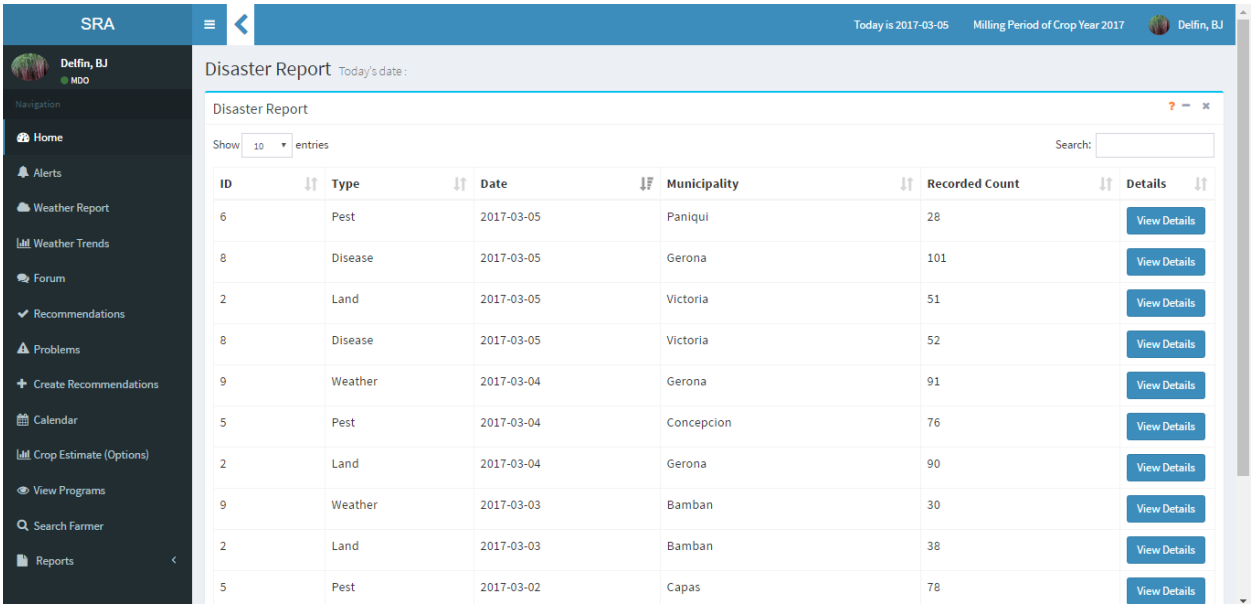


Screen Name : Disaster Report

File Name : Disaster.jsp

Description : The page shows the list of disasters reported.

Layout :

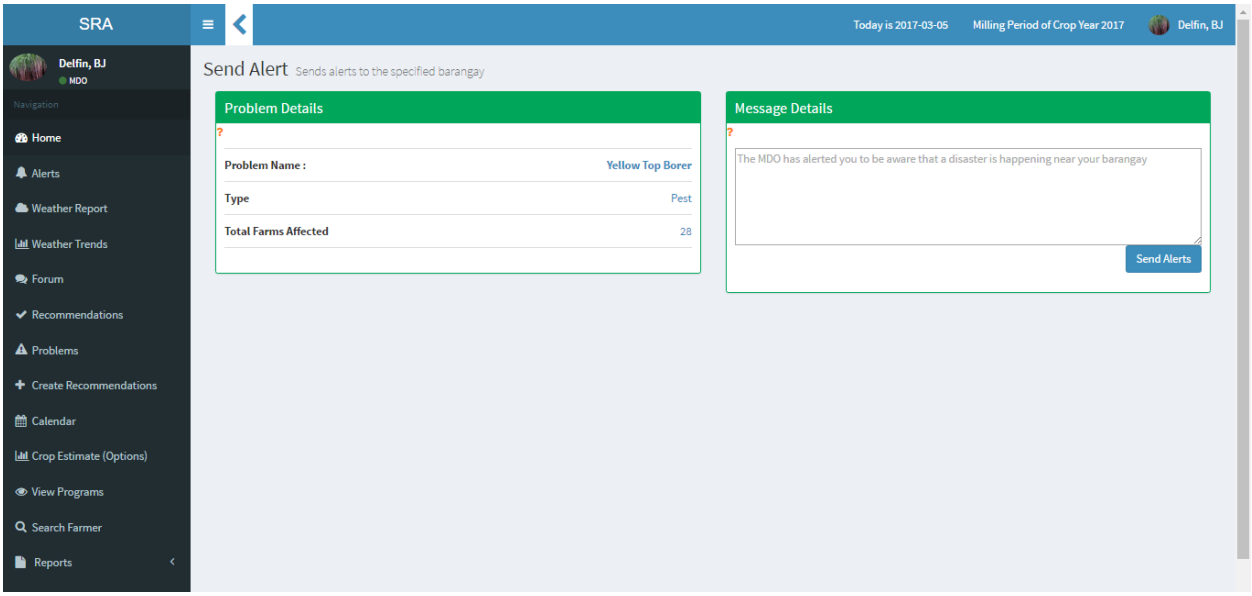


Screen Name : Send Alert

File Name : alert.jsp

Description : The page allows the user to send alerts with messages to the farmer.

Layout :

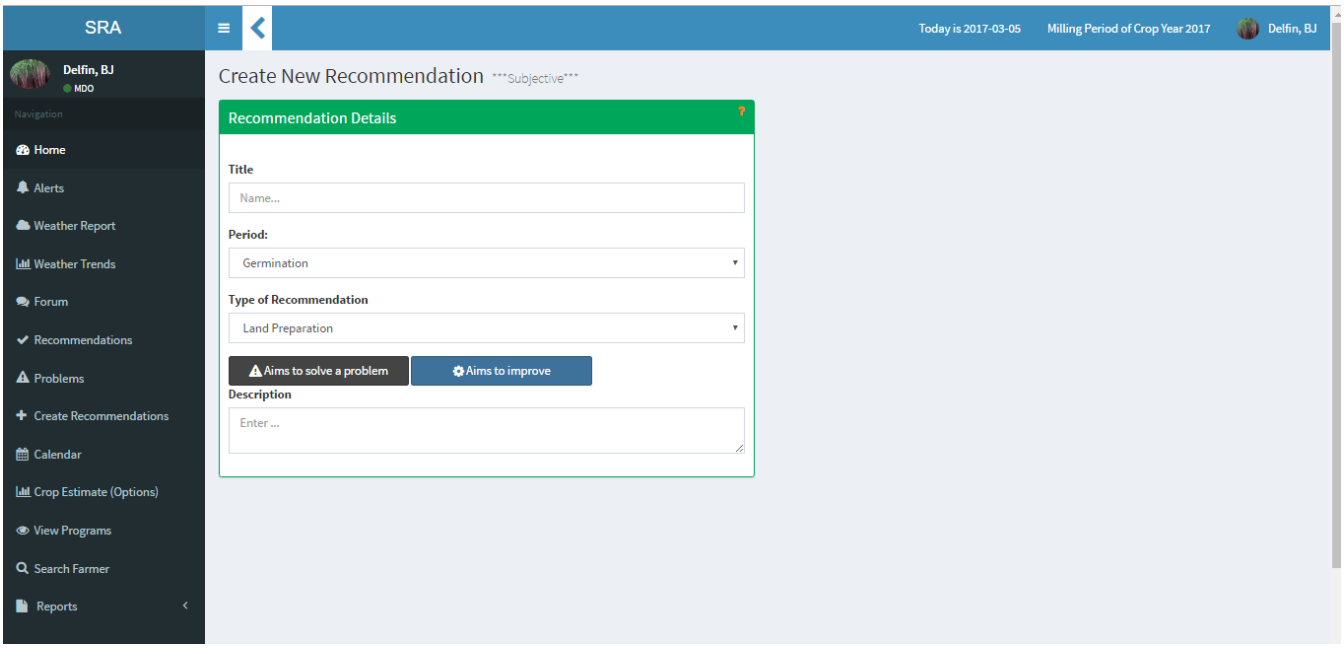


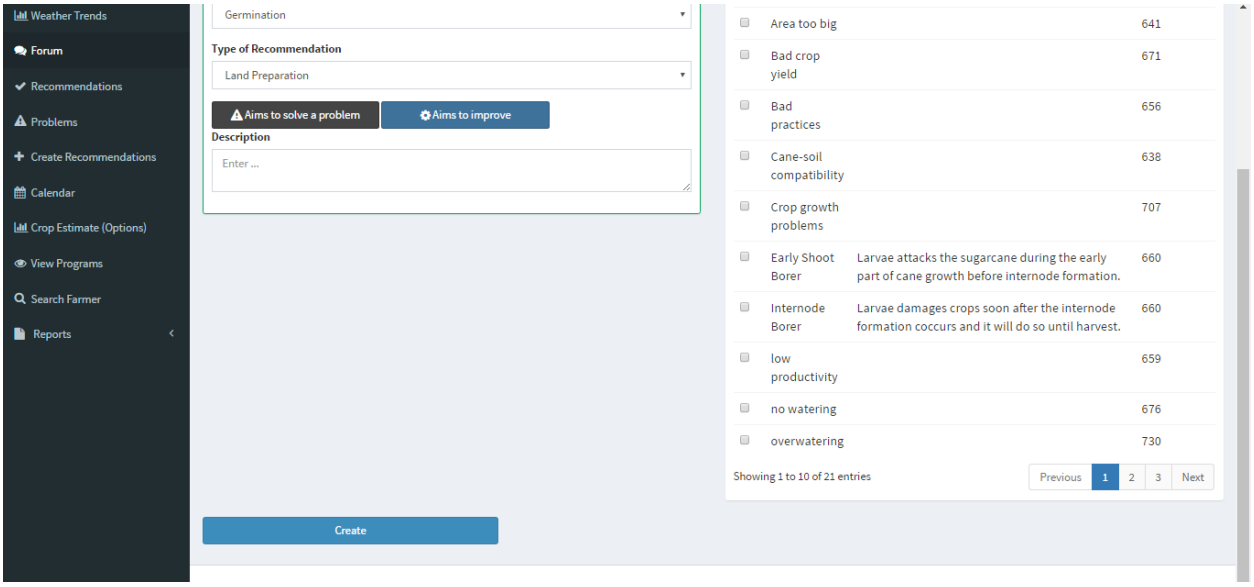
Screen Name : Create Recommendation

File Name : createNewRecommendation.jsp

Description : The page allows the user to create a new recommendation and choose between two types: solving a problem or for improvement

Layout :



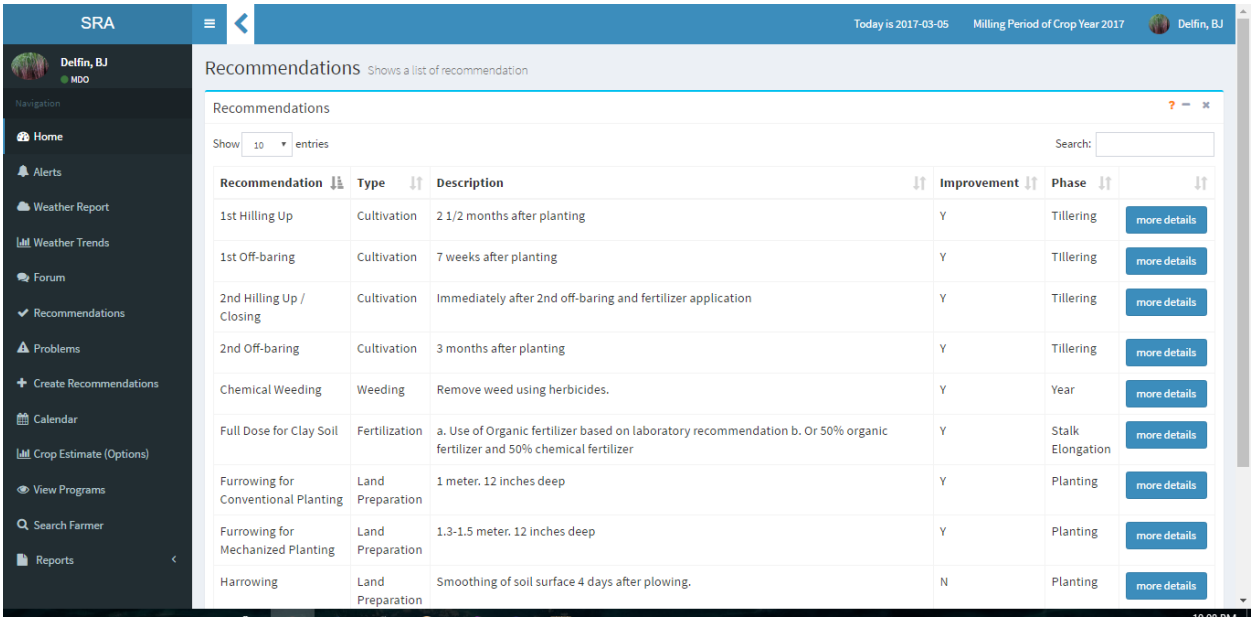


Screen Name : View Recommednation list

File Name : Recommendation.jsp

Description : The page allows the user to see the list of recommendations

Layout:



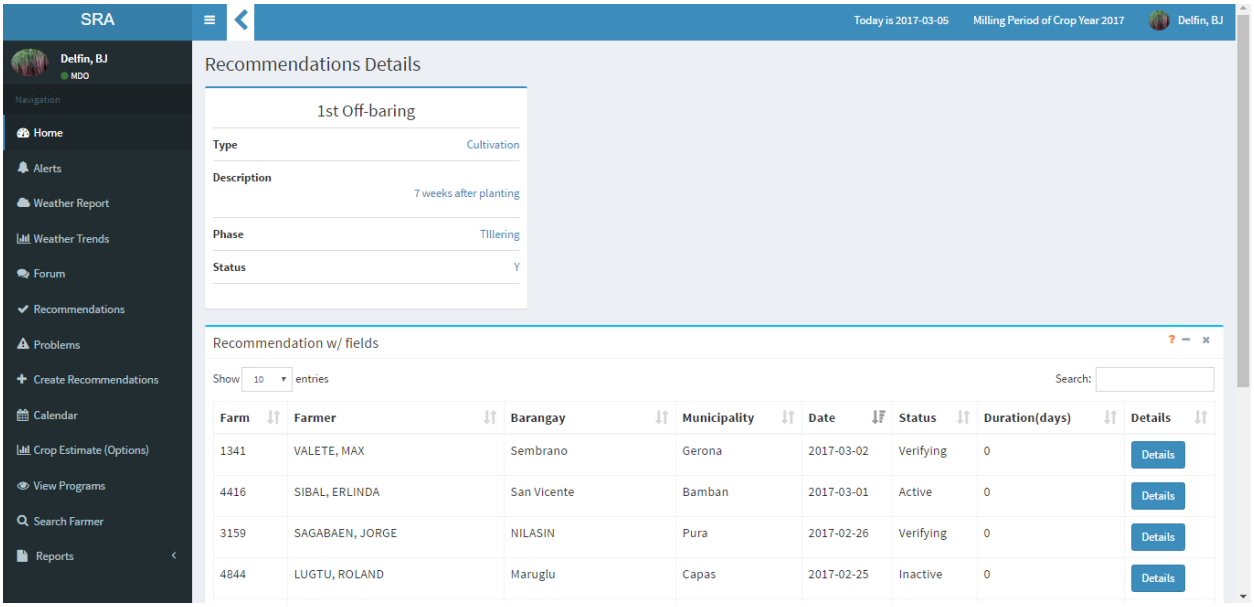
Recommendation	Type	Description	Improvement	Phase	
1st Hilling Up	Cultivation	2 1/2 months after planting	Y	Tillering	more details
1st Off-baring	Cultivation	7 weeks after planting	Y	Tillering	more details
2nd Hilling Up / Closing	Cultivation	Immediately after 2nd off-baring and fertilizer application	Y	Tillering	more details
2nd Off-baring	Cultivation	3 months after planting	Y	Tillering	more details
Chemical Weeding	Weeding	Remove weed using herbicides.	Y	Year	more details
Full Dose for Clay Soil	Fertilization	a. Use of Organic fertilizer based on laboratory recommendation b. Or 50% organic fertilizer and 50% chemical fertilizer	Y	Stalk Elongation	more details
Furrowing for Conventional Planting	Land Preparation	1 meter. 12 inches deep	Y	Planting	more details
Furrowing for Mechanized Planting	Land Preparation	1.3-1.5 meter. 12 inches deep	Y	Planting	more details
Harrowing	Land Preparation	Smoothing of soil surface 4 days after plowing.	N	Planting	more details

Screen Name : View Recommednation Details

File Name : Recommendation.jsp

Description : The page allows the user to see the details of the recommendation

Layout:

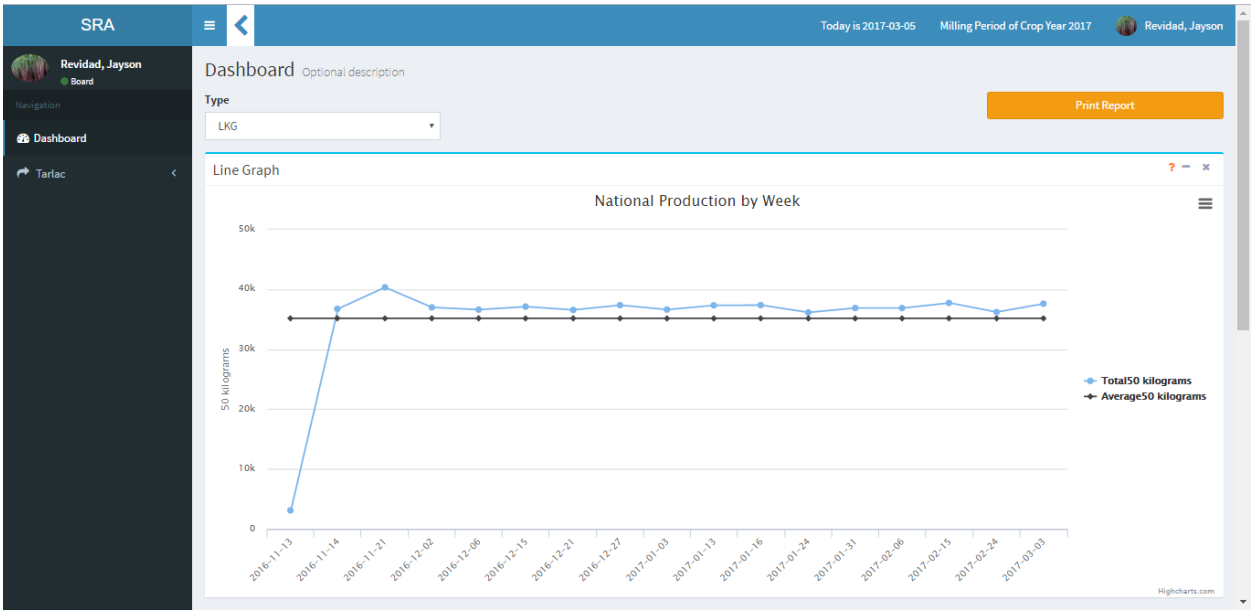


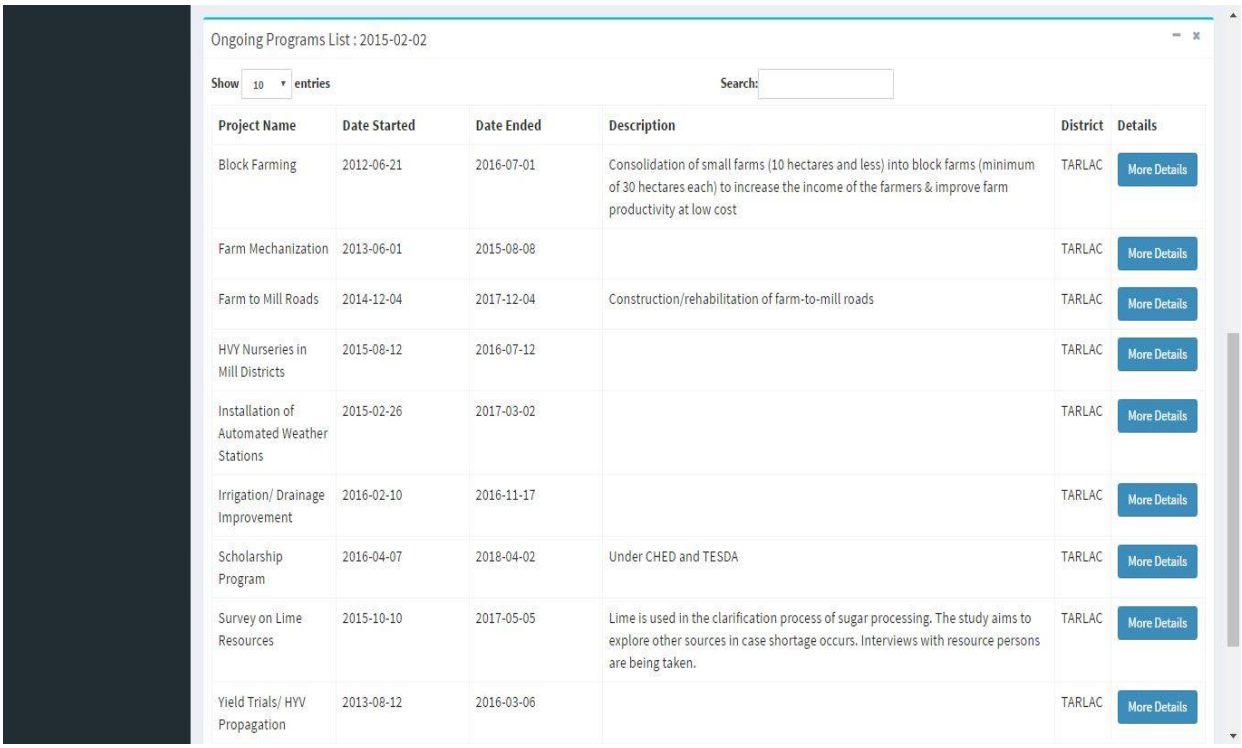
Screen Name : Dashboard

File Name : boardhome.jsp

Description : The page shows the user the national weekly production and the list of ongoing programs

Layout :





Ongoing Programs List : 2015-02-02

Show 10 entries Search:

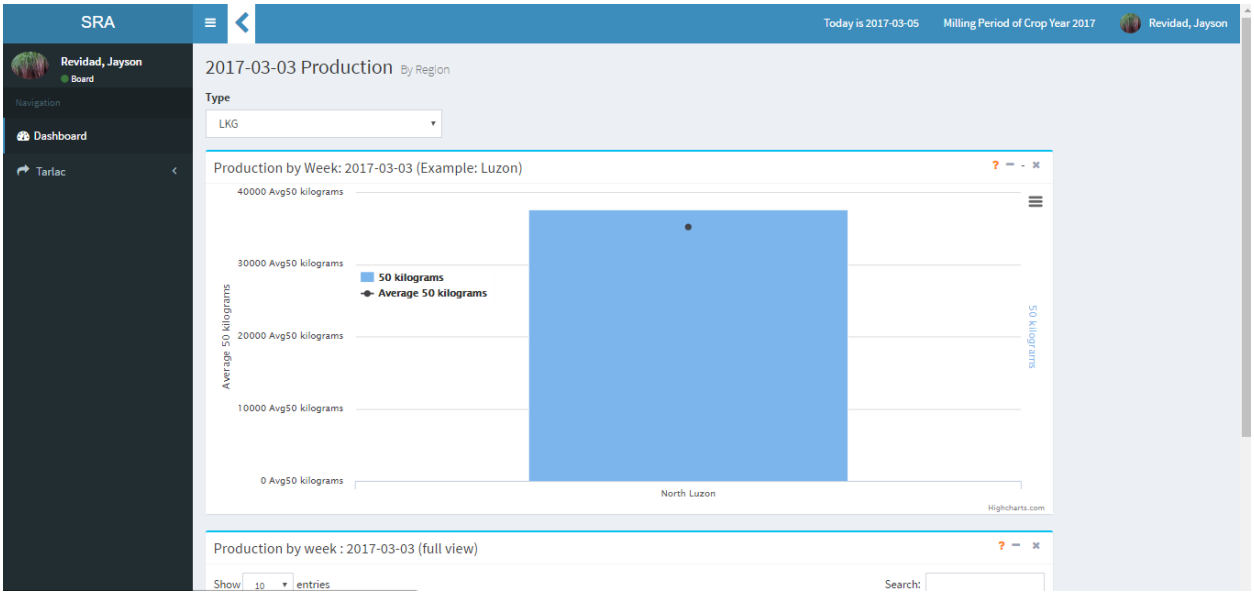
Project Name	Date Started	Date Ended	Description	District	Details
Block Farming	2012-06-21	2016-07-01	Consolidation of small farms (10 hectares and less) into block farms (minimum of 30 hectares each) to increase the income of the farmers & improve farm productivity at low cost	TARLAC	More Details
Farm Mechanization	2013-06-01	2015-08-08		TARLAC	More Details
Farm to Mill Roads	2014-12-04	2017-12-04	Construction/rehabilitation of farm-to-mill roads	TARLAC	More Details
HVY Nurseries in Mill Districts	2015-08-12	2016-07-12		TARLAC	More Details
Installation of Automated Weather Stations	2015-02-26	2017-03-02		TARLAC	More Details
Irrigation/ Drainage Improvement	2016-02-10	2016-11-17		TARLAC	More Details
Scholarship Program	2016-04-07	2018-04-02	Under CHED and TESDA	TARLAC	More Details
Survey on Lime Resources	2015-10-10	2017-05-05	Lime is used in the clarification process of sugar processing. The study aims to explore other sources in case shortage occurs. Interviews with resource persons are being taken.	TARLAC	More Details
Yield Trials/ HYV Propagation	2013-08-12	2016-03-06		TARLAC	More Details

Screen Name : Weekly Produced

File Name : viewWeeklyProductionReport.jsp

Description : The page allows the user to drill down the dashboard and view the production of each region

Layout :

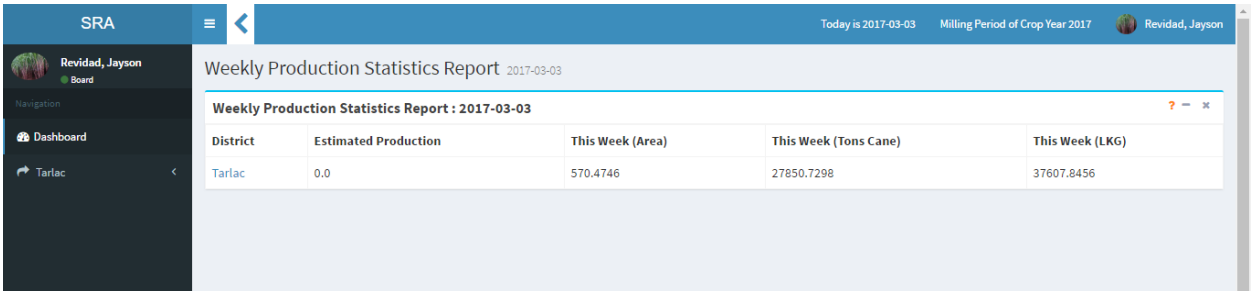


Screen Name : Weeky Statistics

File Name : Productiondetails.jsp

Description : The page shows the details of the selected region.

Layout :

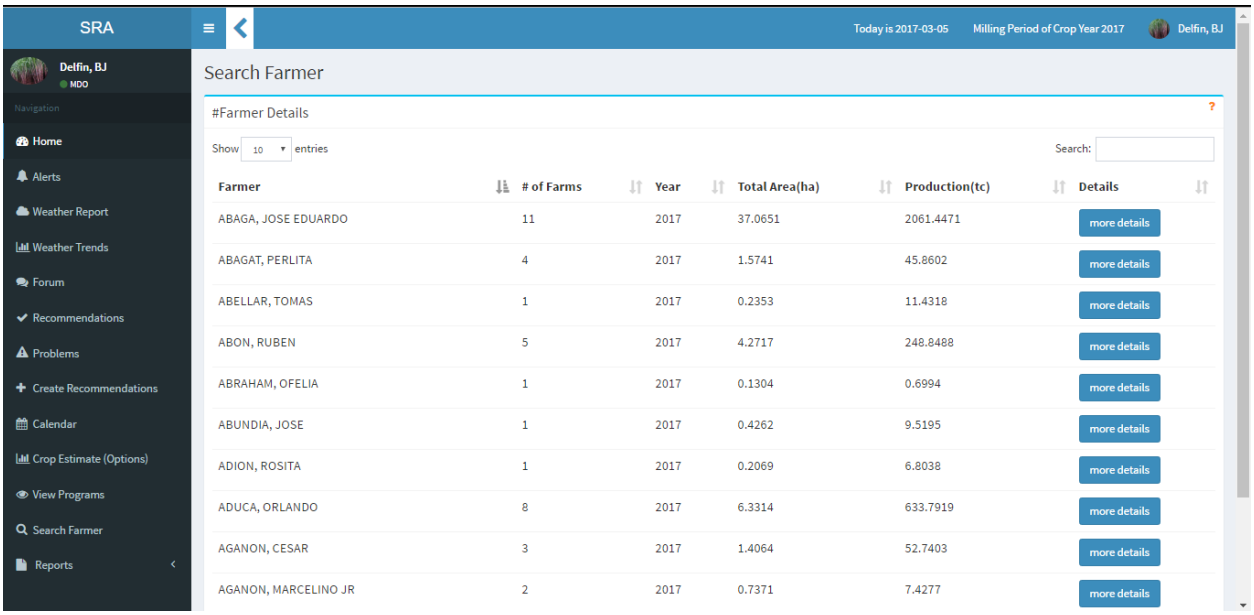


Screen Name : Search Farmer

File Name : SearchFarmer.jsp

Description : The page allows the user to see the list of farmers

Layout:

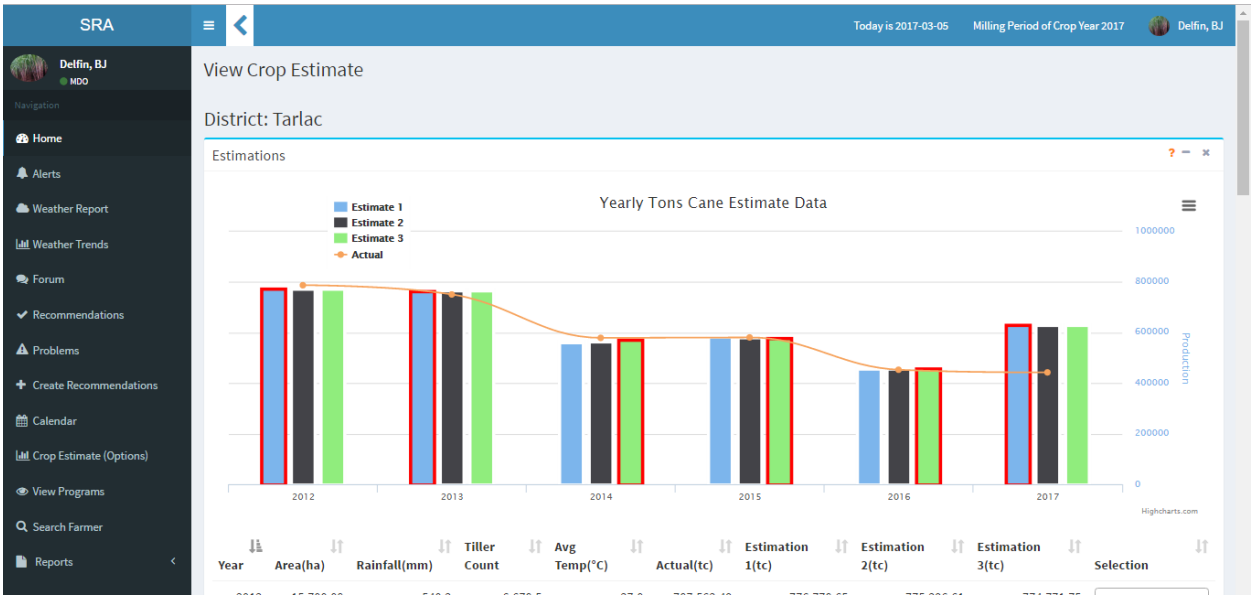


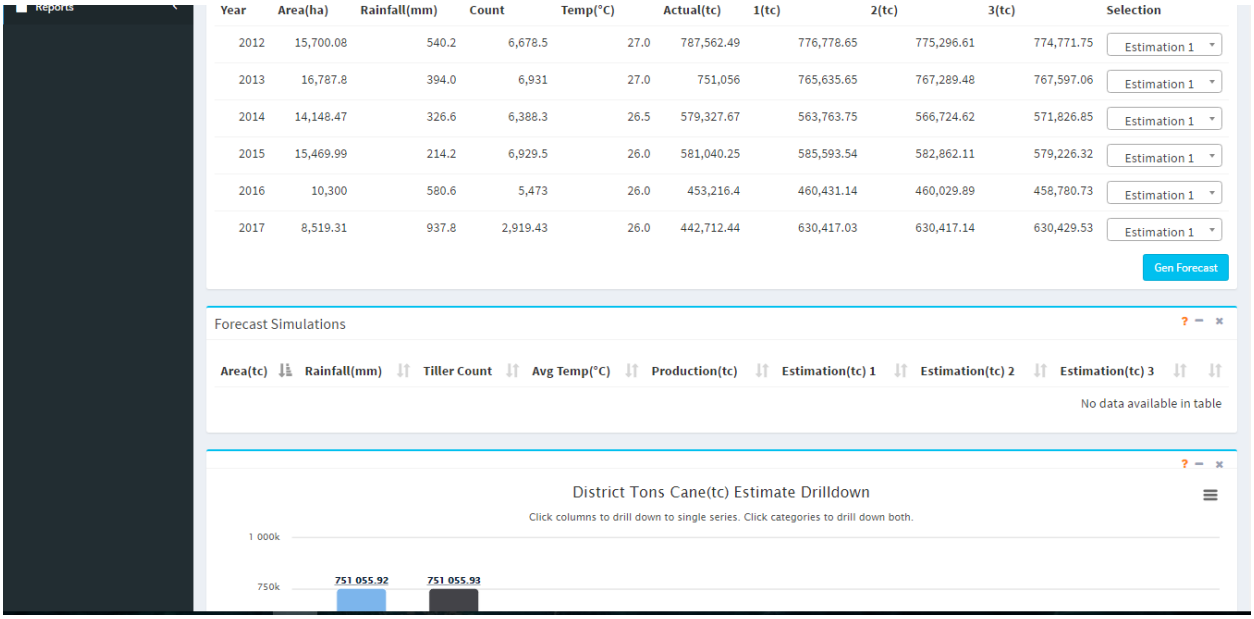
Screen Name : Crop Estimate

File Name : CropEstimate.jsp

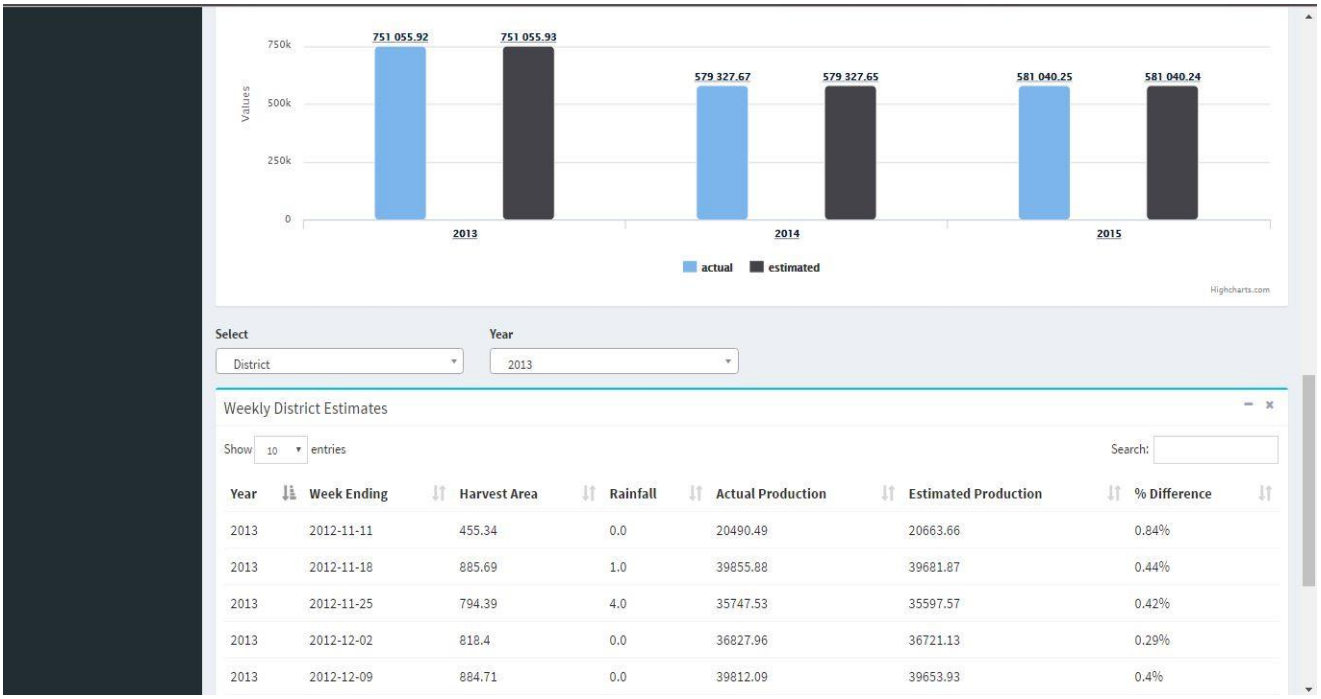
Description : The page allows the user to generate forecasts and compare them

Layout:





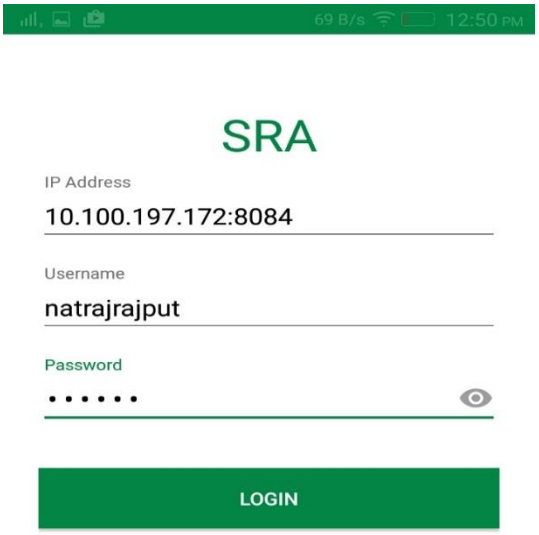
Year	Area(ha)	Rainfall(mm)	Count	Temp(°C)	Actual(tc)	1(tc)	2(tc)	3(tc)	Selection
2012	15,700.08	540.2	6,678.5	27.0	787,562.49	776,778.65	775,296.61	774,771.75	Estimation 1
2013	16,787.8	394.0	6,931	27.0	751,056	765,635.65	767,289.48	767,597.06	Estimation 1
2014	14,148.47	326.6	6,388.3	26.5	579,327.67	563,763.75	566,724.62	571,826.85	Estimation 1
2015	15,469.99	214.2	6,929.5	26.0	581,040.25	585,593.54	582,862.11	579,226.32	Estimation 1
2016	10,300	580.6	5,473	26.0	453,216.4	460,431.14	460,029.89	458,780.73	Estimation 1
2017	8,519.31	937.8	2,919.43	26.0	442,712.44	630,417.03	630,417.14	630,429.53	Estimation 1



Screen Name : Farmer Login

Description : The page shows the login for the farmer’s mobile application

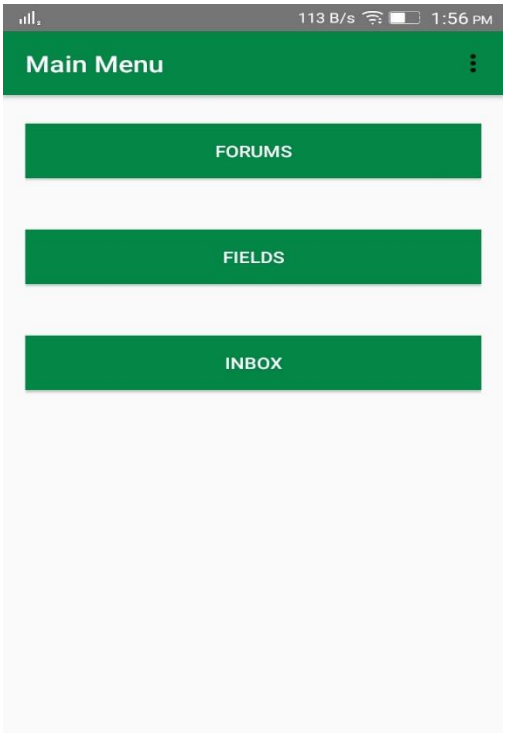
Layout :



Screen Name : Farmer Main Menu

Description : The page shows the main menu for farmer's mobile application

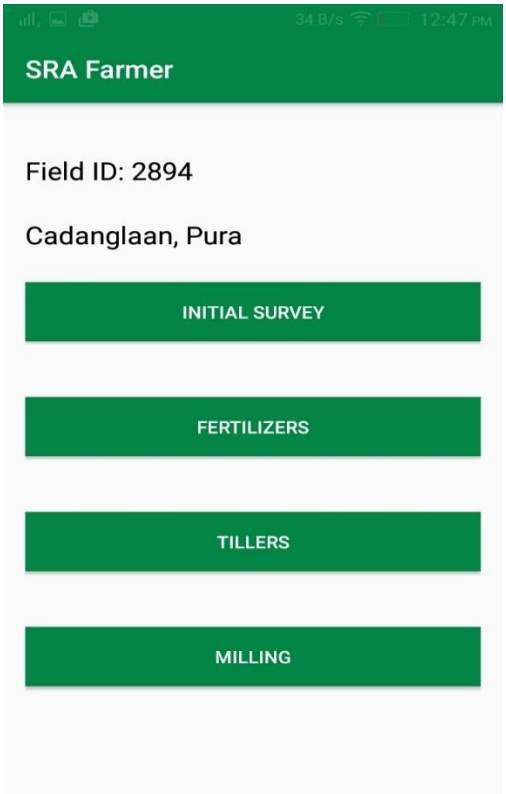
Layout :



Screen Name : Farm Survey Menu

Description : The page shows the menu for the different parts of the Crop Validation Survey

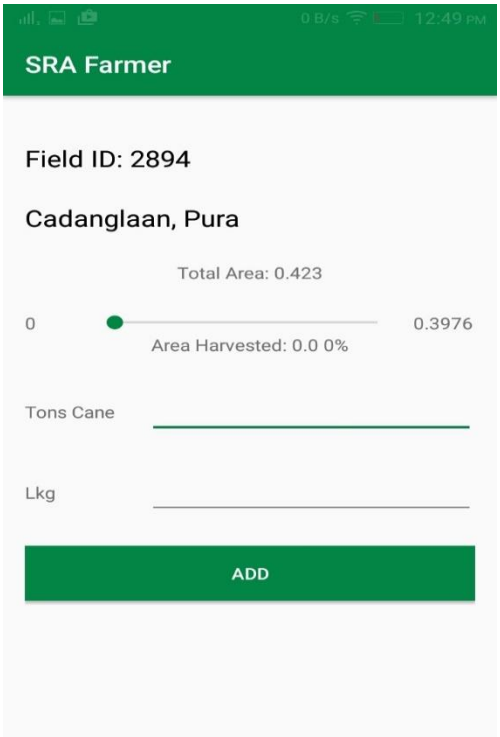
Layout :



Screen Name : Input Production

Description : The page allows the user to input his area harvested and production

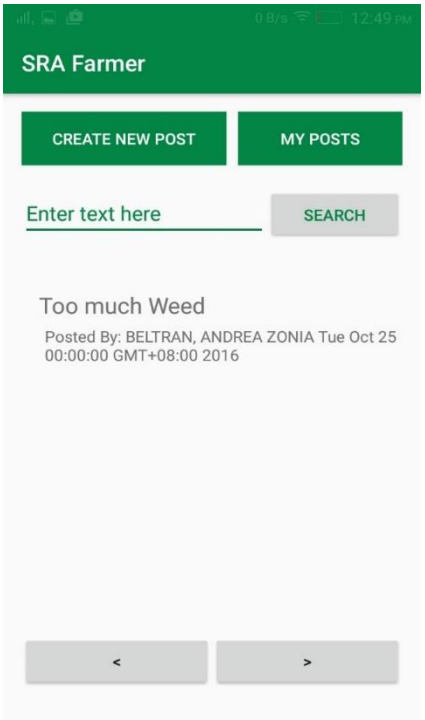
Layout :



Screen Name : Farmer Forum

Description : The page allows the farmer to view and search posts

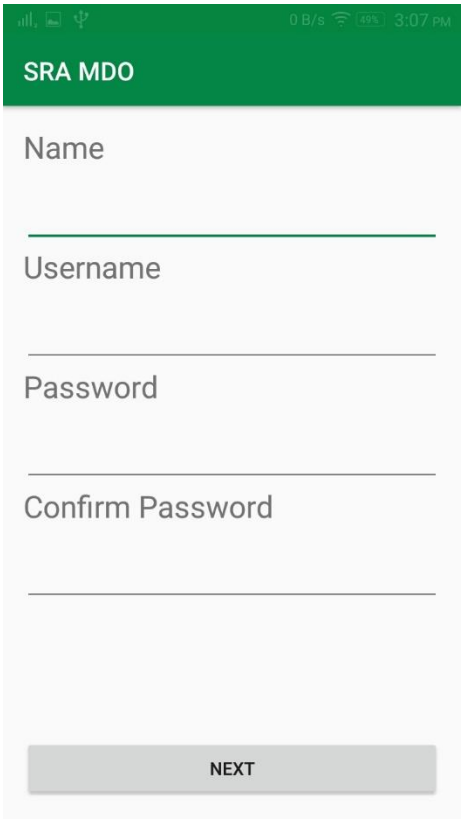
Layout :

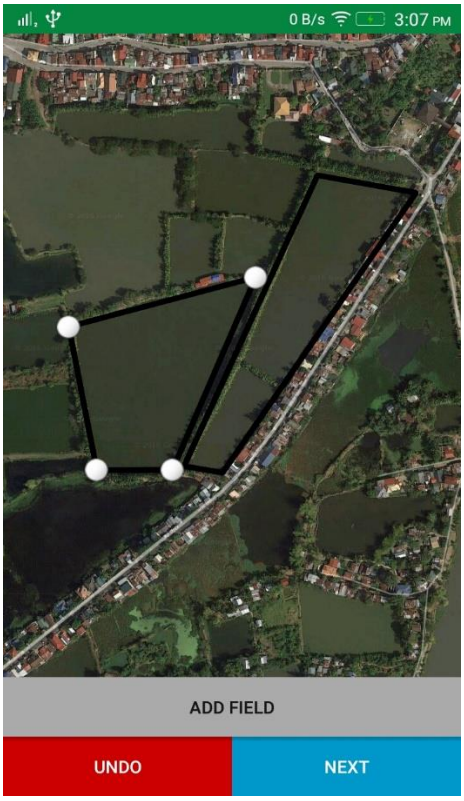


Screen Name : Create Farmer

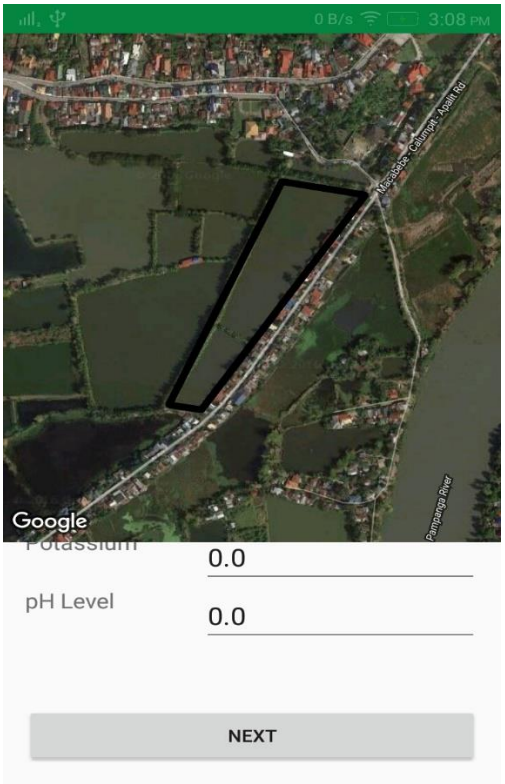
Description : The page allows the mdo to create/register a farmer and plot his area.

Layout :


0 B/s
3:07 PM
SRA MDO
Name
Username
Password
Confirm Password
NEXT


0 B/s
3:07 PM
ADD FIELD
UNDO
NEXT

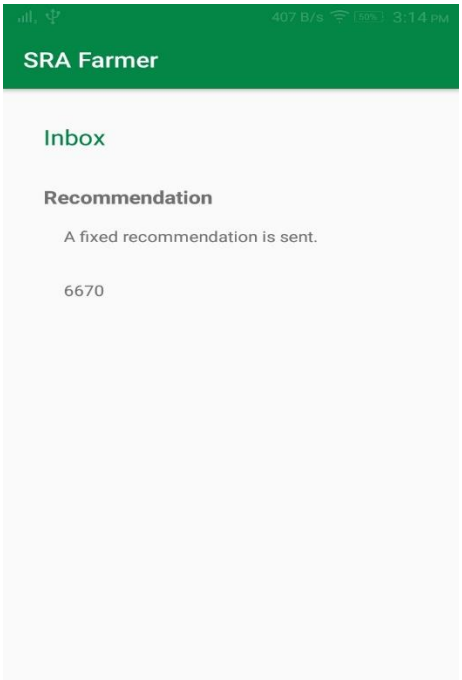
0 B/s
3:08 PM
Mexico-Sasmuan-Calumpit-Apalit Rd
Pampanga River
Google
Owner
Michael Gochioco
Municipality
CAPAS
Barangay
AMIN
Organic Matter
0.0
Phosphorus
0.0



Screen Name : Inbox

Description : The page shows the farmer's notifications for new recommendations, problems and updates to forum posts.

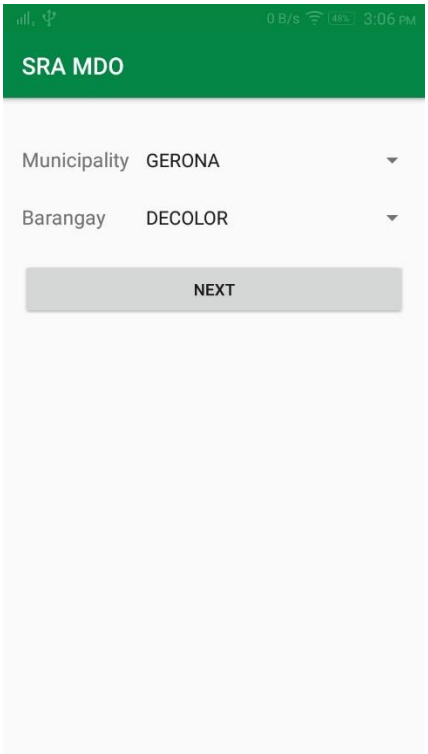
Layout :



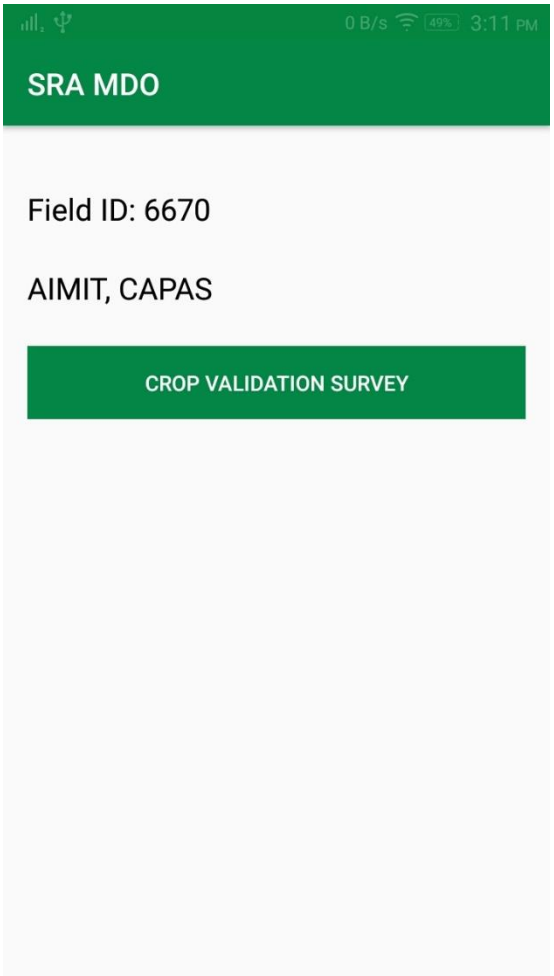
Screen Name : Crop Validation Survey for MDO

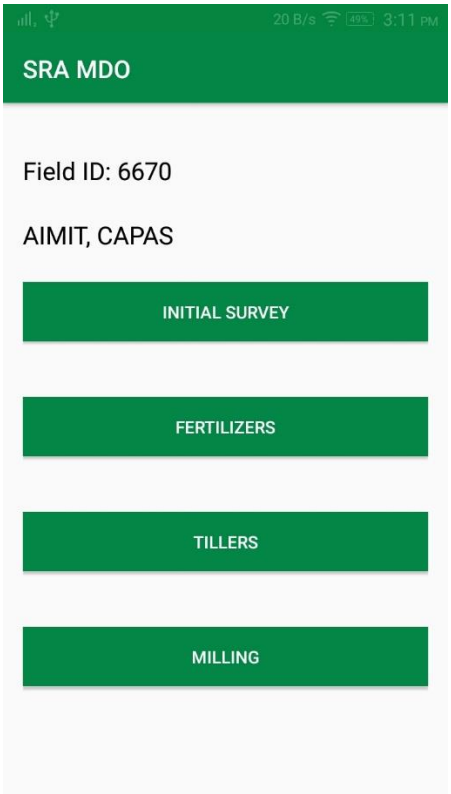
Description : The page allows the MDO to fill up the farmer's Crop Validation Survey.

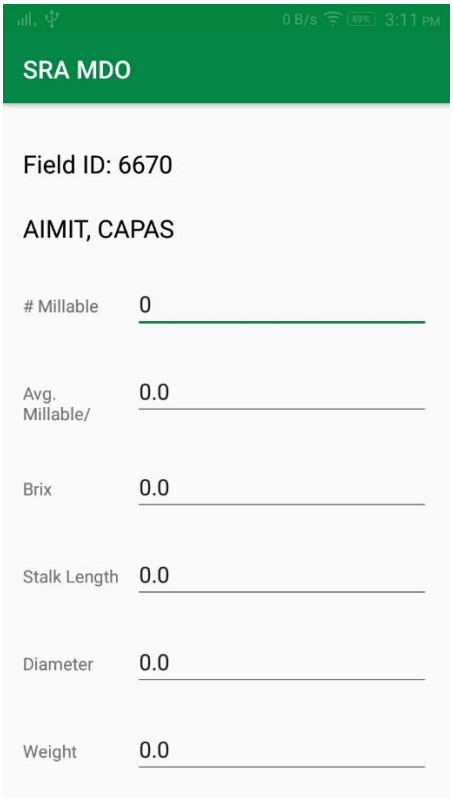
Layout :

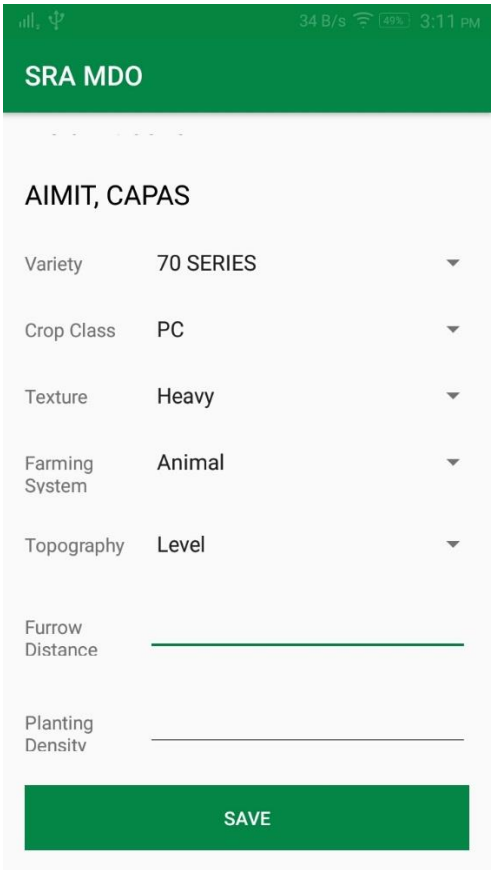

0 B/s
3:06 PM
SRA MDO
Municipality
GERONA
Barangay
DECOLOR
NEXT

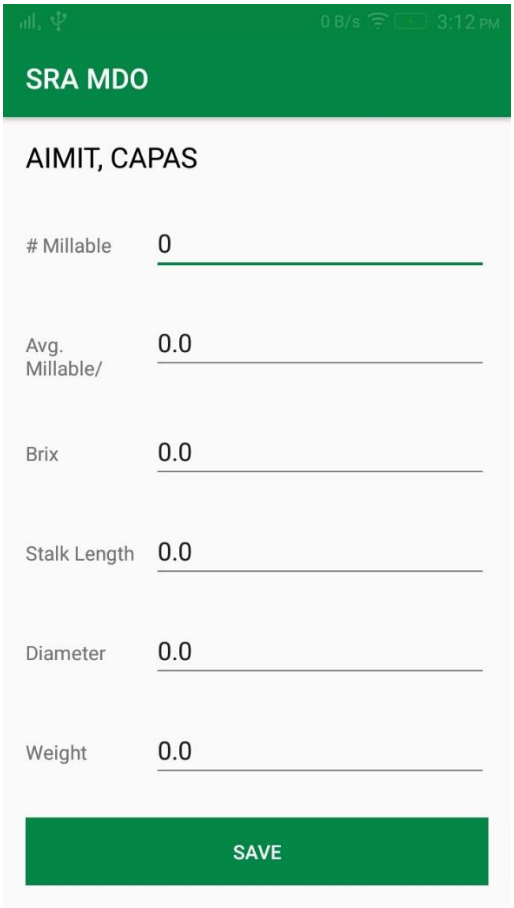
20 B/s
3:09 PM
SELECT
<
>


0 B/s
3:11 PM
SRA MDO
Field ID: 6670
AIMIT, CAPAS
CROP VALIDATION SURVEY


20 B/s
3:11 PM
SRA MDO
Field ID: 6670
AIMIT, CAPAS
INITIAL SURVEY
FERTILIZERS
TILLERS
MILLING


0 B/s
3:11 PM
SRA MDO
Field ID: 6670
AIMIT, CAPAS
Millable
0
Avg. Millable/
0.0
Brix
0.0
Stalk Length
0.0
Diameter
0.0
Weight
0.0

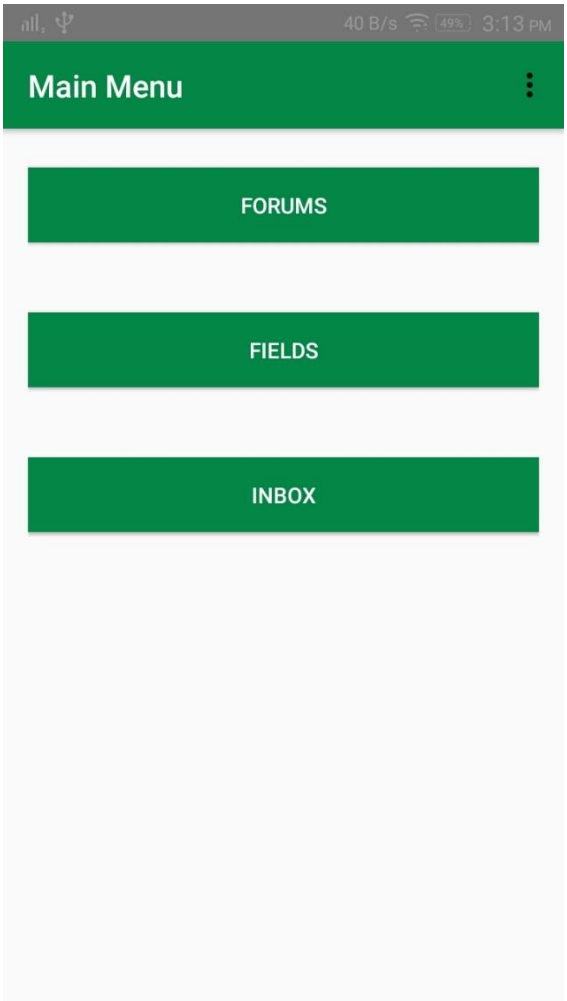

34 B/s
3:11 PM
SRA MDO
AIMIT, CAPAS
Variety
70 SERIES
Crop Class
PC
Texture
Heavy
Farming System
Animal
Topography
Level
Furrow Distance
Planting Density
SAVE



Screen Name : Farmer's Main Menu

Description : The page contains the main menu for the farmer's mobile application.

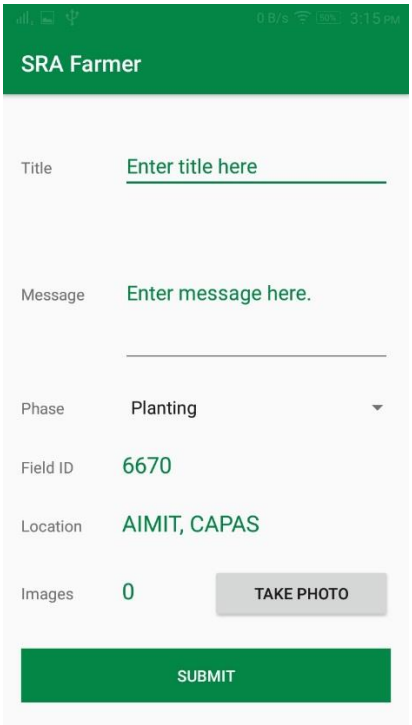
Layout :



Screen Name : Create Forum Post

Description : The page allows the farmer to submit a forum post.

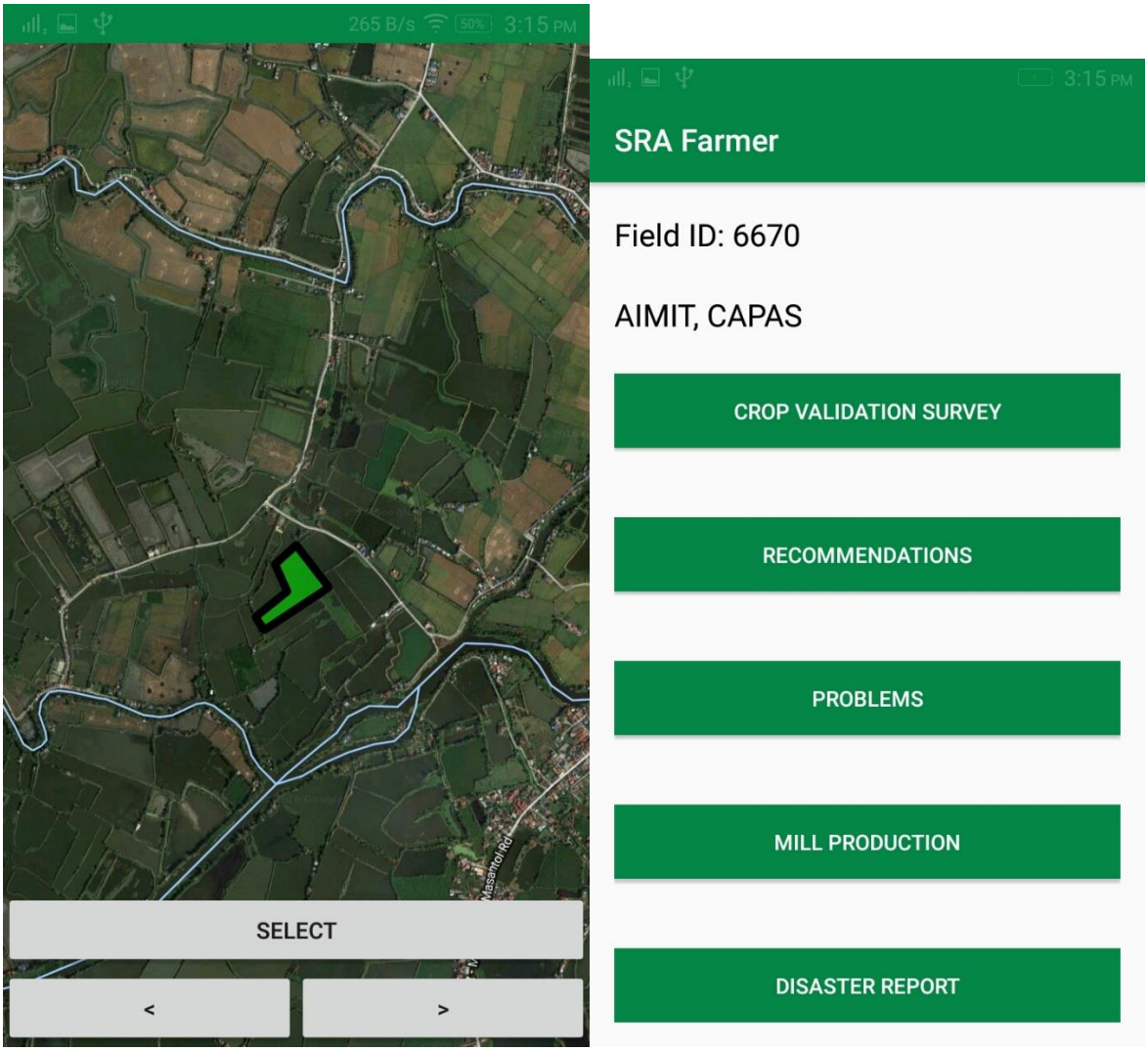
Layout :



Screen Name : Fields Menu

Description : The page contains the actions available for the fields.

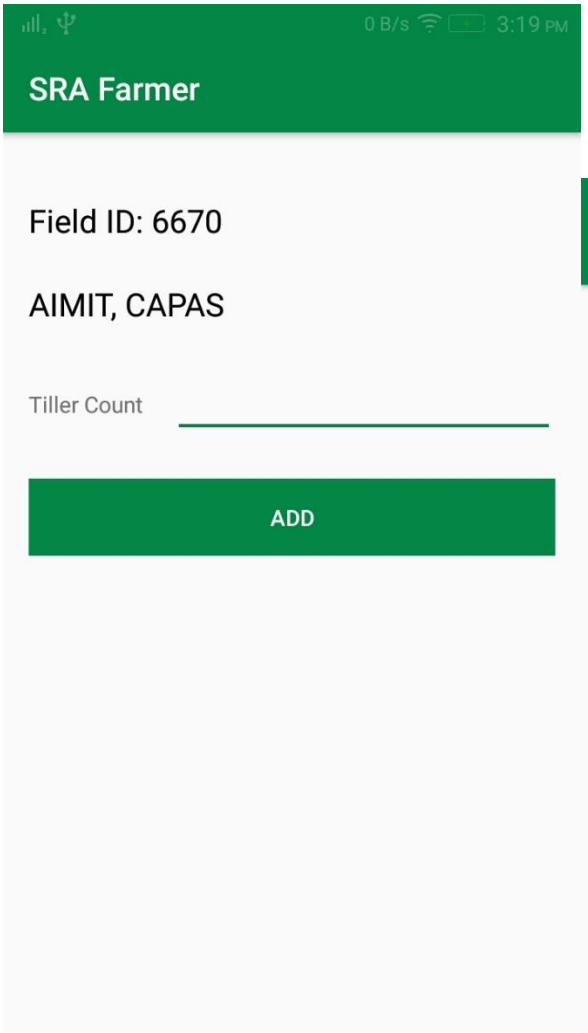
Layout :

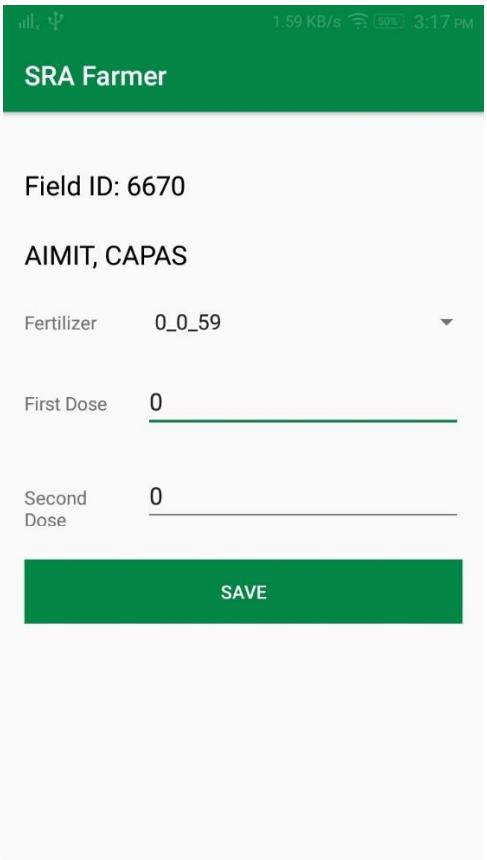


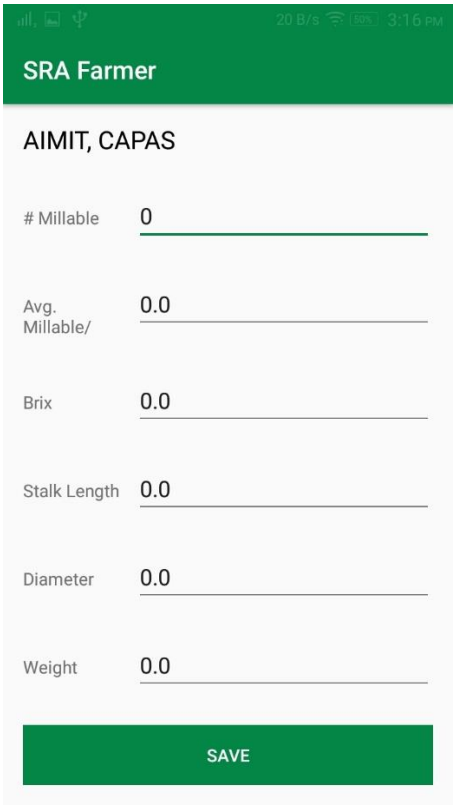
Screen Name : Crop Validation Survey

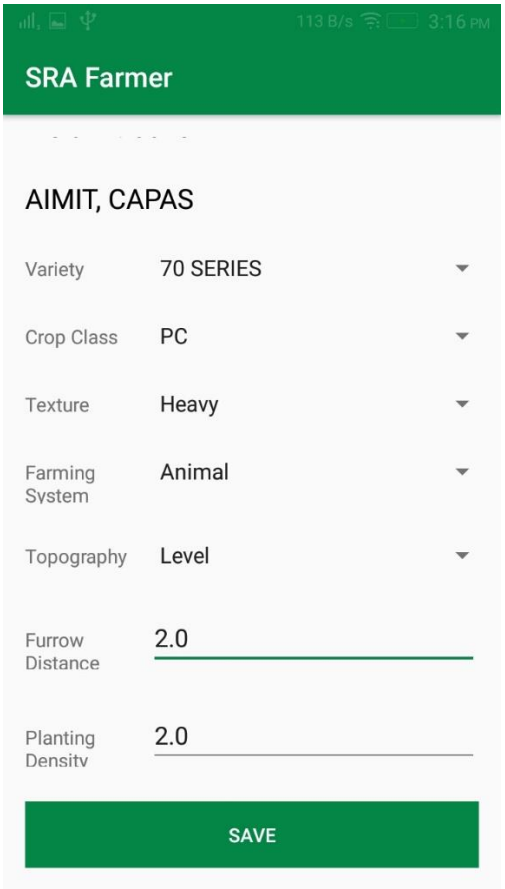
Description : The page allows the farmer to fill up the CVS.

Layout :


0 B/s 3:19 PM
SRA Farmer
Field ID: 6670
AIMIT, CAPAS
Tiller Count
ADD


1.59 KB/s 3:17 PM
SRA Farmer
Field ID: 6670
AIMIT, CAPAS
Fertilizer
0_0_59
First Dose
0
Second Dose
0
SAVE

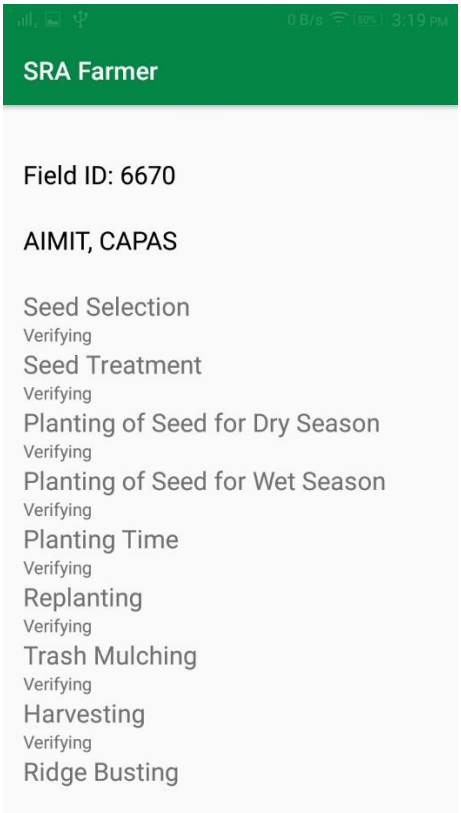

SRA Farmer
AIMIT, CAPAS
Millable
0
Avg. Millable/
0.0
Brix
0.0
Stalk Length
0.0
Diameter
0.0
Weight
0.0
SAVE

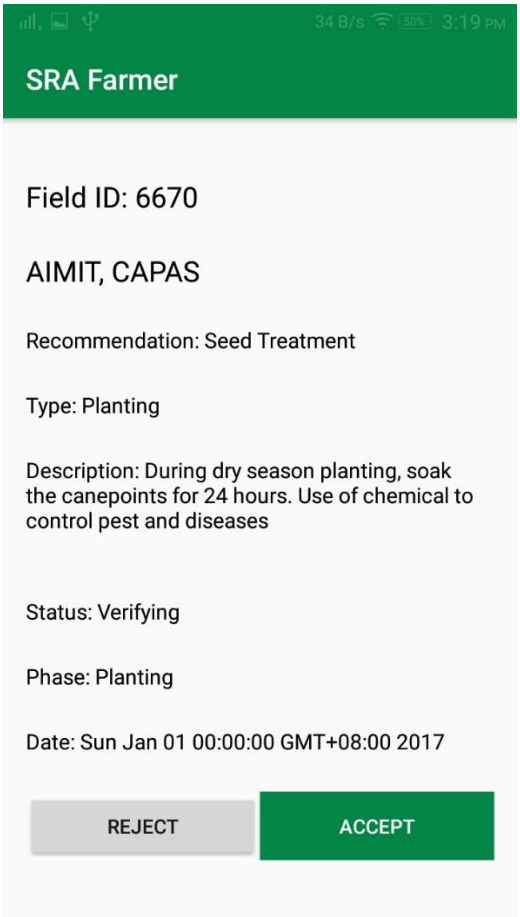


Screen Name : Recommendations List

Description : The page allows the farmer to view all verifying and active recommendations

Layout :

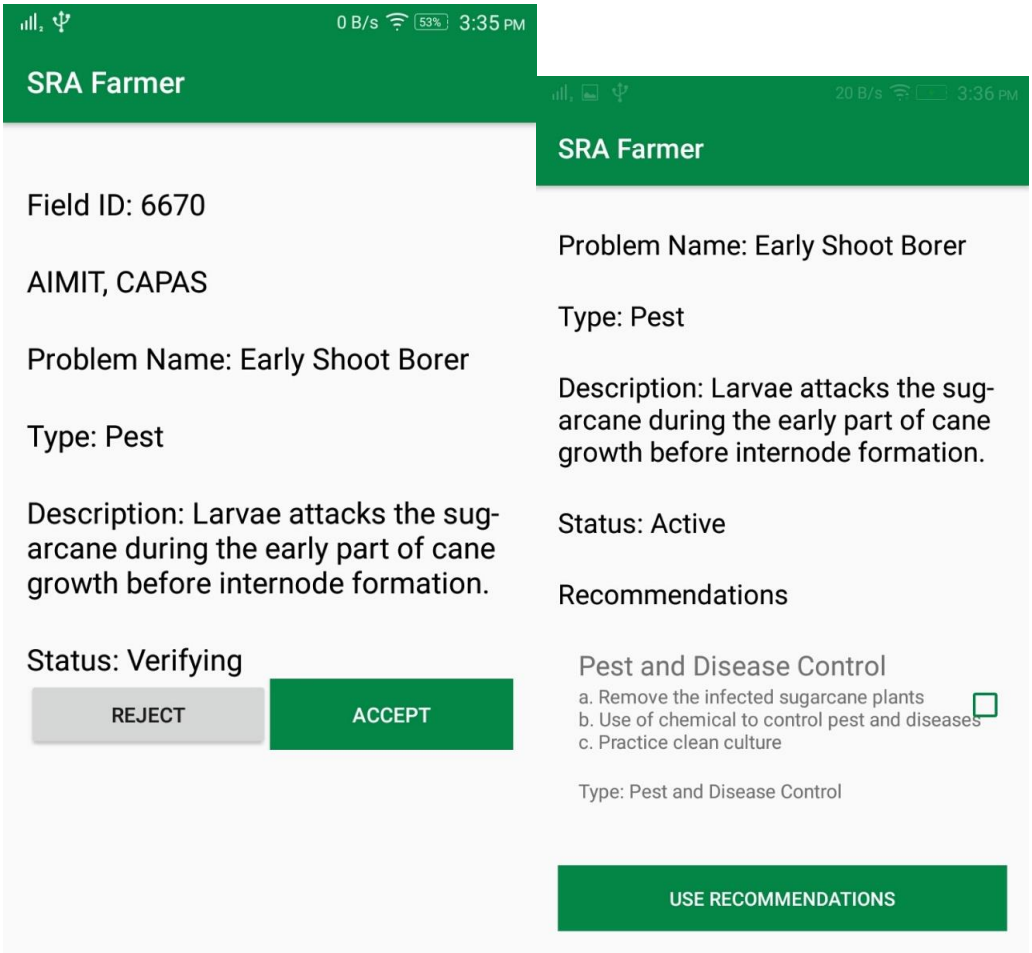

0 B/s 50% 3:19 PM
SRA Farmer
Field ID: 6670
AIMIT, CAPAS
Seed Selection
Verifying
Seed Treatment
Verifying
Planting of Seed for Dry Season
Verifying
Planting of Seed for Wet Season
Verifying
Planting Time
Verifying
Replanting
Verifying
Trash Mulching
Verifying
Harvesting
Verifying
Ridge Busting



Screen Name : Problem List

Description : The page allows the farmer to view all verifying and active problems

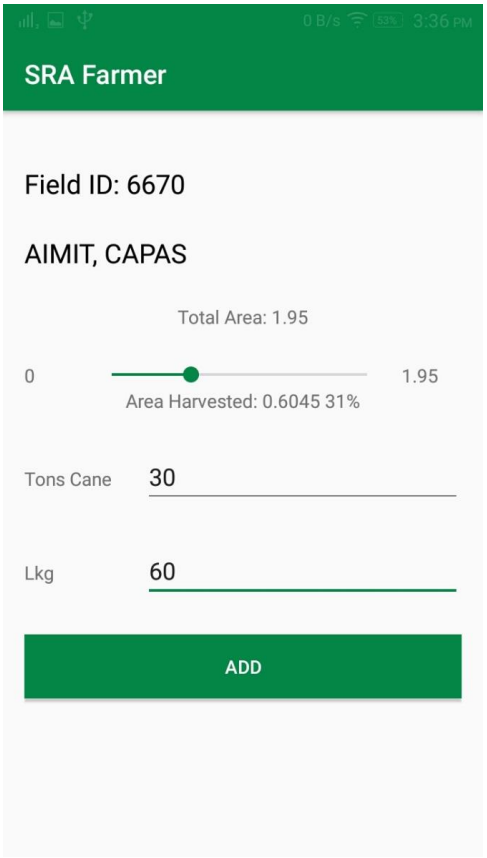
Layout :



Screen Name : Production

Description : The page allows the farmer to view all verifying and active recommendations

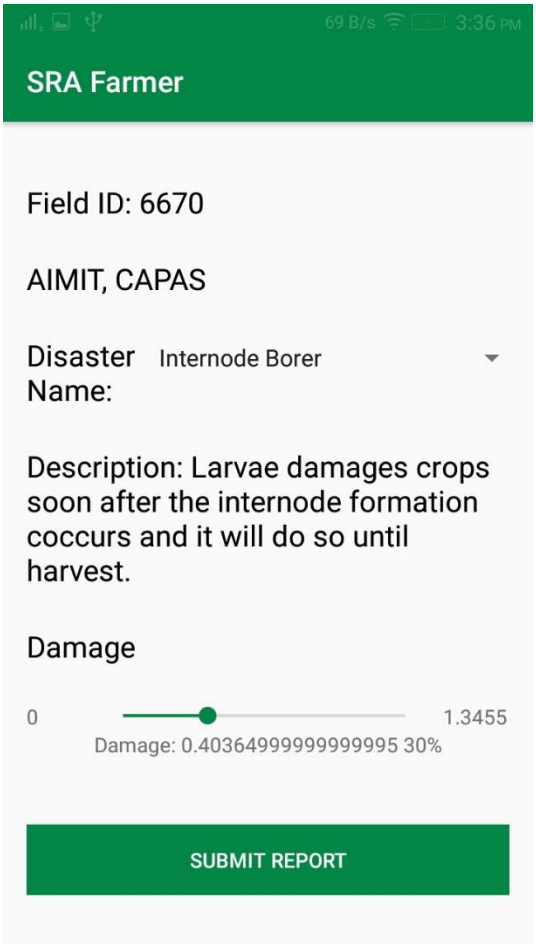
Layout :



Screen Name : Disaster Report/Survey

Description : The page allows the farmer to submit disaster report and survey

Layout :


69 B/s
3:36 PM
SRA Farmer
Field ID: 6670
AIMIT, CAPAS
Disaster Name:
Internode Borer
Description: Larvae damages crops soon after the internode formation coccurs and it will do so until harvest.
Damage
0
1.3455
Damage: 0.40364999999999995 30%
SUBMIT REPORT