

SEASONAL CROP OUTLOOK

Sorghum – March 2015 (Final)

SUMMARY

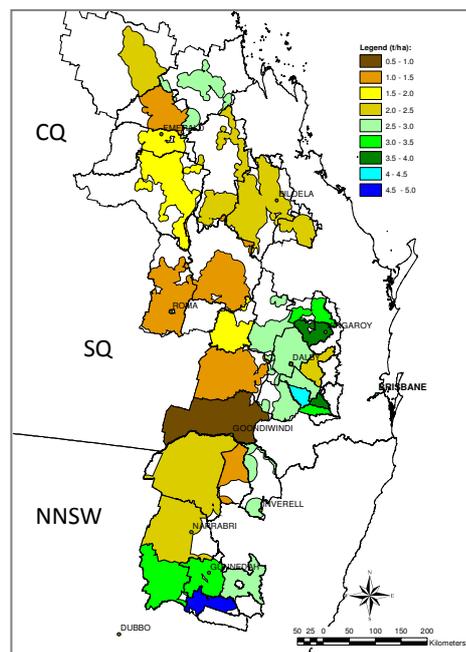
Final predicted crop outcomes have converged to close to the long-term average sorghum yield across most parts of the summer cropping region for 2014/15. With the summer crop season nearing a close, current climate, soil moisture conditions and seasonal rainfall outlook indicate an average sorghum yielding crop of 2.48 t/ha (56th percentile), 2.31 t/ha and 3.05 t/ha at National, QLD and NNSW levels, respectively. There remains, however, some variation in the outlook among local regions. Central Queensland (CQ) shows above average crop yield expectations (71st percentile), while southern QLD (SQ) and northern NSW (NNSW) are showing yield outcomes close (56th and 47th percentiles) to the long-term median yield expectation, respectively.

GENERAL CONDITIONS

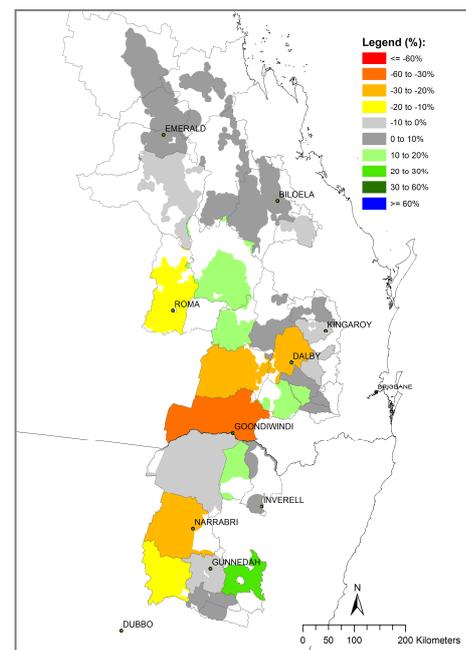
Most areas of the cropping region received below average rainfall during February. This reduced the yield prospects for some parts of south-west QLD and some western shires in NNSW from the previous month. However, rainfall during February and the previous six months was average to above average in most parts of CQ (where some flooding occurred in some eastern parts), SEQ and eastern NNSW. Furthermore, the start to the planting season was sporadic for most parts of NNSW and southern QLD with late sowings occurring in some parts of the summer cropping region. Mean temperatures remained close to average for February across most parts of the NE AUS cropping region. The recent pattern of the SOI (“rapidly rising”) indicates slightly 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 - “rapidly rising” 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, SEQ and some eastern shires in NNSW have forecast yield deviations slightly above (0 to 20%) the long-term median yield, while some areas in Far and South West QLD as well as some NNSW shires are having forecast yield deviations below to well below (-10% to -30%) the long-term yield expectation for that region. Relative to all years yield outcomes are expected to be above the long-term average in most parts of northern CQ, southern parts of SEQ and eastern parts of NNSW (>70th percentile). Conversely, southern, Far South West and inland NNSW regions are showing relative yield outcomes ranked in the bottom 30% of all years.

It should be noted that at this stage of the season, the range of likely yield outcomes for the 2014/2015 has nearly converged 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).

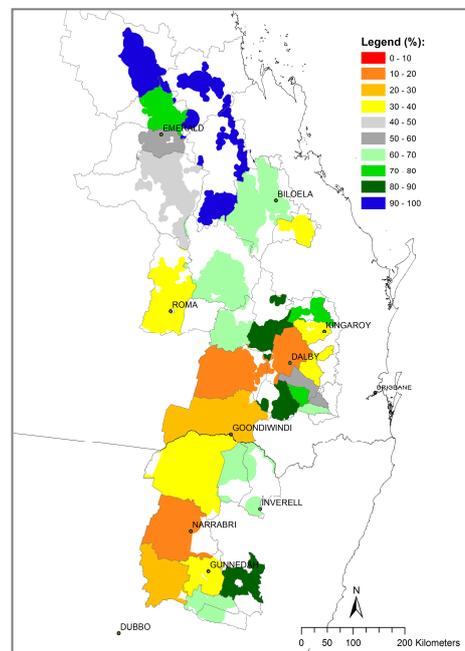
It should be noted that these values are calculated as broad indicators for shire scale. They do not apply to farm level.

STATE OUTLOOK

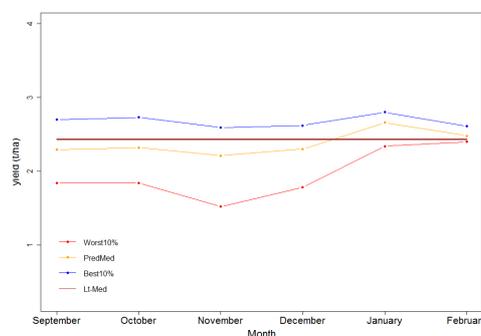
The current regional outlook shows the forecast median yield for the entire NE AUS sorghum-cropping region at the end of February has converged to 2.48 t/ha (56th percentile), which is similar to the long-term median of 2.43 t/ha (Graph A). There is however, a 10% chance that the state yield could be lower than 2.40 t/ha, or higher than 2.61 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 | 2.19 | 71 | 2.08 |
| SQ | 2.44 | 46 | 2.50 |
| QLD | 2.31 | 56 | 2.24 |
| NNSW | 3.05 | 47 | 3.10 |

Final predicted yield outcomes have converged close to the long-term median. Except for CQ, which has an above average yield expectation (71st percentile), the remainder of the NE AUS cropping region are having an average (46th to 56th percentiles) forecast median yield expectation. The current SOI phase of “rapidly rising” in January to February indicates that chances to receive above average rainfall are slightly reduced across most parts of the summer cropping region, which might likely result in a drier finish to the season. Widespread average rainfall is needed over the next couple of months to further 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)