

# **Pakistan Agricultural Information Systems Project**



**Designing Provincial Crop Outlook Reports:  
A Discussion-Meeting with Stakeholders  
Islamabad, Pakistan  
February 25, 2014**

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# Meeting Objectives



1. Discuss important strategies and keys to developing Provincial Crop Outlook Reports in an organized and consistent manner.
2. Develop and finalize formal report format (general or province-specific) for immediate implementation in CRS workflow.
3. Discuss issues and resolutions that might be key to the successful implementation and delivery of the reports.
4. ....and “what you would like” to discuss.....(outlined in the “parking lot”)

# Approaching Report Design Process

1. There is no single, “right” way to approach the process.
  - a. Focus on the priority information needs of both the public & private sector
  - b. Timely, relevant & accurate information is a precondition for efficient and fair agricultural markets
  
2. How a particular design task is undertaken is influenced by a number of factors, including:
  - a. Specific resources or products available
  - b. The skill sets, experiences, and knowledge
  - c. Specific goals of the task

# Approaching Report Design Process:

1. Establish clear definition of the reporting process.
  - timing and content
  - be mindful of the production of other “official reports”***
2. Identification of data needed and data acquisition procedures
  - timely report production and dissemination
3. Identification of the criteria by which the quality of the information reported can be judged
  - data user surveys

# Approaching Report Design Process

- Objectivity
  - Provide unbiased information
- Reliability
  - Based on sound data and analysis
- Timeliness
  - Fast flow to users

# “Specified Goals” of CRS

**What are the questions you want your monthly crop report to answer?**

- What will be the crop area
- What will be the production forecast
- What are the reasons for mentioned crop area
- What are the reasons for mentioned forecast
- What are the reasons for increase/ decrease
- What is the crop condition

**How do you want your report to look so that the answers are easy to understand?**

- Percentage of area increase/ decrease
- Graphical representation with means of past five years
- NDVI images for the last five years
- Price Information (Farm gate prices and actual market prices)

**What data or information do you need?**

- Temperature
- Rainfall (precipitation/ humidity/ moisture)
- Historical data on crop condition and yield
- Pests condition
- Field data
- Satellite imagery
- International market trends
- Stock situation

# Outlook Report: Main Elements

*---necessary but may not be sufficient---*

## 1. Title, Release date, Series

- archive reference

## 2. Crop summary (specific)

- Area, Yield, Production (AYP) forecasts, estimate for the reporting period (e.g. monthly)

## 3. Crop condition:

- very poor, poor, fair, good, excellent (%)
- major field operation(s)

## 4. Crop Progress:

- Percent of acreage in or beyond phenological stage

## 5. Weather/Crop Condition Supporting Maps/Graphics

- Maps detailing crop conditions (ndvi), percent normal rainfall, departure from normal average air temperature,

## 6. Outlook: next 1-2 weeks precipitation-temperature and impact on crop conditions, progress, field operations

# Outlook Report: Main Elements

*---necessary but may not be sufficient---*

## 1. Title, Release date, Series

Reporting period & reference

- archive reference

## 2. Crop summary (specific)

Quantities/Statistics

- Area, Yield, Production (AYP) forecasts, estimate for the reporting period (e.g. monthly)

## 3. Crop condition:

- very poor, poor, fair, good, excellent (%)
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## 4. Crop Progress:

- Percent of acreage in or beyond phenological stage

## 5. Weather/Crop Condition Supporting Maps/Graphics

- Maps detailing crop conditions (ndvi), percent normal rainfall, departure from normal average air temperature,

## 6. Outlook: next 1-2 weeks precipitation-temperature and impact on crop conditions, progress, field operations

Factors with probability to redefine/change the current forecast





# **A look at a Proposal Template**

designed by USDA



# Punjab Province Crop Outlook Report

January 2014

Released: February 10, 2014

Series: PJ-CR200

Logo

Cooperating agencies

## Crop Summary:

**Wheat:** The 2013/14 wheat production is forecast at 19.6 million Tons, up 2.5 percent from last month and approximately 7 percent from last year. Area is forecast at a record 7 million hectares, up 8 percent from last year. Yield is forecast at 2.7 tons per hectare, up 5 percent from last month, but down 2.5 percent from last year. This late in the season, at the end of January, soil moisture conditions and the seasonal rainfall outlook indicate that chances (*probability*) of above average wheat yield are high across the province.

**Cotton:** Cotton production is estimated at 7 million (480-pound) bales, up 3 percent from last month and 7.5 percent from last year. Area is estimated at a record 2.1 million hectares, same as last year. Yield is estimated at 726 kg/ha, up 7 percent from last year. Cotton harvest is complete. Harvest of early sown crop (*February*) started in June and late planted crop (*May*) in September. The peak harvest was in October. At the end of January cumulative seed cotton arrivals at factories was up 15 percent compared to the same time last year. The arrivals are at 80 percent of the projected production. The current estimate is based on in-season district agronomists' reports, farmer survey, and satellite data analysis. In general, satellite data (NDVI) indicated variations in biomass, green leaf area (LAI) and the state of health. Most of the cotton growing areas had favorable crop conditions early-to-mid season but relatively poor conditions mid-to-late season due to soil moisture stress, high temperatures and pink-bollworm infestation.

## Crop Condition: percent of projected area

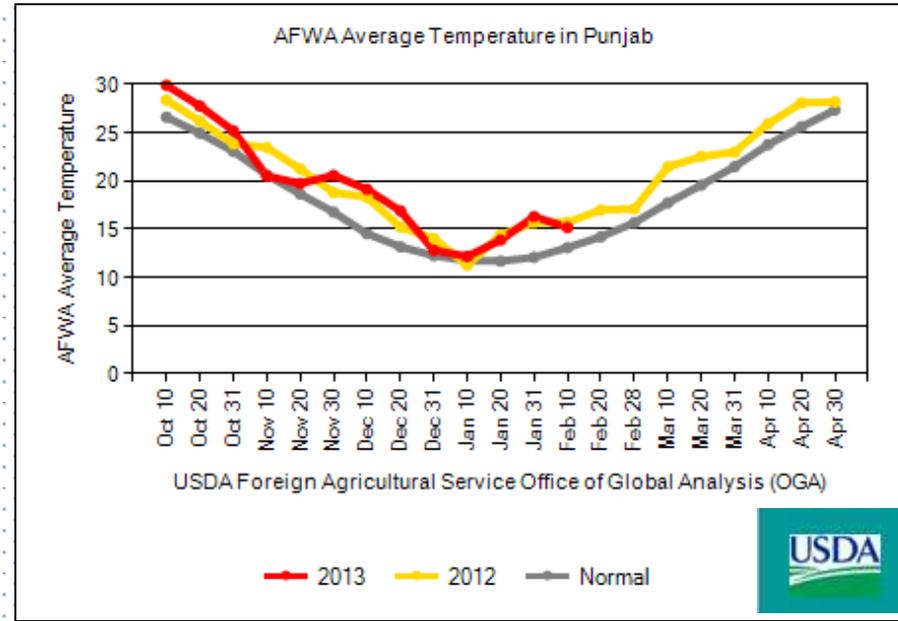
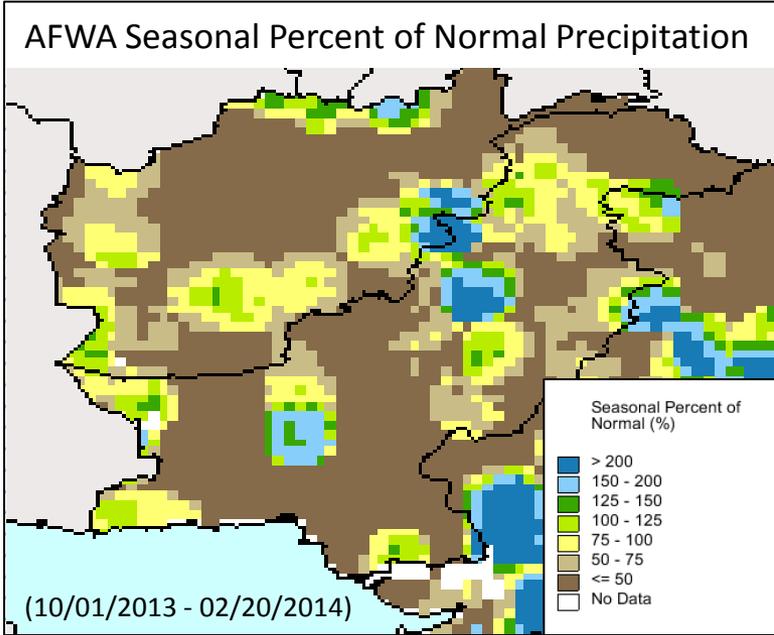
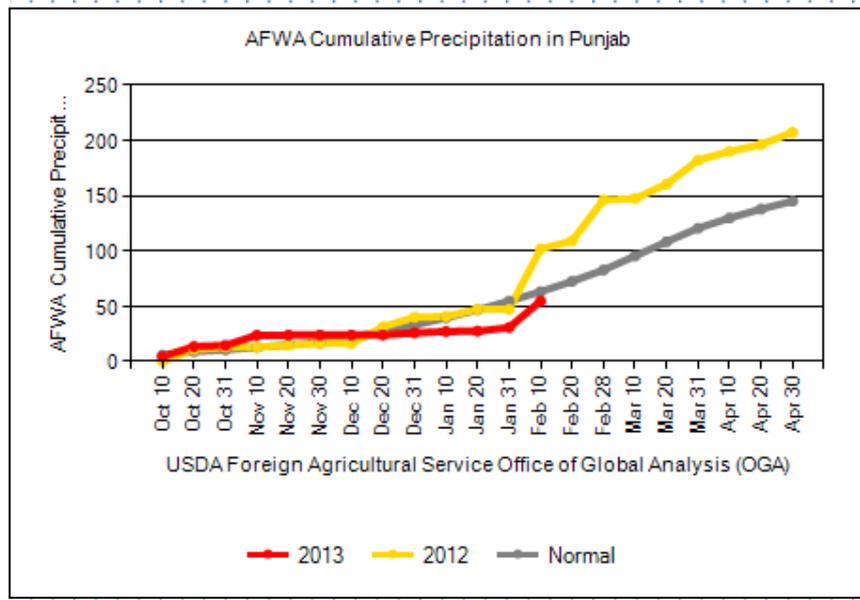
Crop	Very poor	Poor	Fair	Good	Excellent
Rice	-	5	20	65	10
wheat	1	5	22	60	12
Cotton	2	5	20	65	8

## Crop Progress:

Crop	January 31, 2014	January 31, 2013	January 31, Record Year	Average (five-year)
Wheat				
Headed	99	90	100	100
Milk	90	62	98	99
Mature	50	22	95	88
Harvested	3	1	21	30

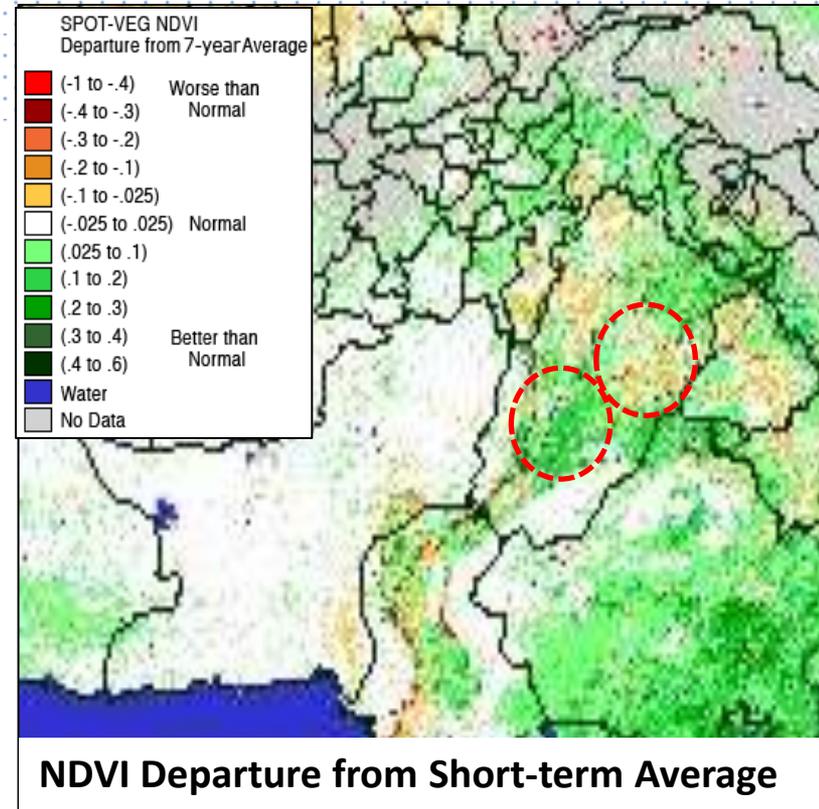
## Weather: Temperature & Precipitation

The seasonal rainfall to date (10/01/2013 - 02/20/2014) varied across the wheat cropping region, most areas received below average rainfall except for some areas in central Punjab that received average-to-above-average. However rainfall during planting period (November-December) was average for almost the entire cropping region and helped to replenish irrigation water reserves and improve soil moisture conditions. Most of the plains received enough moisture to promote wheat growth and development leading to favorable seasonal crop conditions. Nearly two-thirds (62%) of the wheat was rated in good to excellent condition in December, although pockets of dryness were a concern in the southern districts. Generally near-to-above-normal temperatures covered the cropping regions. January's warmer and dry weather conditions promoted fieldwork and did not adversely affect crop conditions due to adequate irrigation supplies.



## Vegetation Indices:

The NDVI anomaly data characterize crop conditions in Punjab province, January 21-31, 2014. There were positive NDVI departures from short-term average in central districts while negative deviations were observed in NE and NW districts. During this period the wheat crop was at flowering-to-milk stage. In general the indices in the majority of the cropping areas were above 60 (*indicating favorable conditions*), therefore average-to-above average yields and production is anticipated. Temperature conditions in March will be critical in determining the final conditions and yield expectations.

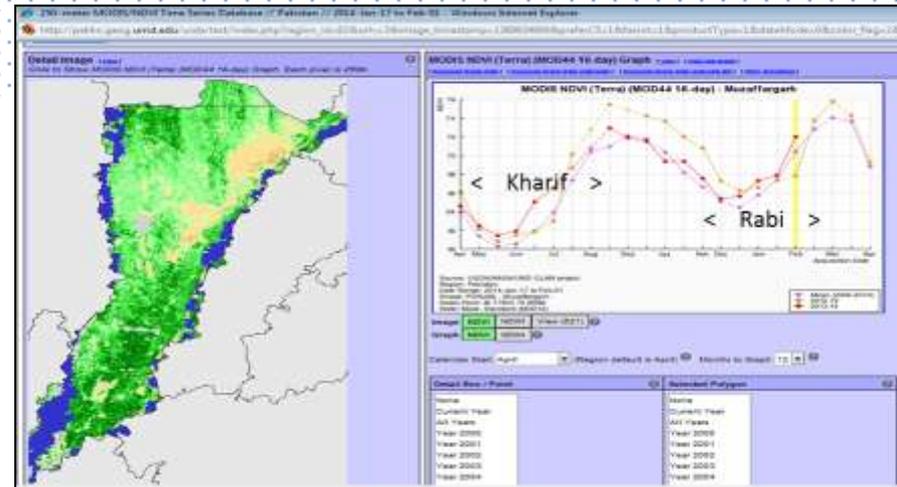


## Outlook, February 10-17:

Weather forecast for the next 2 weeks indicates that temperatures will be below normal in the eastern districts and near normal in the west. Precipitation will be near normal across much of the province. The projected weather conditions, if achieved, will be favorable for wheat maturity. The current wheat crop outlook will be sustained and achieved on the assumption of normal (low) temperatures and average rainfall in the months of March-April, a critical period for wheat physiological maturity and harvest.

## Vegetation Indices:

The NDVI map and graph characterizes crop conditions in Muzaffargarh, Punjab province, January 17-February 1, 2014. During this observation period the wheat crop was at advanced flowering to milk stage. In general the indices in the majority of the cropping areas were above 60 (*indicating favorable conditions*), therefore average-to-above average yields and production might be anticipated . However, temperature conditions in March will be critical in determining the final conditions and yield expectations.



## Outlook, February 10-17:

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# Crop Summary: Major Factors

remember importance of reference points or benchmarks:  
all about relativity: previous year, average, record, drought year

- ✓ Statistics: Area, Yield, Production
- ✓ Time of sowing: early, late, normal...
- ✓ General seasonal weather: normal, favorable, unfavorable (excess, drought, etc.)
- ✓ State of irrigation reservoirs and distribution
- ✓ State of plant growth and development
- ✓ Phenological phase: vegetative, flowering, physiological maturity, harvest

Reporting major growth/development stages:  
The crop stages often influence when to collect satellite data for a particular application

e.g. Phenological stages of wheat crop

1	Germination
2	Emergence
3	Third Leaf
4	Tillering
5	Shooting
6	Heading ✘
7	Flowering ✘
8	Milk Maturity ✘
9	Wax Maturity
10	Full Maturity ✘

# Crop Outlook Report Sources of Data

## Conditions and Progress

1. **Crop conditions**
  - NDVI....GLAM
  - SUPARCO
  - VHI....NOAA STAR
2. **Weather conditions:**
  - Pakistan Meteorological Department
  - USDA Crop-Explorer
    - WMO, AFWA, CMORPH,
3. **Soil moisture conditions**
  - PMD National Agromet Centre
  - USDA Crop-Explorer
4. **District Reports, Farmer survey**
  - Scheduled or random

## Area and Yield (A & Y)

1. Farmer Reported Survey data:
  - planting intentions (A)  
...before and during the season
  - Yield surveys (Y)
2. Area Frame (A)
3. List Frame (A & Y)
4. In-season satellite data land-cover classification (A)
  - Supervised classification
5. Crop cutting experiments
  - Field yield measurements (Y)
6. Yield models...regression models (Y)

# A look at a Template Designed by FAO

**N°1  
JAN  
2014**

# CRS CROP BULLETIN



## SUMMARY

Wheat is the important crop and cultivated on the largest area, in almost every part of the province. It contributes about 14 % to the value added and 3.6 % to GDP.

Wheat is grown in different cropping systems, such as cotton-Wheat, rice-Wheat, fallow -wheat etc. The cotton-wheat and rice-Wheat both systems, together contribute about 60 % of the total wheat, where as 40 % area lies in central Punjab and barani (rainfed) area.



## WHEAT

The sowing of wheat crop is about 94 % completed in irrigated area where as it is completed in un-irrigated area. The third growers opinion survey conducted by the Department the area of wheat crop in the divisions Bahawalpur, Gujranwala and D.G.khan has increasing trend and over all trend in the punjab is about increasing 1%-2 %. The other Rabi crops like Gram , masoor (Lentil), and oil seed acreage has decreasing trend.

Punjab province has surplus stocks of wheat. Last year wheat production was 18.587 million tonnes considering the estimated population of Punjab as 94 million wheat consumption is about 13.140 million tonnes and the surplus is about 5.448 million tonnes.

### WHEAT CONSUMPTION

YEAR	PRODUCTION (MILLION TONNES)	POPULATION IN MILLION	DEMAND IN MILLION	REDUCTION @1PP	SURPLUS OR DEFICIT (MILLION TONNES)
2008-09	18.420	90.00	10.80	1.84	5.778
2009-10	17.920	94.00	11.28	1.79	4.848
2010-11	19.041	94.00	11.28	1.90	5.857
2011-12	17.040	94.00	11.28	1.70	4.056
2012-13	18.587	94.00	11.28	1.86	5.448

Note: Per Capita consumption Wheat @ 120 kg/Annum



## POTATO

The potato crop is grown mainly in Punjab in the districts of Okara, Sahiwal, Pakpattan, Kasur, Chinot, Jhelum, Lahore and Sialkot. The area of Potato (Autumn) crop is decreased by 8 % and its production is expected to be decrease.



## SUGARCANE

The sugarcane crop second estimate in the Punjab 2013-14 the area is Placed at 1.788 million acres as against 1.897 Million Acres in 2012-13. Production of sugarcane is estimated to be 40.846 Million tonnes as against 42.982 million tonnes shows a decrease of 5.0 % over the last year.



## COTTON

The cotton crop was damaged by heavy rains/floods about 0.118 Million acres effected.

According to second estimate in the Punjab 2013-14 the area is Placed at 5.290 million acres as against 5.705 Million Acres in 2012-13 which shows a decrease of 7.27 % over the last year. Production of cotton is estimated to be 8.866 Million bales during the year 2013-14 as against 9.526 million bales shows a decrease of 6.93 % over the last year.

### WORLD COTTON PRODUCTION

MILLION 490LB BALES	2012-13	NOV 2013/14	DEC 2013/14
China	35.0	32.5	32.0
India	28.5	29.0	29.0
United States	17.3	13.1	13.1
Pakistan	9.3	9.7	10.0
Brazil	6.0	7.4	7.4
Rest of the world	27.0	25.5	25.4
World	123.1	117.2	116.8



## RICE

The rice crop is assessed at 4.398 Million acres in the Punjab 2013-14 against 4.229 Million Acres in 2012-13 which shows a overall decrease of 4.0 % over the last year.

Production of rice is estimated to be 3.415 Million tonnes during the year 2013-14 as against 3.478 million tonnes shows a decrease of 1.8 % over the last year.

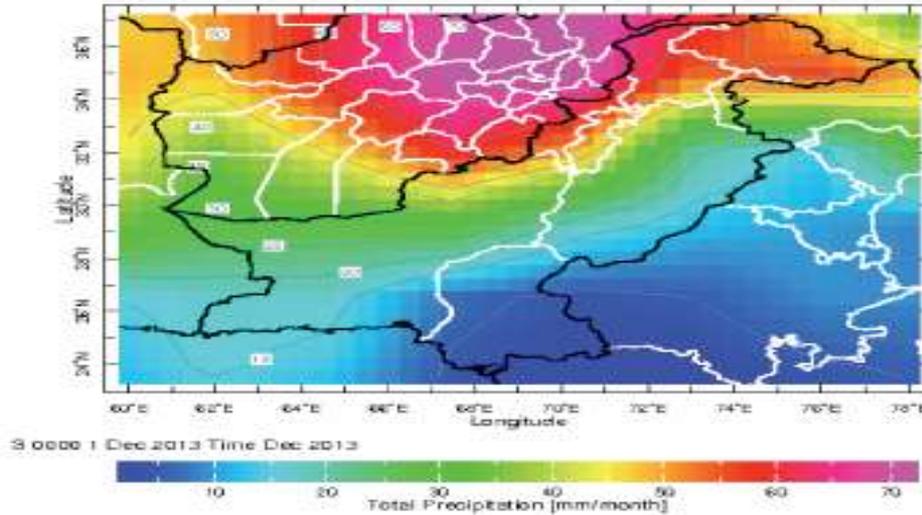
### COTTON ARVAL (LAC BALES)

YEAR	PUNJAB	SIKH	TOTAL
2012-13	96.08	34.07	129.15
2013-14	90.00	36.71	126.71
Pasture	77	54	68

2 <sup>ND</sup> KHARIF ESTIMATES IN THE PUNJAB						
CROPE	AREA IN MILLION ACRES		PRODUCTION IN MILLION TONNES/ SALES		AVERAGE YIELD IN MDS/ACRE	
	2013-14 2nd	2012-13	2013-14 2nd	2013-14 2nd	2013-14 2nd	2012-13
COTTON	5.290	5.705	8.868	9.528	21.56	21.47
RICE	4.398	4.229	3.415	3.478	20.81	22.03
SUGARCANE	1.788	1.897	40.848	42.982	612	607

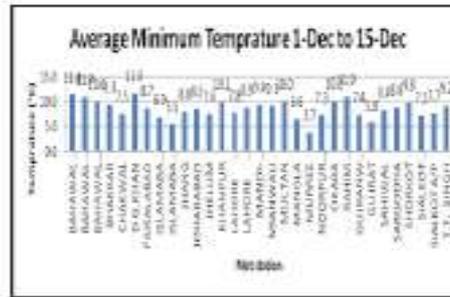
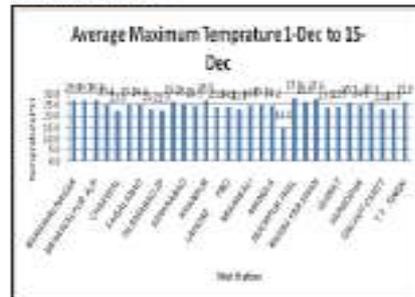
**RAINFALL:**

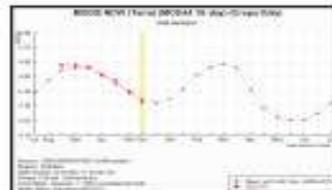
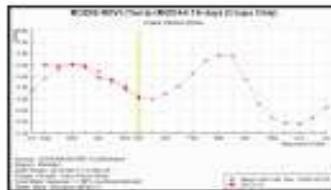
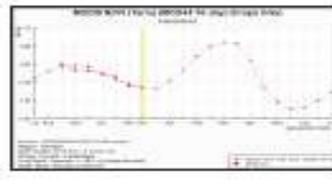
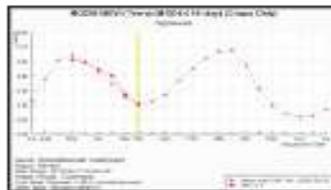
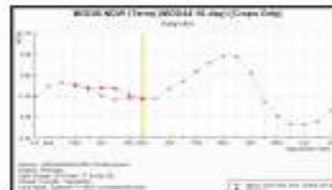
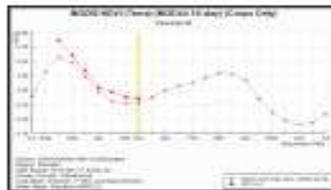
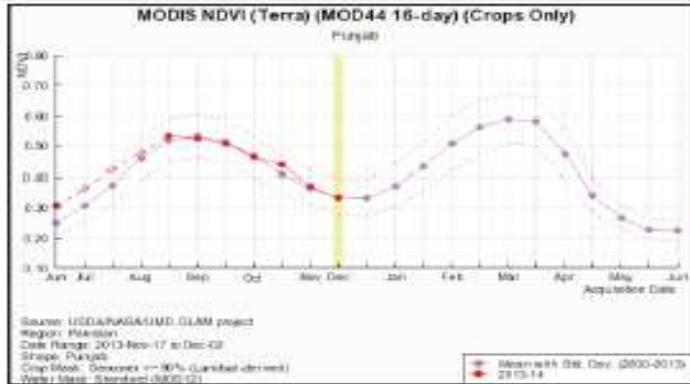
Spatial distribution of expected Rainfall during Dec, 2013 (GCM-ECHAM)



**AVERAGE MAXIMUM/MINIMUM TEMPERATURE**

December 2013





**REMARKS FROM THE FIELD**

Warm Weather for this time of year and adequate rainfall.

Micah Crfield- Ashe County Extension

Rainfall began on Thursday. Flood conditions on Saturday. Some areas of the county have received as much as 4 inches during this event.

Joanna Radford- Surry County Extension

Received approximately 2.0" rain this weekend. Had been 2.6" below normal for the calendar year previous to this rainfall. Much needed. Dry weather conditions and above normal temps for the year have had producers preparing land earlier than usual.

Jennifer Gilbert- Forsyth/Yadkin County FSA

This past weekend we had up to 3 inches of rain in some areas. Fields are very wet. Before the rain several tobacco farmers got their fields bedded up. Fertilizers have been applied to pastures and they are Et mos mos simus, con elendae nulluptas repudis sit aut odis nam di omnis valibuedam estur anihil andisci minvelberat quatsep icaboratqui dolupit minis eius.



# Questions and Comments

# Thanks

**Dath K. Mita, PhD**

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