

SEASONAL CROP OUTLOOK

Sorghum – February 2015

SUMMARY

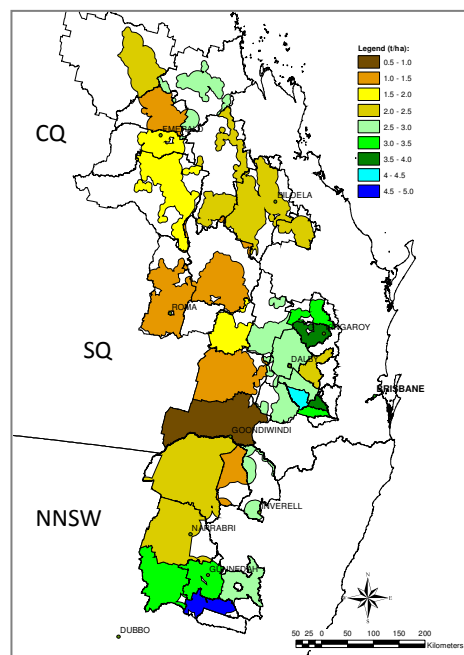
The average to above average rainfall recorded during January improved the outlook across all parts of the summer cropping region. Overall, chances have improved to close to, or slightly above, average to exceed the long-term median sorghum yield across most of the north eastern Australian (NEAUS) summer cropping region for 2014/15. There remains, however, variation in the outlook among local regions. Most areas in central QLD (central highlands of CQ) are showing above average crop yield expectations, while most areas in southern QLD (SQ) and northern NSW (NNSW) are showing yield outcomes close to long-term expectation. With the sowing window now closed, except for some parts of CQ, further rainfall will be needed during the next couple of months to ensure the current average crop outlook is realised across all areas of the NE AUS summer cropping region.

GENERAL CONDITIONS

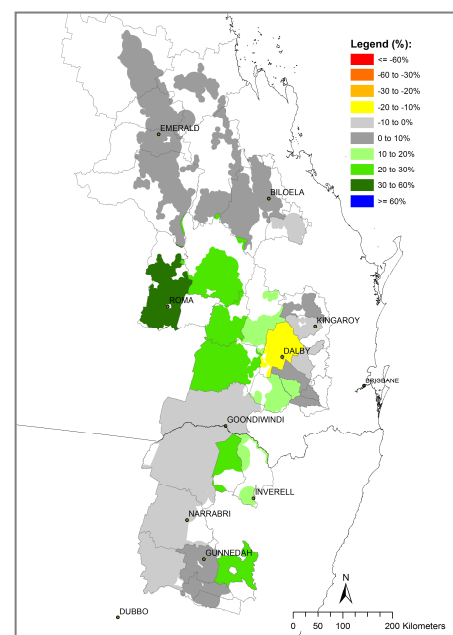
Apart from some parts of CQ and northern NSW, where above average rainfall was received, almost the entire cropping region recorded average rainfall during January. The estimated stored soil moisture levels increased from medium to high across most of the summer cropping region, except for some parts of inland NNSW. Long fallow soils have higher soil water recharge levels and are not discussed in this report. The start to the planting season was sporadic for most parts of NNSW and southern QLD with late sowings occurring in some parts of that region. Sowing can still occur until middle of February in parts of CQ. However, later plantings will usually result in a reduction in final crop yields. Area planted to summer crops varies across most of southern QLD and NNSW because of the very poor start to the season. Mean temperatures were close to average for January across most parts of the NE AUS cropping region. The recent pattern of the SOI (“consistently negative”) indicates reduced chances of receiving above average rainfall in most of NEAUS cropping region for the next 3-months (www.longpaddock.qld.gov.au).

OUTLOOK

This regional sorghum crop outlook is based on the assumption of cropping after winter fallow. The benchmark for this outlook is the simulated long-term median shire sorghum yield within the broad NE AUS cropping region (Map 1). The median yield is based on predicted performance over the past 113-years using an agro-climatic model for sorghum with long-term rainfall records (see descriptive note for more details). The percentage departure of the forecast median for this season from the long-term median shire sorghum yield is given in Map 2. Map 3 shows the current forecast shire median yield ranked relative to all years. Any areas coloured in light grey, yellow and red have a poor to very poor chance of having crops above the long-term median yield, whereas areas coloured in dark grey, green and blue have good to very good chances of producing higher yielding crops. Map 2 & 3 are derived by considering conditions up to date (end of January) and projecting forward based on rainfall conditions in years with SOI phase similar to this year - “consistently negative” in the December to January period. The calculation of benchmark yields and outlook chances do not take into account effects of poor crop nutrition or damage due to pests, diseases, frosts or extreme events (e.g. heat waves).



Map 1: Long-term median simulated shire sorghum yield (113 years)



Map 2: Percentage departure of the current forecast median shire yield from the long-term shire median yield.

Map 2 shows that for this season, most areas in CQ have forecast yield expectations slightly above (0 to 10%) the long-term median yield, while most areas in Far South Western QLD have forecast yields above (> 10%) the long-term expectation for that region. Yield outcomes are expected to be close to or slightly below (-10% to 0) the long-term average in most parts of SEQ and NNSW. Furthermore, for most of CQ and parts of Far South Western QLD, relative yield outcomes are ranked in the top 25%, while some areas in SEQ and NNSW are having yield outcomes close to the 50th percentile of all yield expectations over the last 113 years.

It should be noted that at this stage of the season, the range of likely yield outcomes for the 2014/2015 season has narrowed considerably as much of the actual growing season has been included in the forecast.

POOR CROP CHANCE

At present, chances for this season’s sorghum crop to fall below the worst 10% (crop yield) of all years remains low for the entire NEAUS cropping region (i.e. below the worst 10% of all years, data not shown).

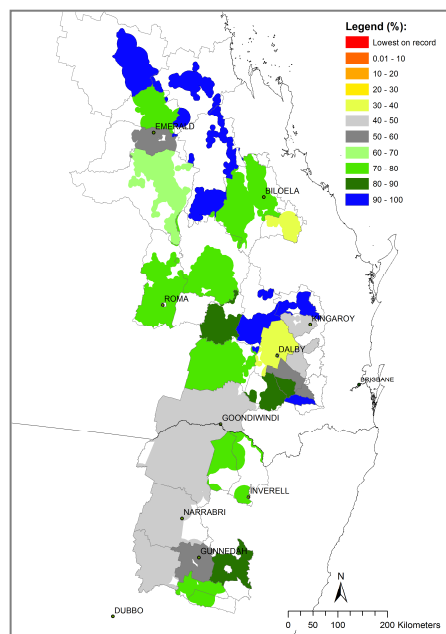
It should be noted that these values are calculated as broad indicators for shire scale. They do not apply to farm level.

STATE OUTLOOK

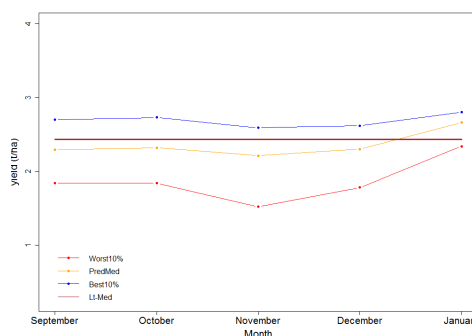
The current regional outlook shows the forecast median yield for the entire NE AUS sorghum-cropping region at the end of January has sharply increased to 2.66 t/ha (77th percentile), which is above the long-term median of 2.43 t/ha (Graph A). There is however, a 10% chance that the state yield could be lower than 2.34 t/ha, or higher than 2.80 t/ha. At local regional level, Central Qld (CQ) and Southern Qld (SQ), Queensland (QLD) and northern NSW (NNSW) (see Map 1), the forecast yield (t/ha) ranges are as follows:

Region	Median (50%)	Percentile (%)	Lt median
CQ	2.23	71	2.08
SQ	2.70	80	2.50
QLD	2.48	80	2.24
NNSW	3.28	66	3.10

The average to above average rainfall during January has improved the predicted yield outcomes across all regions. All regions including NE AUS have forecast median yields slightly to well above the long-term regional sorghum yield expectation for that region. The current SOI phase (“consistently negative” in Dec-Jan) indicates that chances to receive above average rainfall are reduced across most parts of the summer cropping region. Widespread average rainfall is needed over the next couple of months to ensure good crop growth conditions especially around flowering for late planted crops.



Map 3: Forecast median shire yield ranked relative to all years (%)



Graph A: NE AUS sorghum yield forecast trajectories (10th, 50th and 90th percentiles).

DESCRIPTIVE NOTE:

The seasonal sorghum outlook is based on the integration of (i) a simple agro-climatic sorghum stress index model (SSIM) (i.e. Bare fallow routine - Ritchie, 1972; Sorghum stress index model adapted from - Fitzpatrick and Nix, 1969; Nix and Fitzpatrick, 1969), which is sensitive to water deficit or excess during the growing season, (ii) actual climate data up to the forecasting date and (iii) projected climate data after that date. These projected data are drawn from historical analogue years based on similarity to the prevailing phase of the Southern Oscillation Index (SOI) (Stone et al., 1996). The sorghum model is run from 1 April the year before harvest in order to account for the influence of the winter fallow on starting soil moisture conditions. The model shire input parameters (i.e. plant available water content, planting rain & stress index period) have been selected based on the best fit when calibrated against actual shire sorghum yields from the Australian Bureau of Statistics (ABS) for the period 1983 - 1997. Cross-validated correlations ranged from 0.6 to 0.9 within the main sorghum producing shires of NE Australia (31 in total). (Potgieter et al., 2005)