AGROMETEOROLOGICAL ASSESSMENT OF KIREMT 2003

BY

AGROMETEOROLOGICAL TEAM

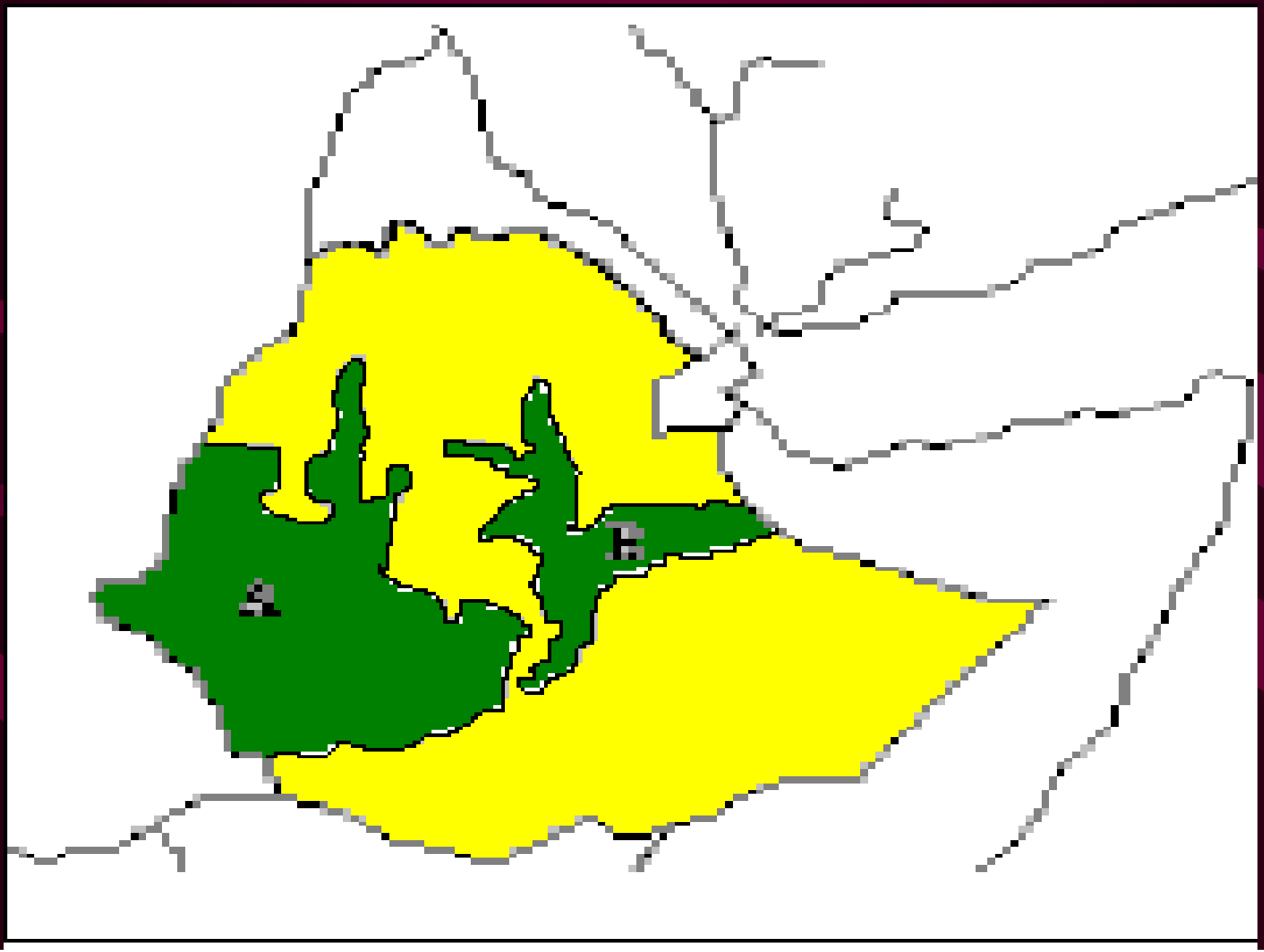
OCTOBER 13, 2003

Kiremt

INTRODUCTION

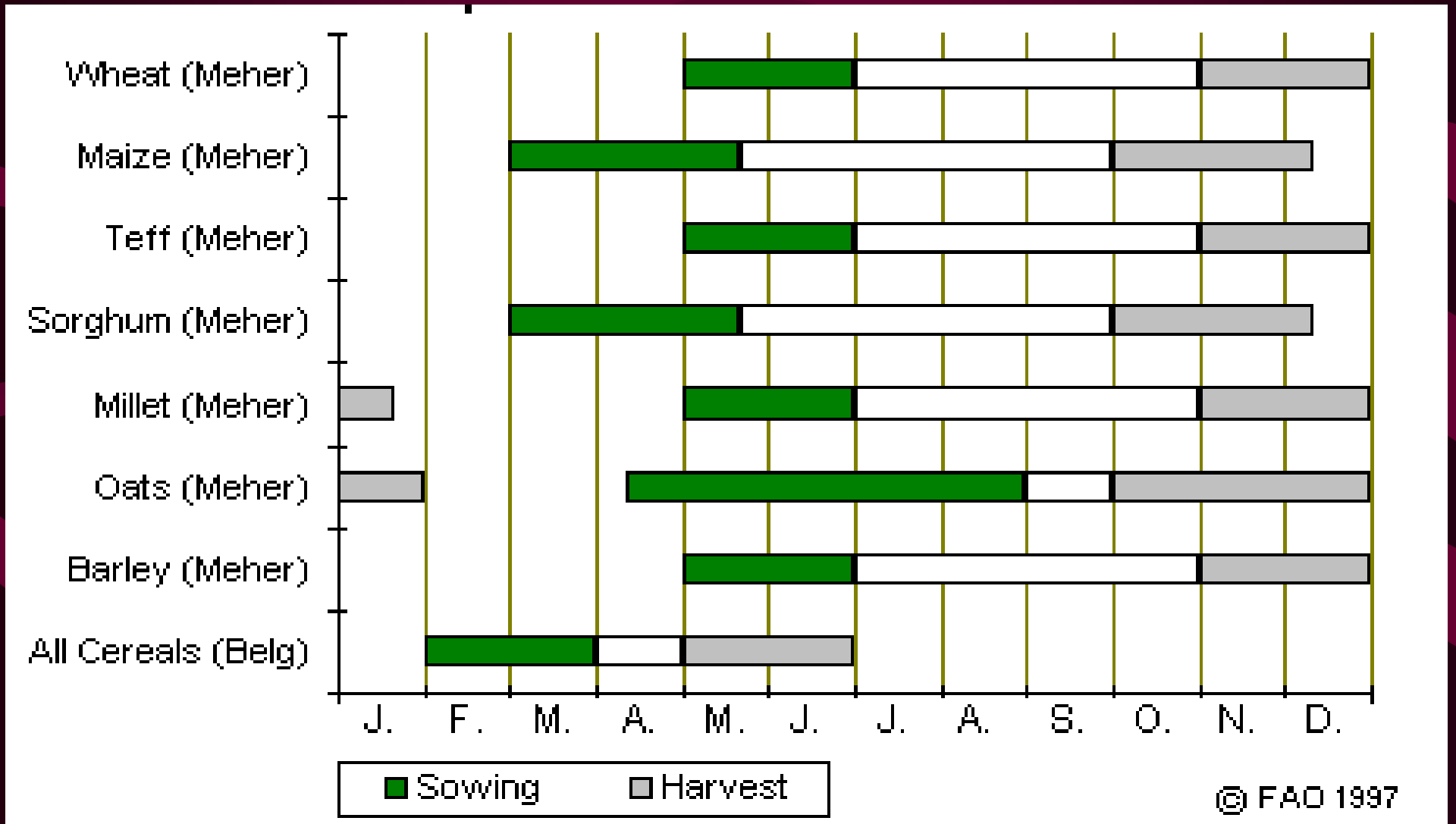
- In accordance with NMSA's classification, the period from June to September is known as Kiremt season. However, in addition to the Kiremt season, the Belg season rainfall particularly the rainfall amount and distribution during the months of April and May has significant impact on the performance of long cycle crops like maize and sorghum in terms of agricultural activities.

“Long Cycle” Crop Growing Region (USGS/FEWS NET Sep 2003)



WHAT ARE MEHER CROPS?

- Maize and sorghum are considered as Meher crops i.e their sowing date starts from March and extends up to end of May in most parts of the country.



- There are also pulse crops like beans, peas, lentil and chickpeas.
- Vegetable crops like onion, potato
- Oil crops like nug, flax

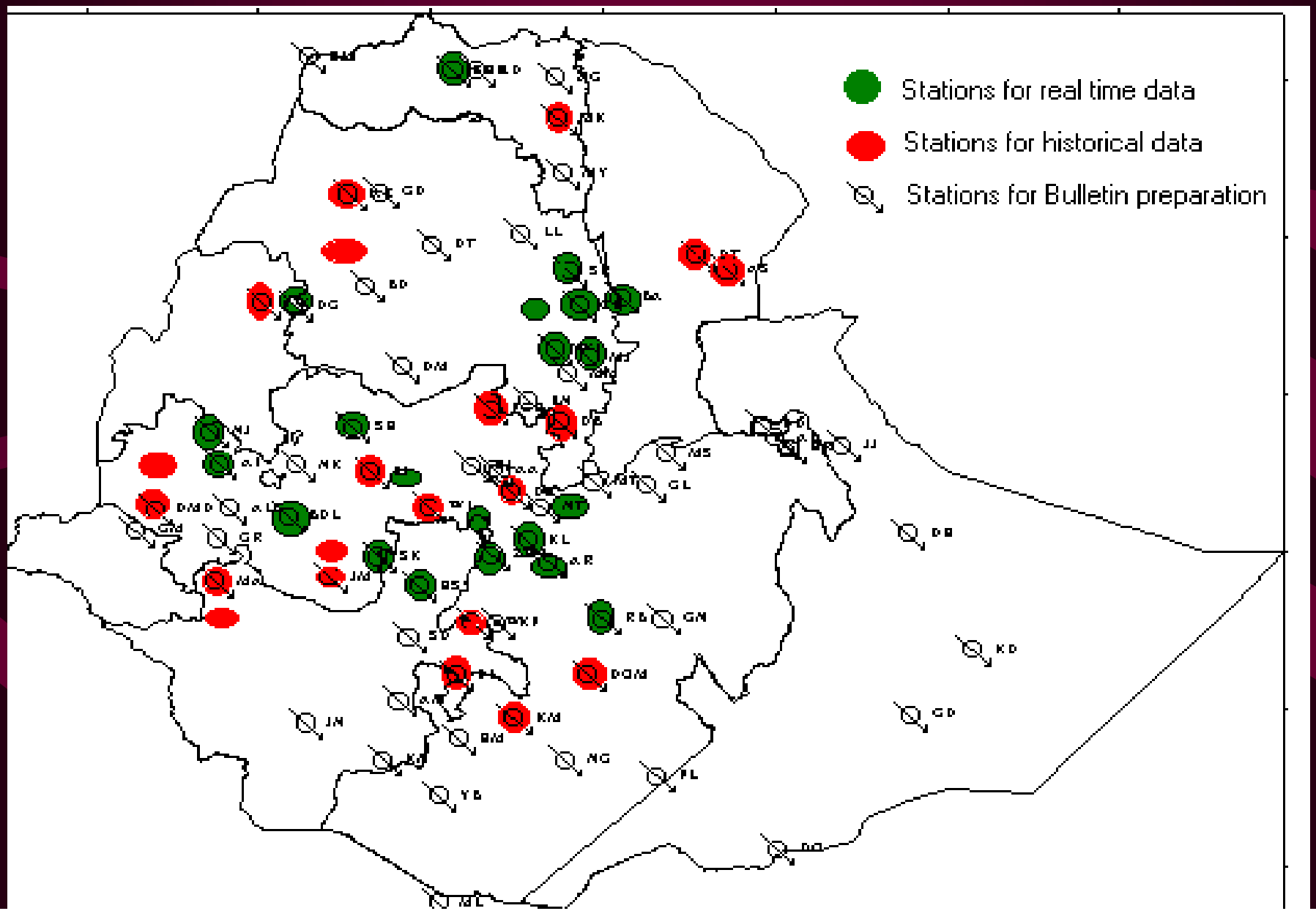
METHODOLOGY

The following are used for the impact assessment

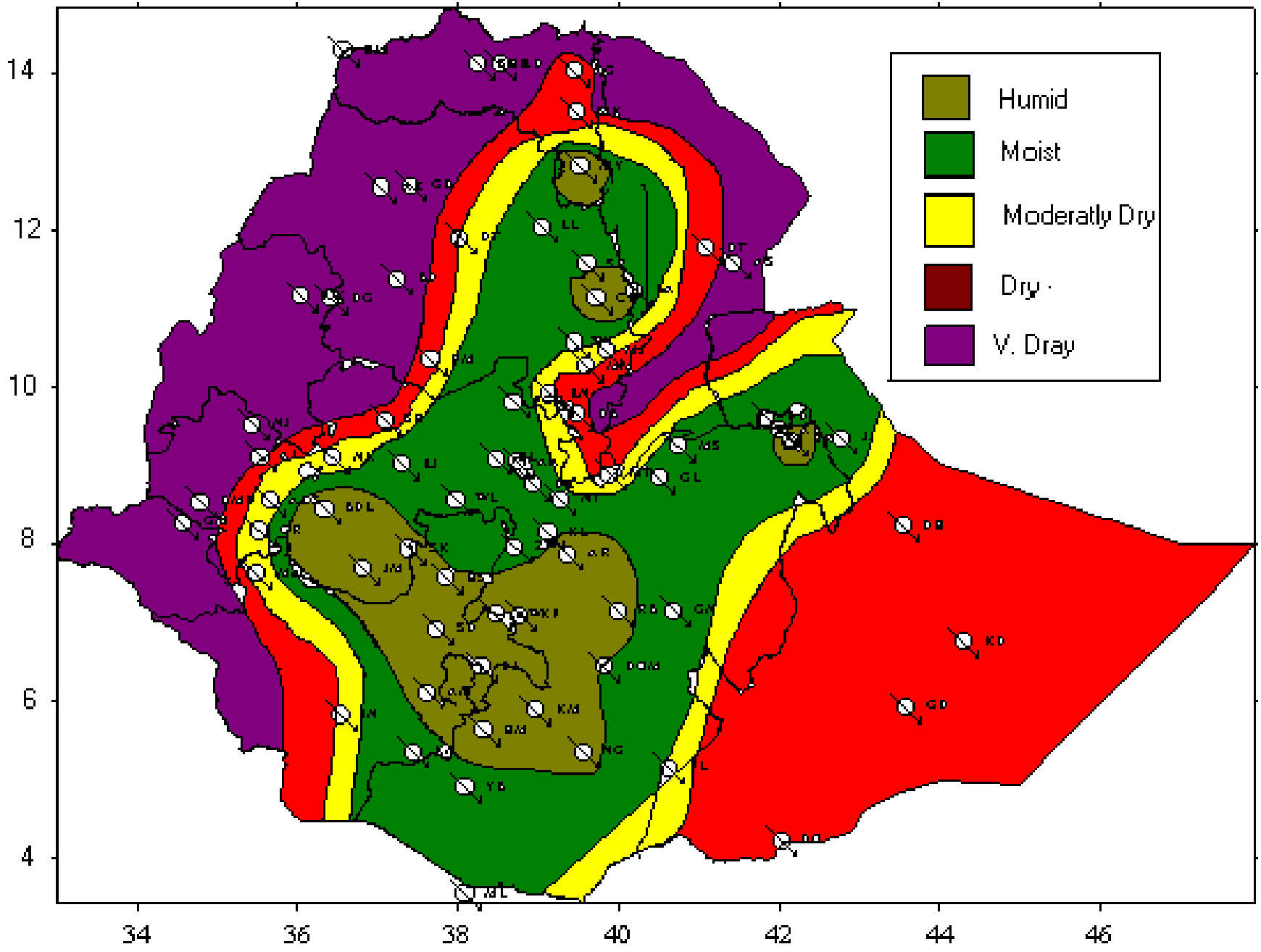
- Meteorological data (dekadal, monthly and seasonal)
- Moisture index (monthly RR/ETo)
- Crop phenological reports from 55 stations (23 of them are at real time basis)
- Internet sources (FEWS/NET, CARE Ethiopia and NDVI from USGS)
- Field reports
- Publications from MOA
- Mass media

DISCUSSION

Distribution of the stations for agro meteorological advisory services (bulletin preparation)



MOISTURE STATUS FOR APRIL 2003



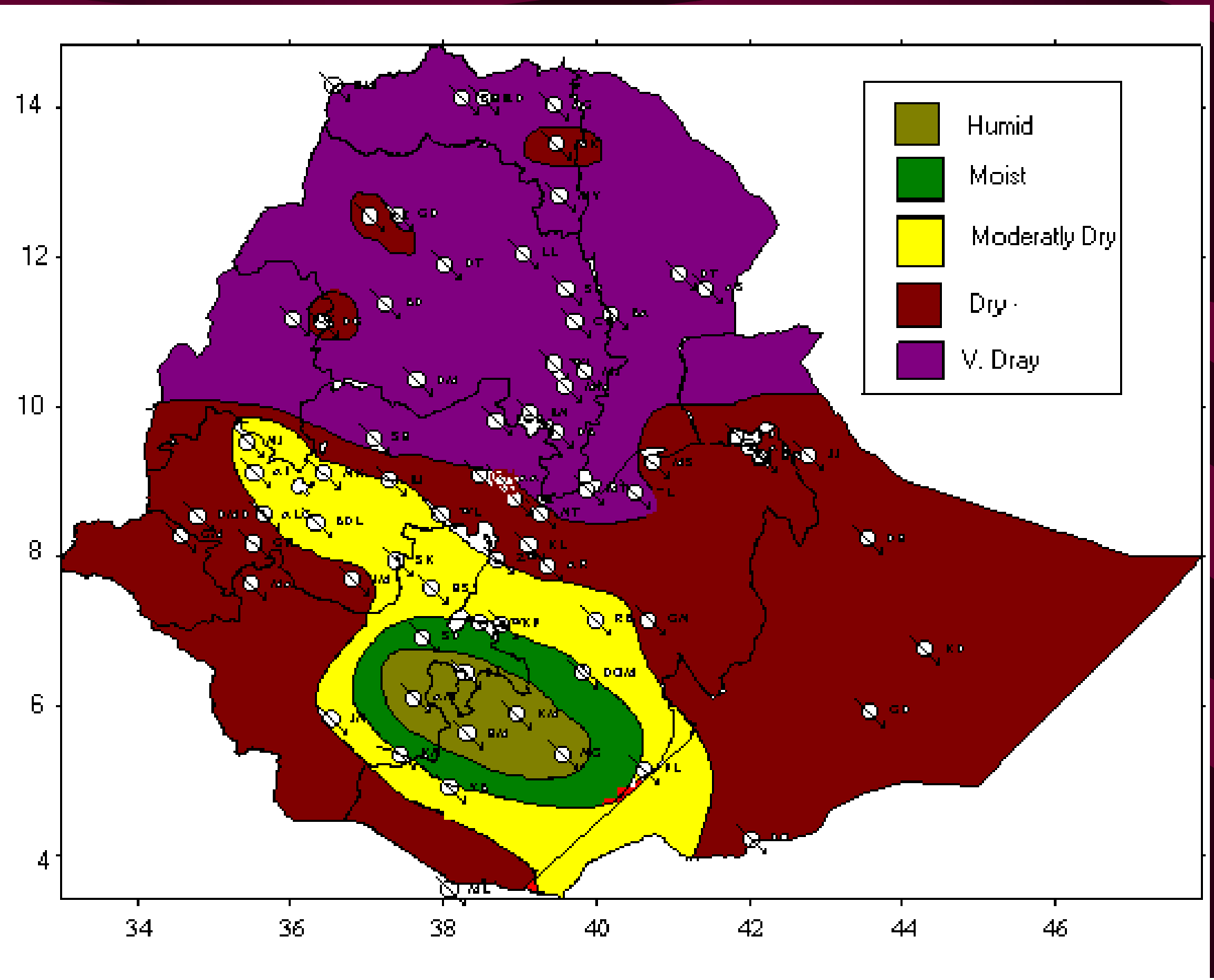
Impact on agriculture

- Land preparation and sowing activities of long cycle crops like maize and sorghum were slow down due to heavy falls over some areas of northeastern highlands and SNNPR. For instance as FEWS 5/20/2003 pointed out excessive rains in Oromiya Zone of Amhara region have caused disruption to the planting of long cycle crops (maize, sorghum and millet).

- The observed heavy falls during the month of April over some areas of southern Oromiya(Borena and Guji Zones) inundated and filled up many traditional water points and wells with silt, rocks, logs and other materials (UNDP Emergencies Unit for Ethiopia June 2003). Thus, this condition could have negative impact on the availability of drinking water, thereby decreasing the productivity of the livestock in agro-pastoral and pastoral areas .

- On the other hand, the deficient falls observed over some areas of west Amhara and Oromiya, Benishangul – Gumuz and Gambela affected sowing activities of the aforementioned crops (maize and sorghum).

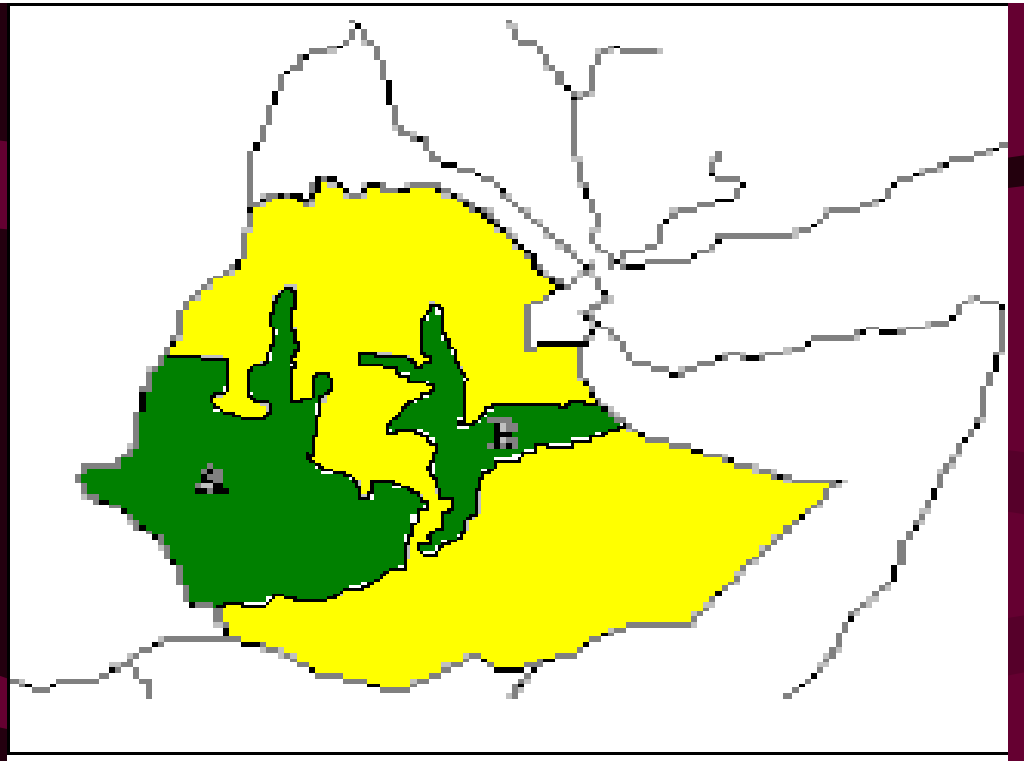
MOISTURE STATUS FOR MAY 2003

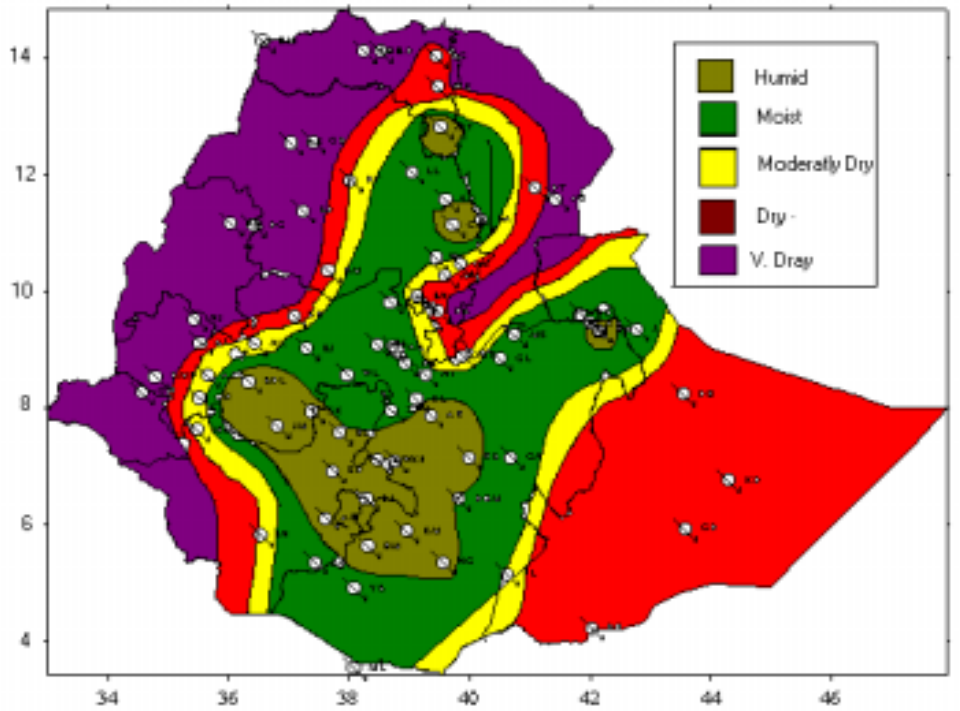


Impact on agriculture

- Affected early Meher season's agricultural activities like land preparation and sowing activities of maize and sorghum.

- Heavy rains caused flooding in localized areas of SNNPR, Somali, and Oromiya regions and resulted in crop damage in some areas of SNNPR.

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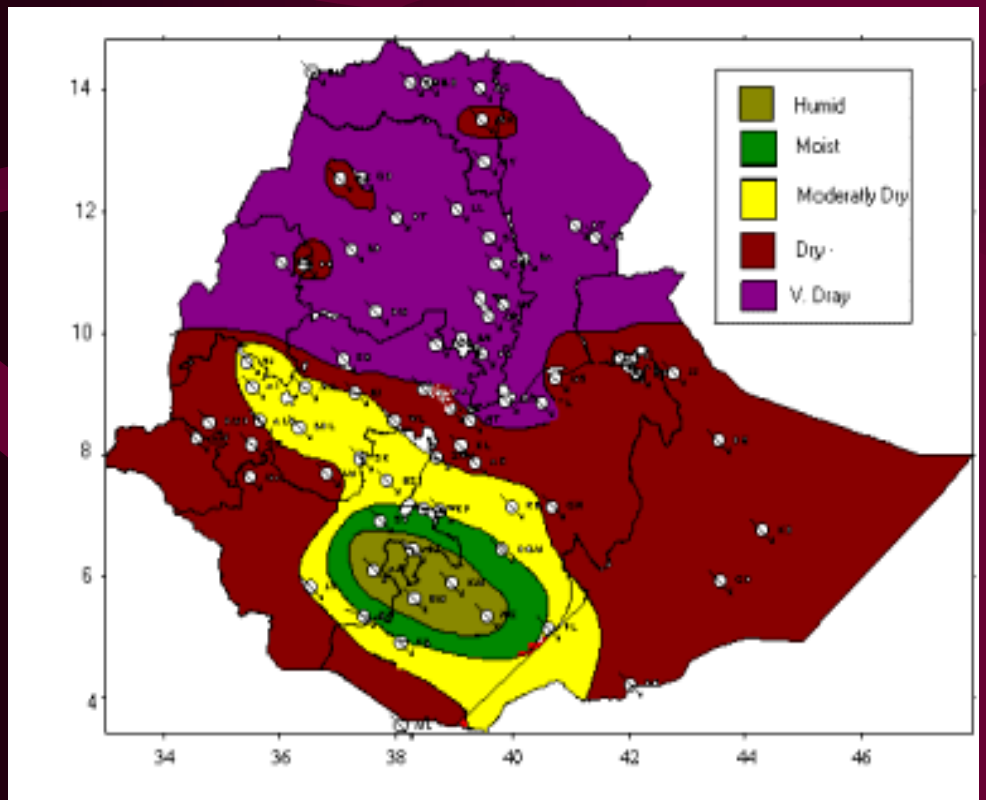
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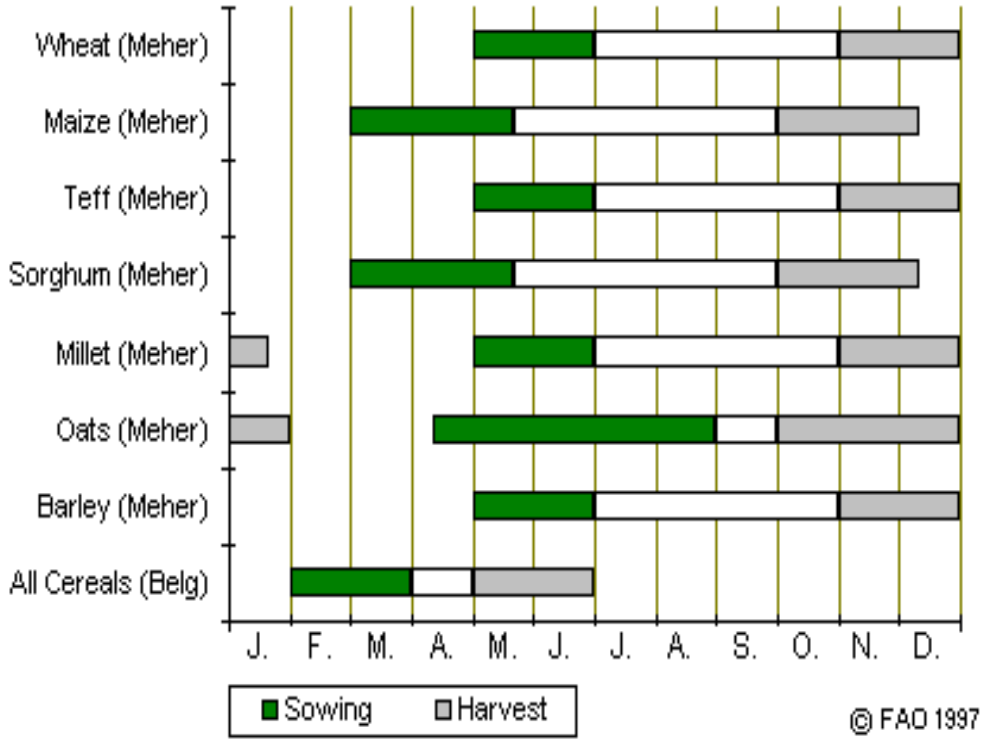
Wheat (Meher)
Maize (Meher)
Teff (Meher)
Sorghum (Meher)
Millet (Meher)
Oats (Meher)
Barley (Meher)
All Cereals (Belg)
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F.
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S.
O.
N.
D.
Sowing
Harvest
© FAO 1997

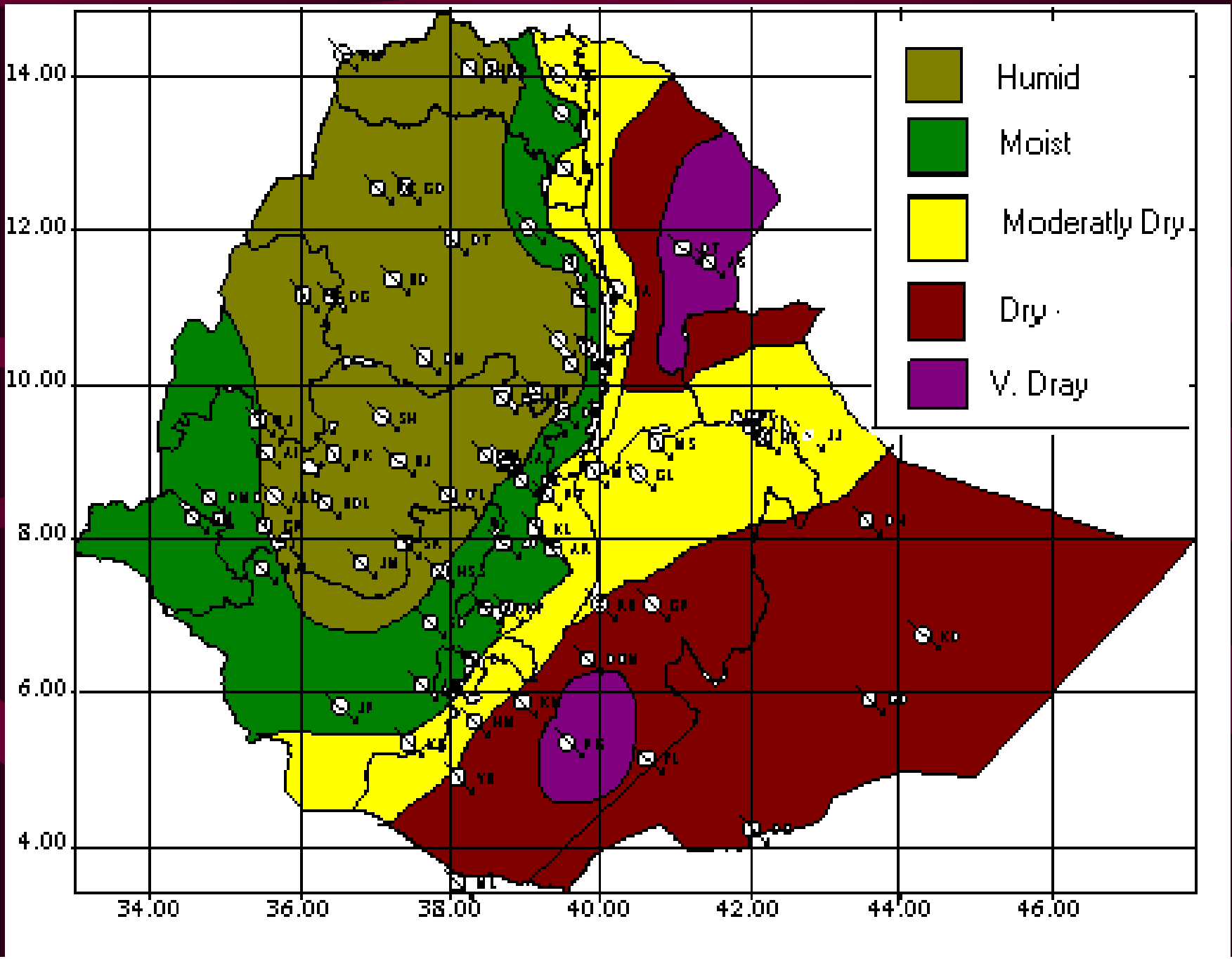
The adverse effect of late planting

- It forced farmers to shift farm to other crops like oil crops and pulses which are not as productive as maize and sorghum in terms of productivity per unit area of land.

- It also forced overlapping of agricultural activities which induces shortage of time for giving the necessary care and management to crops, there by leading poor harvest.

- Favored incidence of pests.

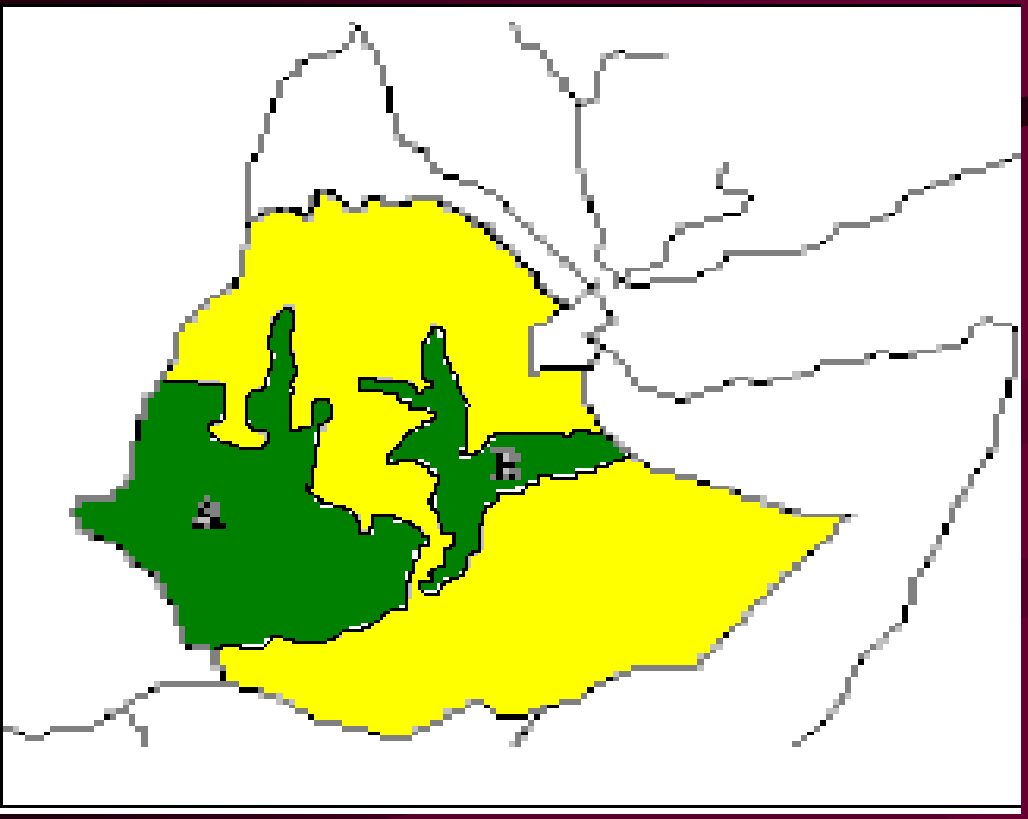
MOISTURE STATUS FOR JUNE 2003

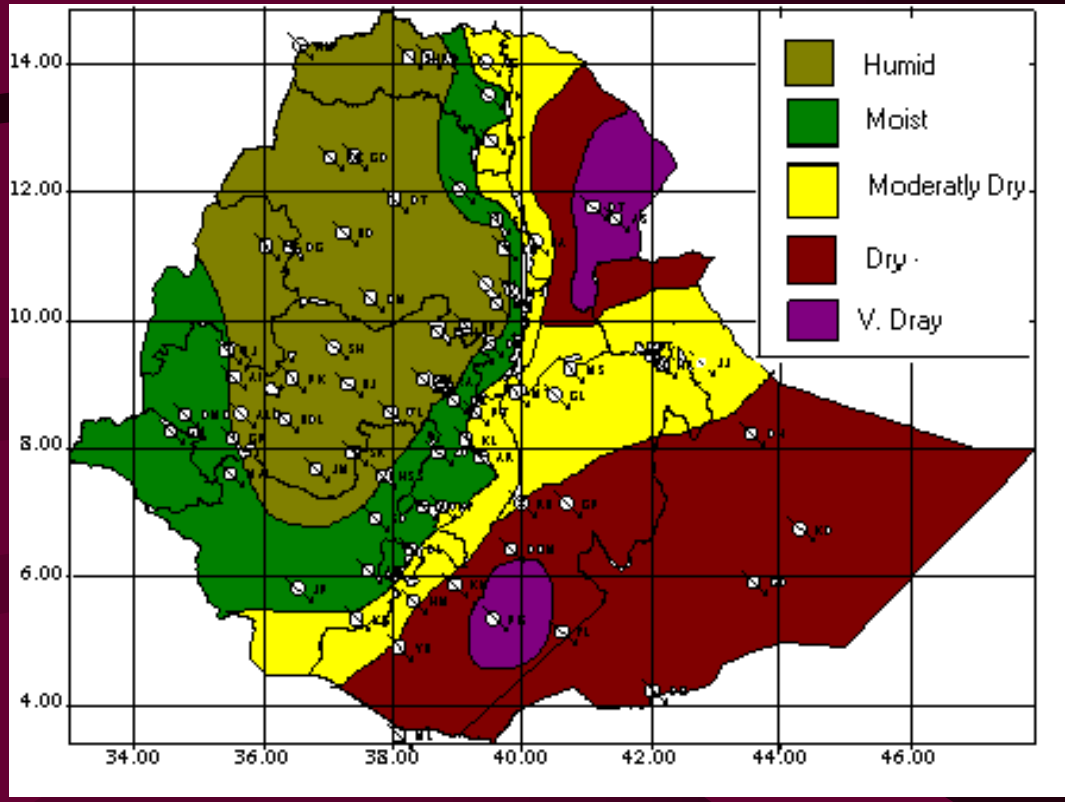


Impact on agriculture

- The overall rainfall situation over western half of Meher producing areas was in a good shape. As the result, most parts of the country were under moist to humid moisture status during the month..

- Crop damage has been observed due to heavy falls ranging from 30 – 72 mm over some areas of northeastern, northwestern, western and southern parts of the country.

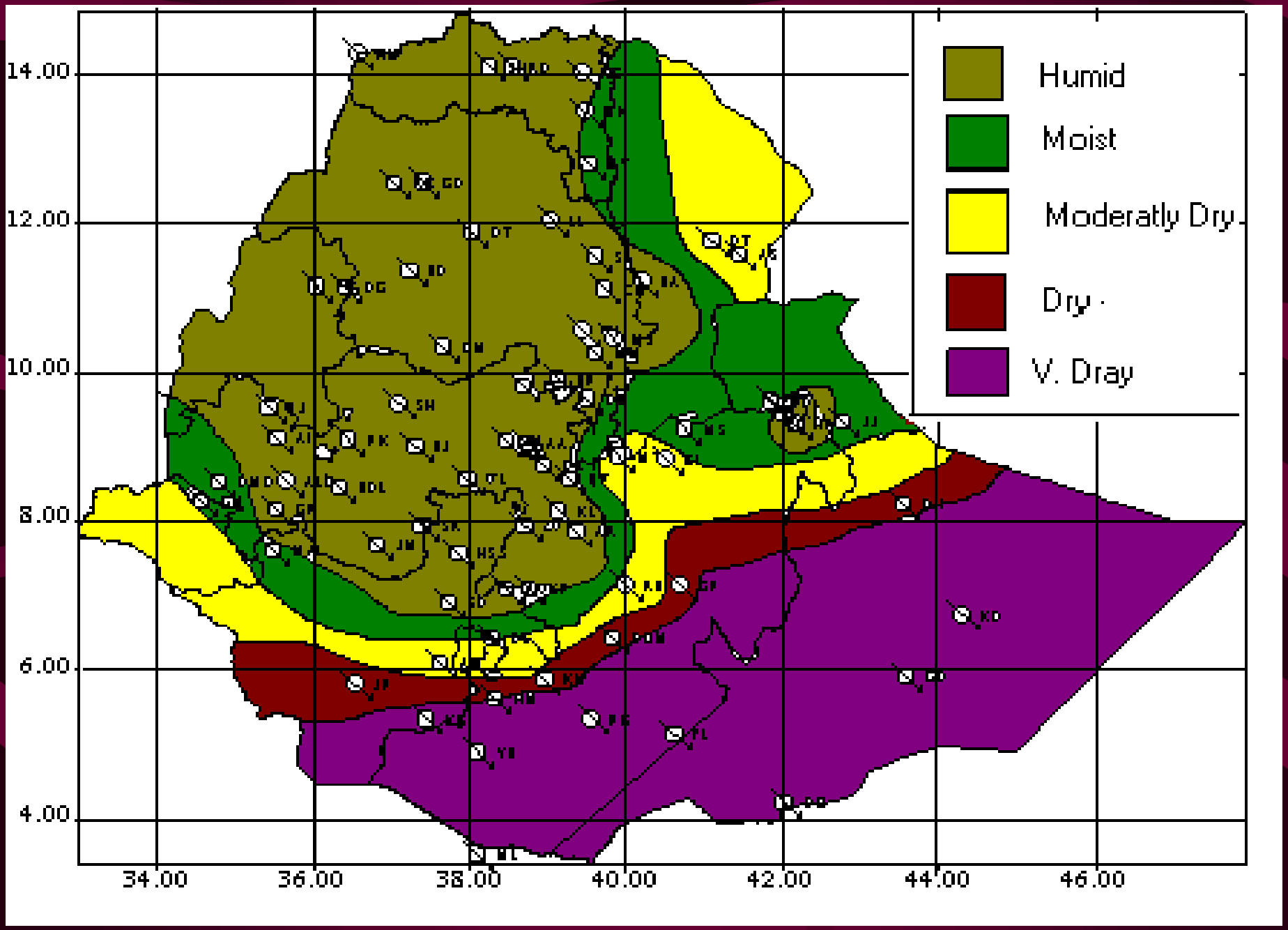




- Deficient moisture condition has been observed over eastern Oromiya and northern Somali highlands.

- Land preparation and sowing of Meher crops were under way in most areas.

MOISTURE STATUS FOR JULY 2003

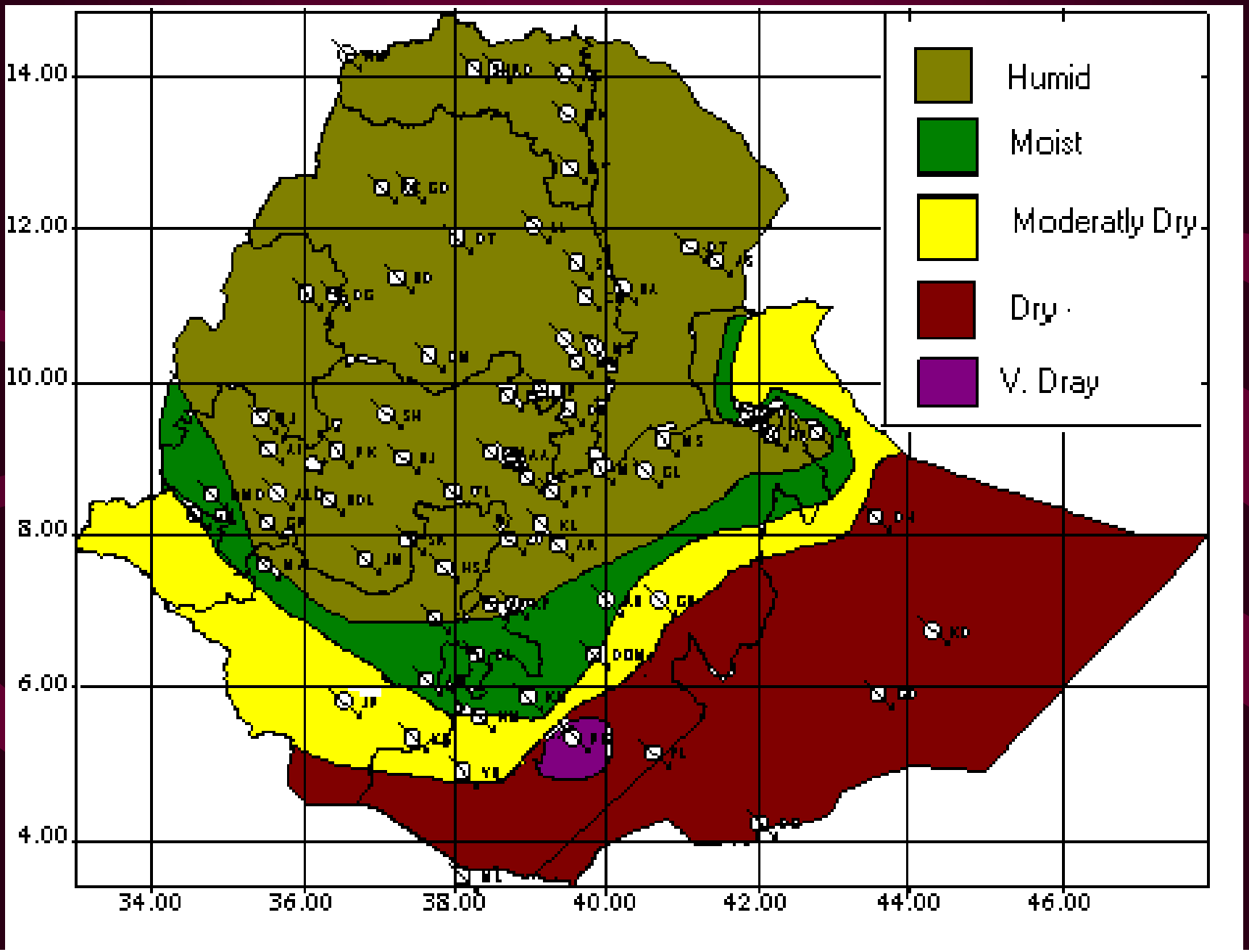


- The observed normal to above normal rainfall distribution in most Meher growing areas had great contribution for the on-going season's agricultural activities. However, some areas of northern, central, northeastern and western Ethiopia exhibited heavy falls ranging from 30 – 98 mm in a rainy day.

- It also assisted the availability of pasture and drinking water over southern Afar and northern Somali

- Good rainfall replenished pasture and water sources in the pastoral areas of Borena and northern tip of Somali and southern tip of Afar. (FEWS NET/Ethiopia 14 August, 2003)

MOSTURE STATUS FOR AUGUST 2003



IMPACT ON AGRICULTURE

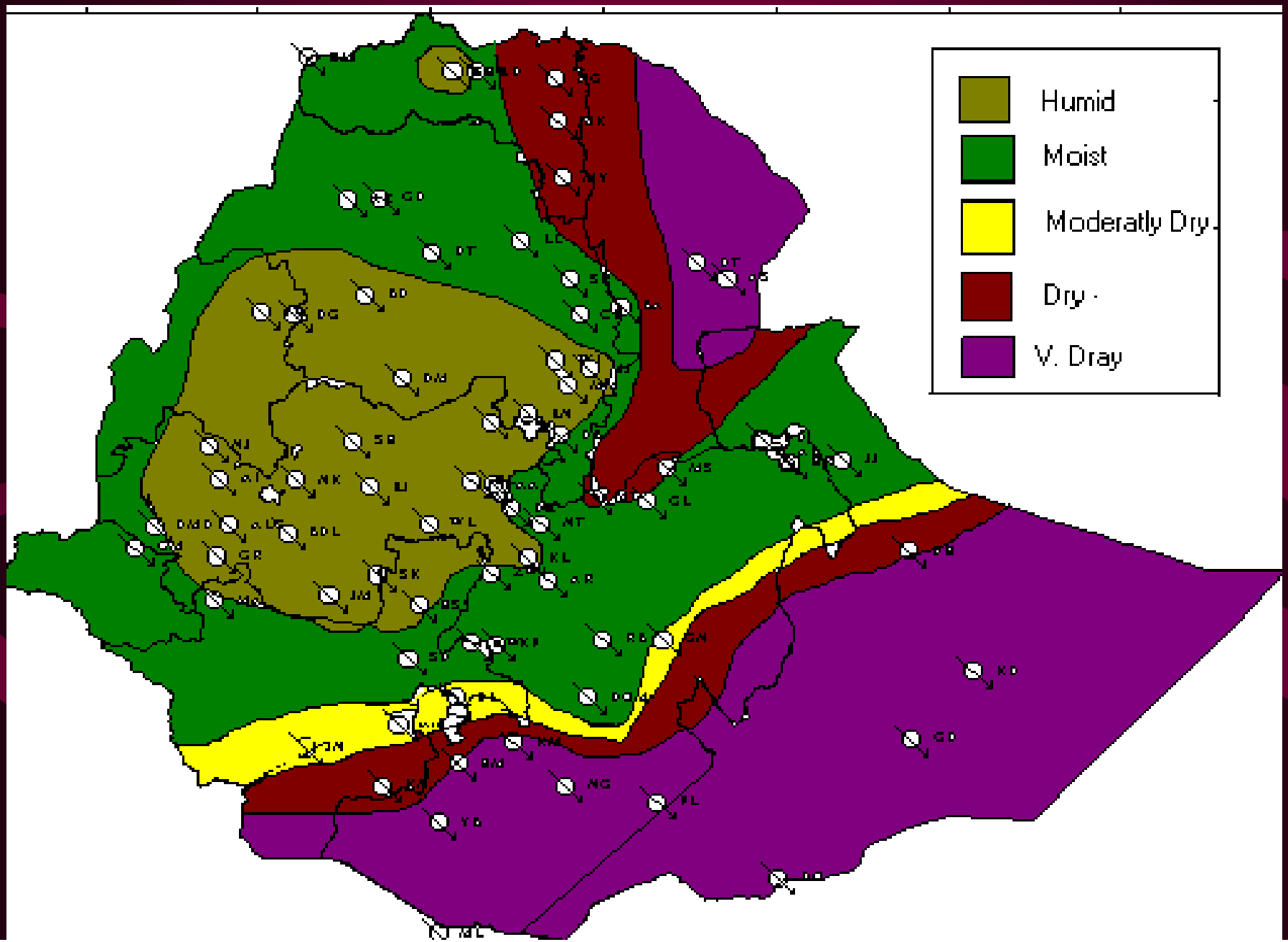
- Generally, the observed normal to above normal rainfall over most parts of Meher growing areas favoured season's agricultural activities. For instance normal to above normal rainfall during August were beneficial to the lowland and midland areas for long cycle crops, facilitating their flowering and grain filling stages (FEWS NET 9/12/2003 Food Security Monthly Report) which are the critical stages in terms of crop production for most cereal crops.

- Some areas of western and eastern Amhara, Gambela, western, central and eastern Oromiya exhibited heavy falls ranging from 30 – 80 mm and this condition resulted in crop damage in some low lying areas and on crop fields near the river banks.

- It causes mechanical damage like hail damage in some areas where the heavy rains accompanied with hailstorms.

- Some areas reported weed infestation due to continuous wet condition.

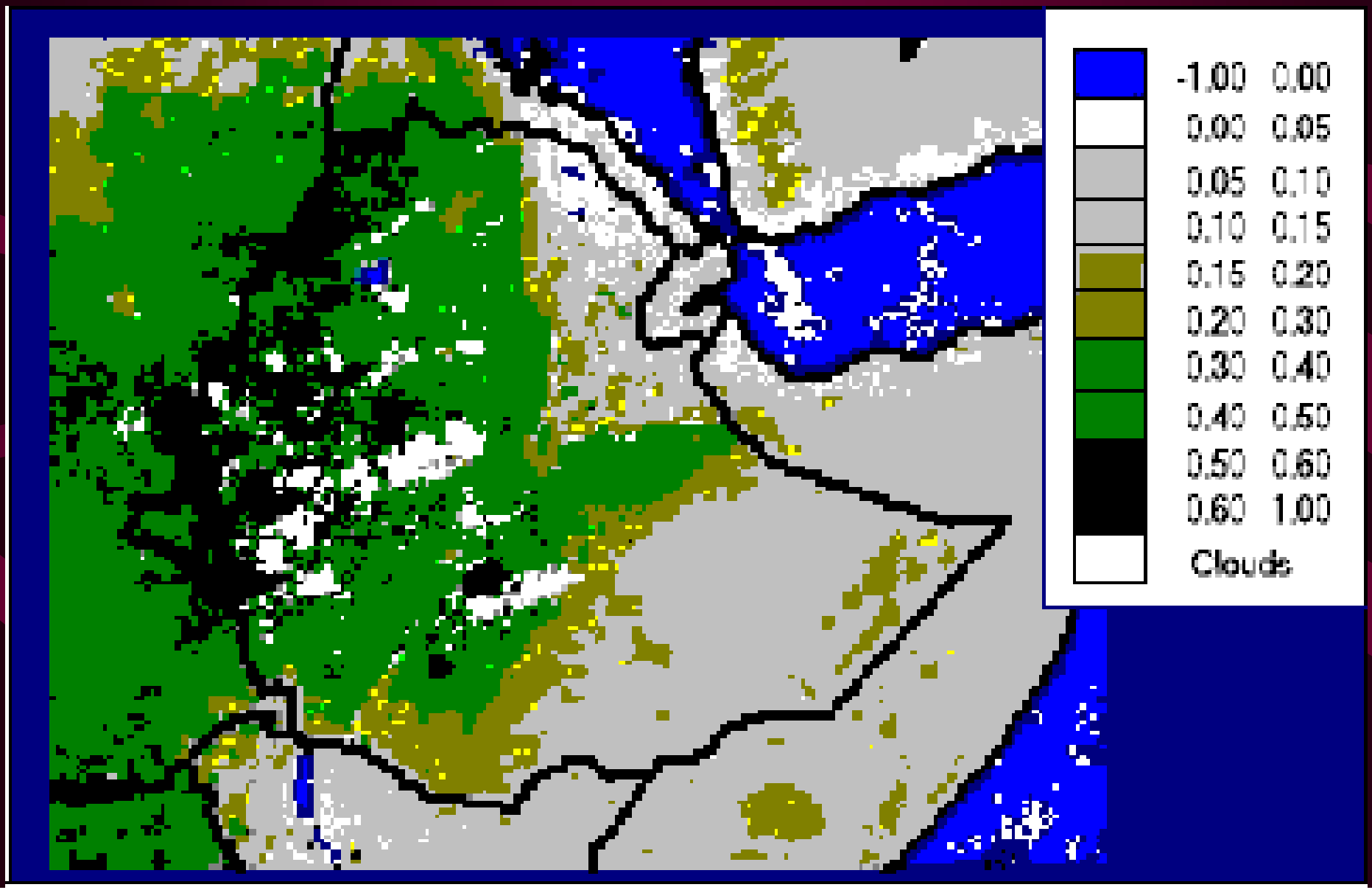
MOSTURE STATUS FOR SEPTEMBER 2003



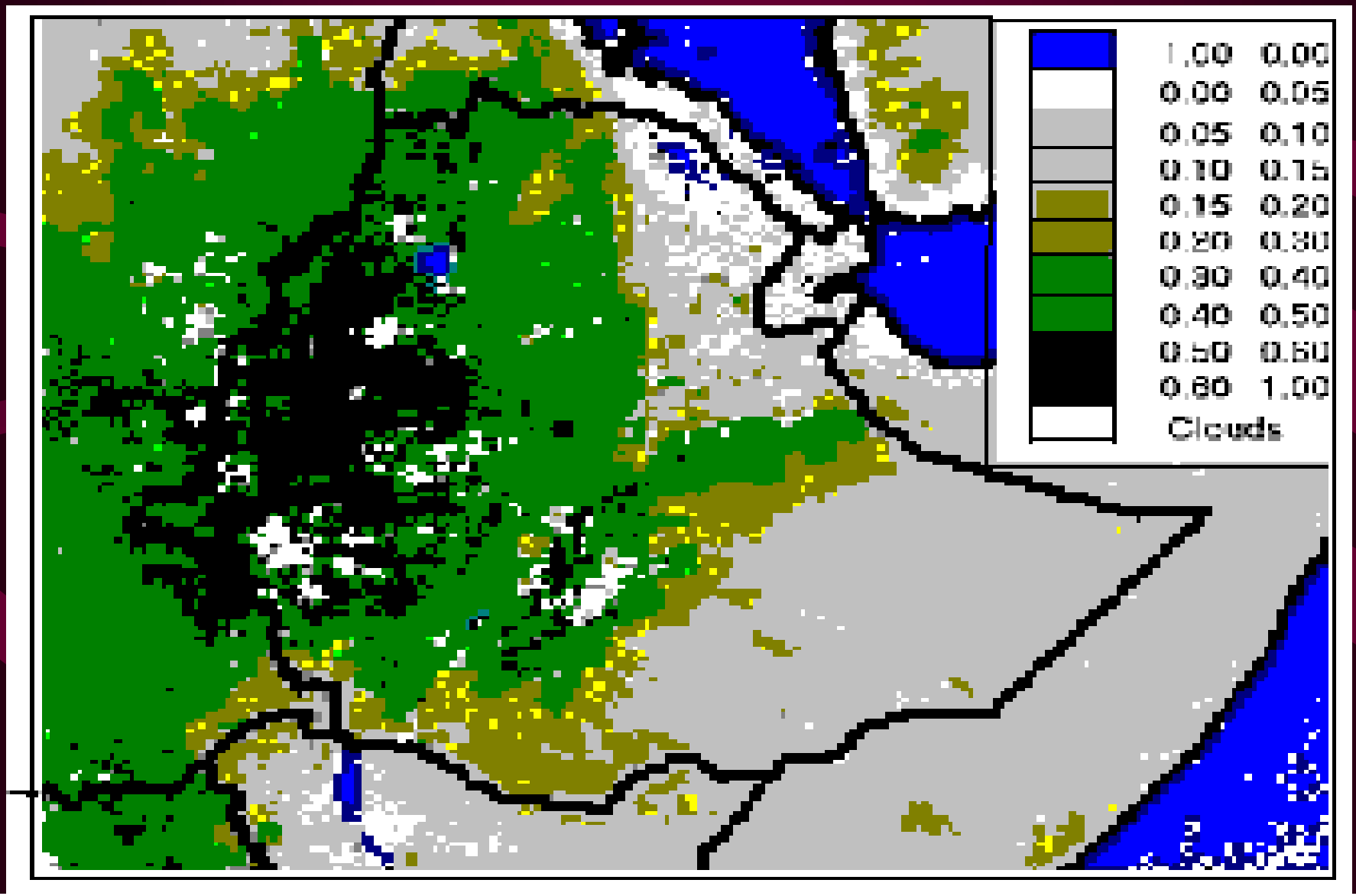
Impact on Agriculture

Heavy seasonal rains have resulted in flooding across the high lands of Ethiopia. Some areas of western Oromiya and Amhara experienced heavy falls frequently. For instance, Aira received heavy falls ranges from 36 – 98 mm for seven days, Pawe (32 – 37 mm) for four days, Assossa (30 – 57 mm) for four days and Alge (36 – 36.8 mm) for three days during the month. In some areas like Shire the intensity was very high, 37 mm of rainfall with in 30 mints. As a result, some station like Aira, Gambela and Shire reported crop damage due to heavy falls during the month.

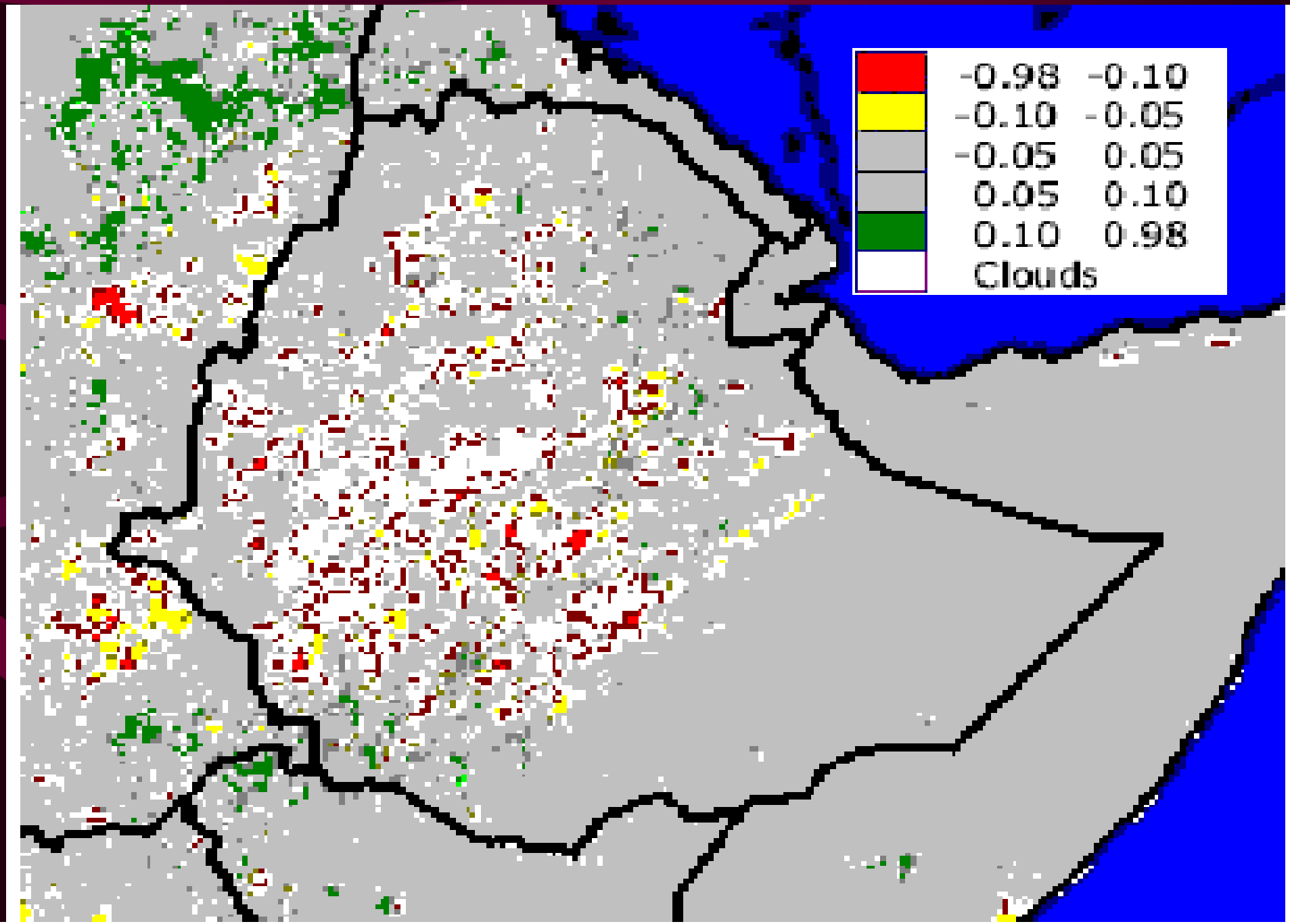
NDVI for September 11 – 20, 2003 (USGS)



NDVI for September 21 – 30, 2003 (USGS)



NDVI Vs Long Term Ave for September 21 – 30, 2003 (USGS)



KIREMT 2003

- This year, deficient fall has been observed during the month of April and May over some areas of western Amhara and Oromiya, Benishangul – Gumuz and Gambela, in areas where the contribution of Meher agricultural production ranges from 70 – 90 %. As the result planting and sowing of the above mentioned crops was delayed by few weeks in some areas. However, after a slow start to the Meher rains, the abundant falls, which was observed as of June 2003, favored Meher crops in most Meher producing areas of the country.

- The observed beneficial rainfall over the central and northeastern lowlands has helped to reduce dryness.

- There was persistence of heavy falls over pocket areas of eastern and western Amhara, west, central and eastern Oromya, northern SNNP and pocket areas of Afar. As the result some areas of the aforementioned areas reported crop damage and livestock loss. The excessive rain also affected planting and sowing activities of long cycle crops in some areas.

For instance

In the eastern areas of south Gonder and Bahir Dar, significant heavy falls caused floods, which allowed for recession agricultural activities along the shores of Lake Tana (FEWS Ethiopia 14 August, 2003).

- The heavy falls also inflicted damage to crops, and the flooding of the Awash River in Afar Region and affected huge state-owned cotton, maize and sesame plantations.

- With regard to pest problem, some stations reported weed infestation, occurrence of disease and insect.

- There was out break of *Quelea quelea* birds in some areas of SNNPR (e.g. Konso and Derashe) and *Sorghum Chafer* in some areas of eastern Amhara. Endemic pests were also observed in some areas of Meher growing areas during the season under review. In case of *Sorghum Chafer* the occurrence was not as severe as last year and other deficient years due to continuous rainfall condition.

- On the contrary, deficient falls have been observed over eastern and parts of southern Oromiya, some areas of Gambela, northern Somali and parts of southern half of SNNPR. This condition resulted in poor crop performance in some areas.

- As USAID Famine Early Warning System (4 September 2003) pointed out the seasonal rainfall across southern portion of Ethiopian highlands has been below normal and erratic.

Therefore, this condition could have

- negative impact on crops water requirement

- it could also favour the occurrence of pest and disease. According to the MOA report (cited in FEWS NET 9/12/2003 Food Security Monthly Report) pests have inflicted minor to considerable damage on about 45, 000 hectares of land during the season.

- Generally the overall climatic situation observed during the season under review was in a good shape over most parts of Meher growing areas.

Meher production prospect

- Regarding this year Meher production prospect, as MOA (cited in FEWS NET 9/12/2003 Food Security Monthly Report) pointed out, in spite of the fact that the climatological condition of most Meher crop producing areas was close to normal, production harvest are expected to be only close to normal, based on the 1996-2002 average.

THANK YOU

Possible Impact

- The Meher harvest uaually begins in September in the lowland areas and extends through February to the typical highland areas. Therefore, crops are at different level of phenological stages(early vegetative, flowering and maturity stages). Thus, the effect of rainfall would vary from place to place accordingly as folows:-.

Advantage

- The anticipated normal rainfall over western and southwester parts of Ethiopia would facilitate seed setting and grain filling process in areas where the onset of Kiremt rainfall was late.

- This may also be helpful to the production of pulses with residual moisture
- For other crops which are at early vegetative and reproductive stages at this time a year.

For instance

Pursuant to the recent crop phenological report (21 – 30 September, 2003)

- Sorghum was at flowering stage in most parts of Meher growing areas.

- Pulse crops were at flowering and ripeness stages in some areas of eastern Amhara, central and western Oromiya.

- Teff was at early vegetative stage in western Amhara and Oromiya where as at flowering stage in eastern Amhara, southern and central Oromiya.

- Flax was at elongation stage in central Oromiya.

- Millet was at tasseling stage in western Oromiya.

Disadvantage

- In lowland areas it would have negative impact on harvesting and post harvesting activities if the on set and cessation of Kiremt is normal. In accordance with the latest crop phenological report, crops were at ripeness stage even in some high land and mid land areas. For instance maize was at wax and full ripenes stage in some areas of western Oromiya like Nedjo, Aira, Algea Ziway and Dembi Dolo and eastern Amhara like Majete and Sirinka. Pulses were at ripeness stage in some areas of central Oromiya.

- The expected below normal tendency of rainfall over southern highlands would exacerbate the deficient moisture condition which persisted during the preceding dekades.

- The expected unseasonable rainfall over northeastern and eastern parts of the country would negatively affect harvest and post harvest activities in the areas. Besides it would favor the occurrence of post harvest pests. Thus, proper action should be undertaken ahead of time in order to mitigate the effect.

– The expected possibility of below normal rainfall over south and southeastern lowlands would have negative impact to pasture and water availability, thereby decreasing the productivity of livestock in agro-pastoral and pastoral areas .Thus, it would be advisable to use efficiently the available rain water.

Temperature

Temperature is a limiting factor during the Bega season particularly over central, northern and southern highlands of Ethiopia.

- The reduced frequency of occurrence of extreme minimum temperature anticipated over northeastern and eastern highlands of Ethiopia is a good indication for crops in terms of crop damage due to the occurrence of frost.

THANK YOU