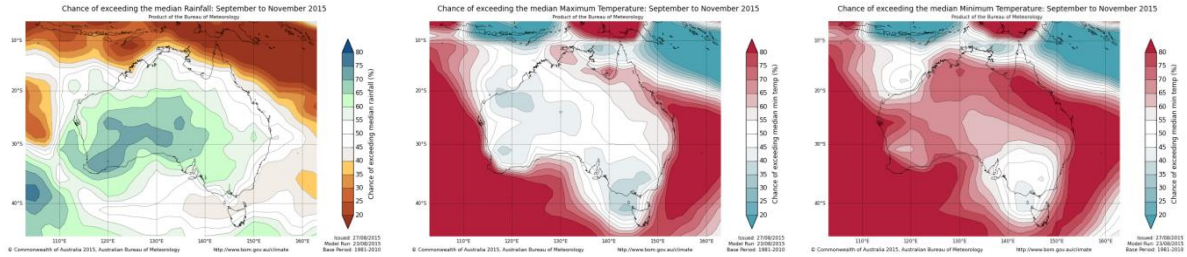
NRM on farms

A monthly news summary about climate and natural resources in agriculture. **September 2015**

CONTENTS

CLIMATE

Seasonal outlook



NSW has an equal chance of above or below average rainfall over the next three months, with warmer nights likely for most of the state, and warmer days along the coast. This outlook reflects the record warm sea surface temperatures in the Indian Ocean, and the strengthening El Niño.

http://www.bom.gov.au/climate/outlooks/#/overview/summary/

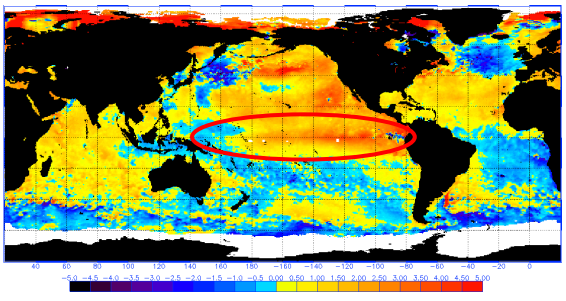
Video: http://www.bom.gov.au/climate/outlooks/#/overview/video

Ocean temperatures

Pacific Ocean temperature anomalies are now at their highest values since 1997-98, and the Indian Ocean as a whole has been at near-record temperatures.

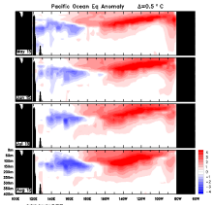
http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/index.html

http://www.bom.gov.au/climate/enso/



NSW GOVERNMENT Department of Primary Industries

Subsurface warmth increases

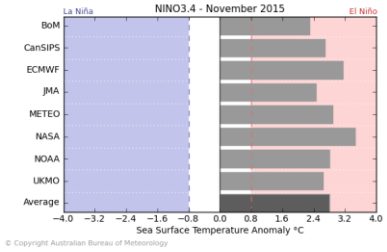


Monthly anomalies across large areas of the eastern half of the equatorial Pacific have reached more than+4°C, while an area of cool anomalies persists in the sub-surface of the western equatorial Pacific.
http://www.bom.gov.au/climate/enso/

El Nino strongest since 1997-98

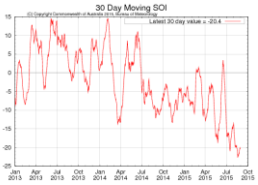
The 2015 El Niño is now the strongest El Niño since 1997–98 with sea surface temperatures well above El Niño thresholds, consistently weak trade winds, and a strongly negative SOI. Most international climate models indicate the tropical Pacific will continue to warm. El Niño tends to peak during late spring or early summer and weaken during late summer to autumn, and is usually associated with lower winter–spring rainfall over eastern Australia. A positive IOD typically reinforces this pattern over central and southeast Australia. However, sea surface temperatures to the north of Australia and across the Indian are likely to moderate the influence of these two climate drivers in some locations.
http://www.bom.gov.au/climate/enso/

Model outlook



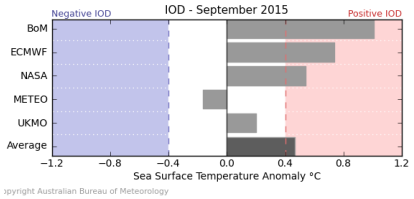
The model outlook for NINO3.4 for the next three months shows that international models surveyed by BoM indicate a strong chance of El Nino. If the bars on the graph exceed the red dashed line, there is an increased chance of El Niño.
http://www.bom.gov.au/climate/ahead/model-summary.shtml#tabs=Pacific-Ocean

SOI remains negative



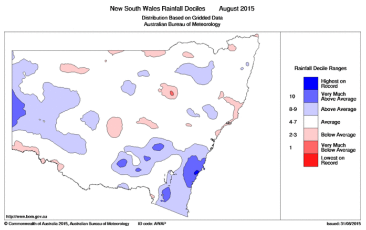
The SOI remains negative with the 30-day SOI value to 30 August at -20.4. Sustained negative values below -7 may indicate El Niño.
http://www.bom.gov.au/climate/enso/#tabs=SOI

Positive IOD by spring?



The Indian Ocean Dipole index has been at or above +0.4°C for the past four weeks and needs to remain at or above this level in September to be considered a positive event. Three of the five international models surveyed by BoM indicate a positive IOD event is likely during spring.
http://www.bom.gov.au/climate/ahead/model-summary.shtml#tabs=Indian-Ocean

NSW in August



Rainfall was close to average for NSW during August, with very heavy totals in the southeast towards the end of the month and close to normal rainfall elsewhere (right). Maximum and minimum temperatures were above average for the state, with particularly warm days in the northeast.
http://www.bom.gov.au/climate/current/month/nsw/summary.shtml

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NSW DPI seasonal conditions report

Subscribe to NSW DPI's seasonal conditions report, and the climate summary which provides a snapshot of the monthly report in an easy to read four-page format with additional graphs and charts.
http://www.dpi.nsw.gov.au/agriculture/emergency/seasonal-conditions/regional-seasonal-conditions-reports

CLIMATE RESOURCES

Possibility of La Nina next year

This year's El Nino promises to be very strong, but its extent and strength depend on whether there is a concurrent positive Indian Ocean Dipole. Most models are predicting a positive dipole this year, which raises the prospect of a strong El Niño preceded by a positive Indian Ocean Dipole and followed by a La Niña event, exactly as occurred in 1982-84 and 1997-99.
https://theconversation.com/2015-16-is-shaping-up-to-deliver-a-rollercoaster-from-strong-el-nino-to-la-nina-46135

Warmer temperatures will increase El Nino/La Nina

International researchers suggest that rising temperatures will almost double the frequency of extreme El Niño events. Weaker equatorial Pacific currents will boost the occurrences of warm sea surface temperatures that characterise extreme El Niño events. The frequency of extreme La Niña is also expected to increase in response.
http://www.nature.com/nclimate/journal/v5/n9/full/nclimate2743.html
http://www.nature.com/news/developing-el-ni%C3%B1o-could-be-strongest-on-record-1.18184

Japanese satellite to benefit Australian forecasts

The Japanese Meteorological Agency's Himawari-8 satellite over the western Pacific will benefit Australian farmers because it will give forecasters rapid updates on developing meteorological conditions, particularly in areas without radar coverage. A key benefit will be the ability to observe thunderstorm formation. Other benefits include early detection of tropical cyclones, detection and tracking of bushfire movements, improved observation of fog, and faster detection and analysis of volcanic eruptions.
https://theconversation.com/weather-forecasting-is-about-to-get-even-better-44594

Assessing the value of improved seasonal forecasting

The Centre for International Economics has estimated the potential value of improved seasonal climate forecasts for 11 sectors of Australia's economy. The potential value for the agricultural sector is significant, much greater than for other sectors in the economy, and is expected to increase.
http://www.managingclimate.gov.au/publications/benefits-of-improved-forecasts/

Try out BoM's experimental extreme heat tool

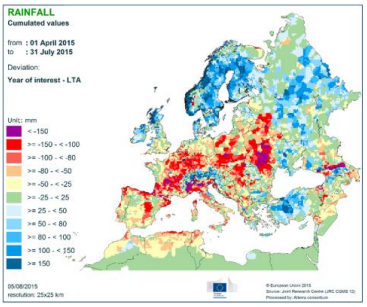
BoM is currently developing tools to forecast extreme heat. If you would like to trial the tools for BoM, you can apply for access online at http://poama.bom.gov.au/
http://www.managingclimate.gov.au/wp-content/uploads/2015/08/MCV_CLIMAG_Ed26.pdf

July was world's hottest month on record

July 2015 was the world's hottest month on record, and 2015 is shaping up to be the hottest year says the US National Oceanic and Atmospheric Administration. Two main factors are at play: a long-term warming trend across the globe, plus the formation of El Nino in the equatorial Pacific region. The El Nino causes sea surface temperatures in the central and eastern equatorial Pacific to rise significantly and deliver a pulse of heat to the atmosphere.
http://www.ncdc.noaa.gov/sotc/summary-info/global/201507

European drought worse since 2003

Much of the European continent has been affected by severe drought due to a combination of prolonged rain shortages and exceptionally high temperatures. The drought is one of the worst since the drought and heat wave of 2003. In the Mediterranean region, maximum daily temperatures have been consistently above 30°C for 30 to 40 days.
http://edo.jrc.ec.europa.eu/documents/news/EDODroughtNews201508.pdf



Sea levels rise due to ice loss

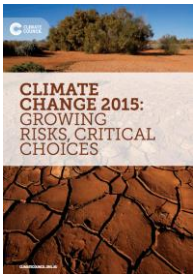
New research from NASA shows that sea levels worldwide have risen on average by 7cm since 1992, which is at the upper end of the expected range, due to ice loss from Greenland and Antarctica.
http://climate.nasa.gov/news/2329/?con=&dom=pscau&src=syndication

Increasing concern about climate change

The Climate Institute's annual Climate of the Nation survey, taken in July 2015, reveals increasing awareness and concern about the impacts of climate change and the country's future energy mix. The report compares data from similar work in 2012, 2013 and 2014.
http://climateinstitute.org.au/verve/_resources/CoN_2015_FINAL-WEB.pdf

Climate change risks and choices

This latest Climate Council report outlines how the changing climate poses substantial and escalating risks for health, property, infrastructure, agriculture and natural ecosystems in Australia. The risks now look more serious at lower levels of climate change, strengthening the case for urgent action.
https://www.climatecouncil.org.au/climate-change-2015-growing-risks-critical-choices



What do NSW stakeholders want?

NSW stakeholders want information on climate impact information, training and tools to better communicate climate change, and support to integrate projections into land use and infrastructure planning, according to Adapt NSW's latest newsletter. The feedback was obtained at recent OEH climate adaptation workshops around the state.
http://www.climatechange.environment.nsw.gov.au/Climate-projections-for-NSW/Regional-Information-Sessions

Stress and adaptation

This study of the wine industry in southern Australia has found that growers' current economic, social and environmental stresses overshadow planning for climate change. Projected climate change means stress in the farming community is likely to worsen and practitioners working with farmers need to recognise the complex causes of stress, in addition to the practical need to facilitate climate change adaptation. A useful approach is to understand both the types and causes of stress, and the way individuals cope.
http://www.tandfonline.com/doi/pdf/10.1080/10371656.2014.1001481

Farmers want current, credible and relevant information

This 2014 review of how information and practice about climate change is received and utilised by Wimmera farmers and agribusiness found that the consistent barrier to adaptation is the inadequacy of information and knowledge transfer. Information is best understood when it is up-to-date, credibly sourced, geographically relevant and thematically relevant. Above all, it must acknowledge the economic realities of farming and the practicalities of any suggested behaviour change.
http://www.cerdi.edu.au/cb_pages/files/Wimmera_VASP_LiteratureReviewGapAnalysis_Final.pdf

Farm Innovation Fund

This fund, managed by the Rural Assistance Authority, aims to help primary producers meet changing seasonal conditions by identifying and addressing risks to their farming enterprise, improving permanent farm infrastructure and ensuring long-term productivity and sustainable land use. Loans are subject to funds being available.
http://www.raa.nsw.gov.au/assistance/farm-innovation-fund

Adaptation network calling for advisory group members

The National Adaptation Network for Natural Ecosystems is seeking people to participate in its stakeholder advisory group. Anyone interested in climate adaptation in Australia is invited to apply. The Network aims to support local decision-makers managing climate risks on Australia's natural environment. Participants would provide advice in their area of expertise and provide feedback on network activities.
http://climatechangeresearch.network/nccarf/natural-ecosystems-network-invites-representatives-across-sectors-and-government-to-participate-in-its-stakeholder-advisory-groups

Drought stunts tree growth

Trees could take up to four years to return to normal growth rates in the aftermath of a severe drought, a new study finds. Slower growth means the trees are absorbing and storing less carbon dioxide from the atmosphere.
https://theconversation.com/extreme-droughts-weaken-trees-ability-to-soak-up-carbon-45349
http://www.princeton.edu/pei/news/archive/?id=15319

Linking policy and economics in climate adaptation

This OECD publication provides practical guidance and the latest evidence for policy makers on how they can more reliably estimate the costs and benefits of adaptation.
http://www.oecd.org/finance/climate-change-risks-and-adaptation-9789264234611-en.htm

EMISSIONS

Guidelines for second ERF auction

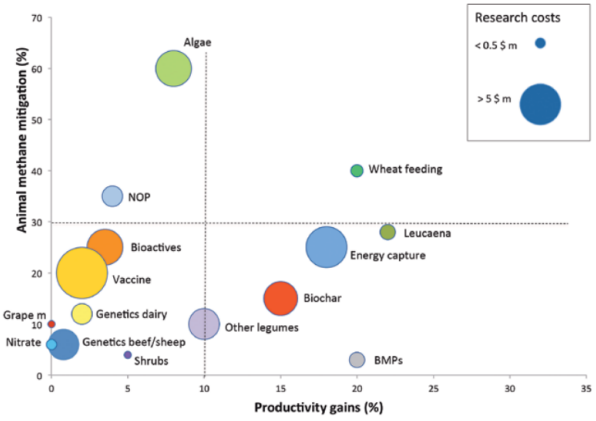
The Clean Energy Regulator has released new auction guidelines for the Emissions Reduction Fund auction on 4-5 November 2015. The auction will continue as a pay as bid, sealed bid format, and include a new variable volume threshold to determine successful auction bids.

http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Step-2-Contracts-and-auctions/participating-in-an-auction

Methane research findings

The new MLA booklet 'More meat, milk and wool: less methane' details the outcomes of the National Livestock Methane Program research into lowering methane emissions and raising productivity in Australia's livestock industries. Research suggests there are practices that can lift productivity 22% and up to 40% or more of the feed energy lost in methane from livestock can be captured and put to productive purposes.

http://www.mla.com.au/News-and-resources/Publication-details?pubid=6449



Reducing vegetable crop emissions

Promising strategies to reduce greenhouse gas emissions in subtropical vegetables and maintain yield include frequent and low-intensity irrigation, split application of nitrogen fertiliser, substitution of NO3-based fertilisers for urea, and reduction in fertiliser application rates.

http://www.publish.csiro.au/nid/84/paper/SR14355.htm

Emissions value of revegetation

Modelling of a wool producing farm in SE Australia shows that at a relatively low stocking rate of 8 ewes/ha, only 15% of the farm needed to be in tree cover for the farm to be carbon neutral. Significant revegetation has occurred on the farm since the 1980s with 115 ha of the 250 ha property either planted with trees or revegetating. From 1980 to 2012 the farm sequestered on average seven times more CO2-e / year in trees and soil than it produced from livestock and carbon dioxide emissions. A comparable study on a wool farm with a high stocking rate in western Victoria is underway.

http://www.piccc.org.au/WFSAM

On farm practices to mitigate nitrous oxide

This review summarises management options available to farmers to improve nitrogen use efficiency within farm production systems.

http://www.farmingfutures.org.uk/blog/sustainable-crop-and-animal-production-help-mitigate-nitrous-oxide-emissions

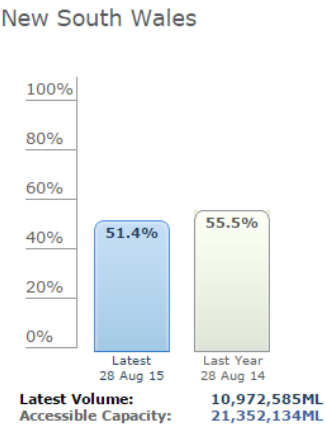
Global Warming Potentials have changed

Global Warming Potentials used to convert raw gases into carbon dioxide equivalent values have been revised. The GWP for methane increases from 21 to 25, and the GWP for nitrous oxide decreases from 310 to 298. Emissions Reduction Fund project proponents are encouraged to check that they are using the most current version of National Greenhouse and Energy Reporting.
http://www.environment.gov.au/climate-change/publications/emissions-reduction-fund-update

WATER

NSW water storages

NSW water storages are at 50% capacity, slightly lower than this time last year.
http://water.bom.gov.au/waterstorage/awris/#urn:bom.gov.au:awris:common:codelist:region.state:newsouthwales



Queensland guide to rural water meters

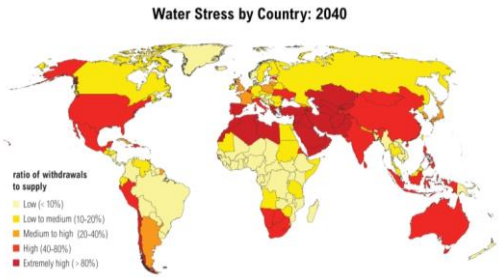
The Queensland government has published a new guide to installing and validating non-urban water meters.
https://www.dnrm.qld.gov.au/?a=284690

Maps show wheat WUE has increased

Maps detailing the water use efficiency of wheat crops across Australia show that between 1982 and 2012 more than half of Australia's wheat-growing regions improved their WUE by at least 50 per cent. Many areas have achieved even more than this.
http://www.grdc.com.au/Media-Centre/Ground-Cover/Ground-Cover-Issue-116-May-June-2015/WUE-data-measures-an-industry-triumph

Water stress in 2040

The World Research Institute has used an ensemble of climate models and socioeconomic scenarios to score and rank future water stress. It found that 33 countries face extremely high water stress in 2040.
http://www.wri.org/publication/aqueduct-projected-water-stress-country-rankings



Water and climate: Recognise anthropogenic drought

This Nature article looks at the implications of California's current extreme drought for managing water in a warmer, more densely populated world. The authors call for more research on the potentially different water supply and demand that will characterise droughts in a warmer world and the localised impacts such as reduced economic production or depletion of local groundwater.
http://www.nature.com/news/water-and-climate-recognize-anthropogenic-drought-1.18220

SOILS

Fungi, not bacteria, dominate high carbon soils

Analysis of 23 years of data from Harvard's Detritus Input and Removal Treatments (DIRT) experiment has found that high-quality carbon soil benefit fungal dominance, rather than bacteria, and there was no difference in the carbon dioxide produced by either decomposer communities. These findings suggest a need to revise our basic understanding for microbial communities and the processes they regulate in soil.
http://www.sciencedaily.com/releases/2015/08/150828081444.htm

AM fungi found on all continents

A global study of arbuscular mycorrhizal fungi has found that 93 percent of the fungi identified existed in the soil on more than one continent, and that 34 percent of them were found on all six continents. They also found that dispersal appeared to lessen the farther plants were from the equator and that at the local level, spatial distance and environmental conditions had an impact on the types of fungus appearing in plant roots.
http://phys.org/news/2015-08-soil-dwelling-fungi-extent-worldwide.html#jCp

Soil carbon in the Monaro Region

This free e-book from Tocal documents the impact of farm management strategies on the concentration and stock of soil carbon in the Monaro region. The practices of interest included liming, nutrient management, introduced perennial pastures and minimum disturbance cropping.
https://itunes.apple.com/au/book/id1035198100

Alternative fertiliser trials in southern tablelands

Six years of rigorous testing of alternative fertilisers on native perennial grass-based pastures on the southern tablelands has found that fertiliser performance depends on their plant-available sulphur and phosphorus, nutrients generally deficient in the region's pasture soils. A report on the full six years of research will be available in early December.
http://southeast.lls.nsw.gov.au/resource-hub/newsletters/august-2015/alternative-fertilizers-and-pasture-productivity

Action needed to build humus stocks

German research suggests that humus stocks in arable soils are decreasing due to stagnating crop yields and increased decomposition in warmer temperatures. Humus building measures include the diversification of crop rotation, application of green manure and winter greening to reduce soil erosion, optimised soil cultivation, organic farming, agroforestry, and leaving crop residues on fields. The study authors also consider that interdisciplinary research on the causes of yield stagnation and humus depletion is essential as a single discipline alone cannot solve this problem.
http://www.tum.de/en/about-tum/news/press-releases/short/article/32582/

Grower options for spent litter utilisation

This RIRDC report is the background document for a series of simple user guides developed for farmers and advisers to improve use of chicken litter.
https://rirdc.infoservices.com.au/items/14-093

Land application of chicken litter

Chicken litter is an important source of fertiliser and soil conditioner for many industries, and the chicken meat industry has completed a large number of research projects that aim to help landholders use this resource effectively and understand best management practices.
https://rirdc.infoservices.com.au/items/14-094

Occasional plough helps reduce weeds

WA research suggests that mouldboard ploughing every four years in no-till paddocks helps control weeds as long as the weed seeds are buried deep.
http://www.sciencewa.net.au/topics/agriculture/item/3737-bury-weed-problems-with-an-occasional-plough

Earthworm molecules digest toxins

British scientists have discovered that the earthworm's gut contains a suit of molecules that neutralise the plant toxins that remain in dead plants. They have named the molecules drilodefensin, derived from *Megadrile*, the Latin for earthworm invertebrates.
http://www.theguardian.com/science/2015/aug/04/earthworms-ability-digest-poisons-unearthed-molecules-drilodefensins

Soils are important for our climate

In this blog, Pete Smith, Professor of Soils & Global Change at the University of Aberdeen outlines how soils have also been thrust to the forefront of international science because of climate change. Globally, the top metre of soils contains about three times as much carbon as in our entire atmosphere.
http://www.carbonbrief.org/blog/2015/08/why-are-soils-so-important-for-our-climate/

BIODIVERSITY

National Biodiversity Month

September is Biodiversity Month to promote the importance of protecting, conserving and improving biodiversity both within Australia and across the world.
http://australianmuseum.net.au/biodiversity

New ecosystem science council

A new ecosystem science council has been established to implement the collective vision of Australia's ecosystem science and management communities, and ensure our national ecosystem science capability delivers for the future needs of Australia.
http://www.ecosystemscienceplan.org.au/

Clearing habitat around fields fails to reduce pathogens

A US study into clearing habitat around Californian vegetable farm paddocks to reduce pathogen spread found that farms that removed the most habitat had more pathogens, including E. coli and salmonella. The study recommended leaving vegetation between grazed areas and crops, fencing off upstream waterways to prevent cattle waste going downstream, and planting crops that are cooked before being eaten, such as corn, artichokes and wheat, between fresh produce fields and grazing land.
http://news.berkeley.edu/2015/08/10/clearing-habitat-next-to-crops-fails-to-reduce-contamination/

ENERGY

Water management plan approved for Santos

The NSW Division of Resources and Energy has approved an application by Santos for a water management project for its gas exploration project at Leewood south of Narrabri. The project involves treating water extracted during gas exploration activities and includes a reverse osmosis plant and brine concentrator, associated pipework to transfer water and bring around the facility, treated water storage, and an irrigation system. The treated water will be reused for irrigation purposes on the Leewood property, dust suppression, drilling, construction activities and firefighting.
http://www.resourcesandenergy.nsw.gov.au/media-events/news/2015/santos-leewood-project

FOOD

Crawford conference on food security

This year's Crawford conference in Canberra focussed on the importance of collaboration and partnership between the public and private sectors to achieve sustainable intensification and improved food security. Innovation underpinned by targeted research investment is critical to achieve sustainable intensification of agricultural production.
http://www.crawfordfund.org/events/2015-conference/

Climate change and implications for food systems

This FAO report takes stock of climate change impacts on food and agriculture at global and regional levels over the past two decades. The evidence presented describes how global warming will impact where and how food is produced and discusses the significant consequences for food security, health and nutrition, water scarcity and climate adaptation. The book also highlights the implications for global food trade.
http://www.fao.org/3/a-i4332e/index.html

Production shocks and food impacts

A new report from the UK-US taskforce on extreme weather and global food system shows that severe 'production shocks' caused by extreme weather may occur as frequently as once every 30 years as the world's climate and global food supply systems change in the coming decades. The report makes a series of recommendations to help policy and business plan for the future.

http://www.foodsecurity.ac.uk/news-events/news/2015/150814-pr-taskforce-reports-weather-food-supplies.html

Global Food Security 2030

This EU report proposes a more comprehensive and systemic approach to food security based on four processes: extensive transformation of agriculture production systems through investment, research and training; adequate rural transformation; balancing of production and consumption in the food systems between local, regional and global levels, and finally, moving towards a demand-driven food system, with responsible consumer behaviour shaping sustainable objectives.
http://publications.jrc.ec.europa.eu/repository/bitstream/JRC94867/lbna27252enn.pdf

LAND USE

Mining SEPP amended to include environmental and social impacts

The Baird government has amended its mining policy process to ensure that decision makers consider environmental impacts on both the natural and built environments, and social and economic impacts in their assessment of development applications.
http://planspolicies.planning.nsw.gov.au/index.pl?action=view_job&job_id=7151
http://www.smh.com.au/environment/miners-lose-edge-as-nsw-government-balances-profits-against-damage-before-approvals-20150831-gjbd28.html

ABC Fact Check on Liverpool Plains

An ABC Fact Check of Agriculture Minister Barnaby Joyce's claim that the Liverpool Plains are Australia's best agricultural land, and the proposed Shenhua mine is in the middle of it, has concluded that the statement is close to the mark, with the land in the Liverpool Plains among the best in Australia for broadacre agriculture. Fact Check found that the mine is in the middle of the Plains area, will be located on the ridges surrounding the floodplain and could affect the high quality agricultural land on the floodplain, mainly by disturbing the groundwater.
http://www.abc.net.au/news/2015-08-26/shenhua-watermark-coal-mine-barnaby-joyce-fact-check/6660140

Regional agricultural statistics now available

ABARES has produced profiles of agricultural, forestry and fisheries industries for all states and regions. Each profile presents an overview of the agriculture, fisheries and forestry sectors in the region and the recent financial performance of the broadacre and, where relevant, dairy and vegetable industries.
http://www.agriculture.gov.au/abares/publications/aboutmyregion

SUSTAINABILITY

Megatrends affecting Australian agriculture

A new study from RIRDC and CSIRO outlines the interlinked megatrends that will affect Australian agriculture over the next 20 yearsa: population growth; a rising middle class; informed customers; transformative technologies and greater risks due to globalisation and climate and environmental change.
https://rirdc.infoservices.com.au/items/15-065

From vicious to virtuous cycles for sustainable agriculture

This discussion paper from the Centre for Policy Development suggests that by opening up markets for agricultural goods and practices that maintain or increase primary resource condition, Australia can reverse a negative cycle of declining resource condition while safeguarding competitiveness and productivity. A link to The Stock Journal's coverage of the paper's launch is also below.

http://cpd.org.au/wp-content/uploads/2015/08/Vicious-to-virtuous-cycles-2015.pdf
http://www.stockjournal.com.au/news/agriculture/agribusiness/general-news/sustainable-ag-must-pay/2740725.aspx

Melbourne Statement on sustainable intensification

The 2014 Melbourne Statement on sustainable intensification of agriculture to meet food demand identifies several themes that will need to be addressed in agriculture in coming decades. These include input/output efficiency, climate ready farming, improved risk management, precision technologies, coordinated data , accreditation, education and skills, engagement in the supply chain, and increased investment in all aspects of agriculture.

http://www.piccc.org.au/sites/piccc/files/The%202014%20Melbourne%20Statement%202015.pdf

Farmer wellbeing

The 2014 regional wellbeing survey has found that dryland farmers report better wellbeing than non-farmers and irrigators due to high levels of social capital, financial wellbeing, and confidence in community inclusiveness, leadership and collaboration. However, all farmers had consistently poorer outcomes for access to services, telecommunications and infrastructure, and confidence in their skills and education. A specific report on farming and agriculture wellbeing will be released next month.

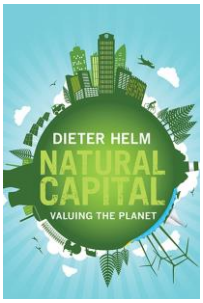
http://www.canberra.edu.au/research/faculty-research-centres/ceraph/regional-wellbeing/survey-results/2014-survey-results

The Good Land Project

This new website from agricultural journalist Matthew Cawood focuses on cultivating life from land, providing case studies on how people can live creatively with agriculture. The stories explore the questions: How do we have productive agriculture that interacts with natural ecosystems, to the benefit of both? In a time when agriculture has become the environment, what do we want our environment to look like? For agriculture to become an extension of natural ecosystems, how do we need to redefine ourselves and our place in the world?

http://goodland.wpengine.com/

Natural capital: Valuing the planet



This book by Oxford economist Dieter Helm outlines how to calibrate, measure, and value natural capital from an economic perspective and create a stable new framework for sustainable growth.

http://yalepress.yale.edu/yupbooks/book.asp?isbn=9780300210989

Environmental information directory

This directory provides a central point of access for environmental information products and services that have relevance to Australian Government and its stakeholders.

http://www.bom.gov.au/environment/activities/products/

EVENTS

September 10-11	Future of local food conference, Melbourne http://futureoflocalfood.org.au/
September 12-13	Byron Bioenergy Conference, http://www.byronbiochar.com.au/index.php/events/
September 18-19	Carbon farming: Why, how and financial possibilities, Warrah NSW https://www.facebook.com/pages/Upper-Mooki-Landcare-Inc/695444810561273
September 20-24	17th Australian Agronomy Conference Hobart http://www.agronomy2015.com.au/index.html
October 28-29	Rangelands carbon conference, Cobar http://western.lls.nsw.gov.au/resource-hub/events/2015/rangelands-carbon-conference
November 6	NSW Climate Change Adaptation Conference, Sydney https://www.eventbrite.com.au/e/adaptnsw-2015-nsw-climate-change-adaptation-conference-tickets-18012709499
Nov 7-8	National Biological Farming Conference and Expo, Lismore NSW http://www.soilcare.org/national-biological-farming-conference-and-expo-2015.html
Nov 10-13	NSW Coastal Conference, Forster http://www.coastalconference.com/
November 18-19	Climate Change Research Strategy in Primary Industries conference, Sydney http://www.ccrspi2015conference.com/program.php
Nov 30-Dec 2	Bioenergy Australia 2015, Launceston http://www.bioenergyaustralia.org/
December 4-8	International Nitrogen Initiative Conference, Melbourne http://www.ini2016.com/
February 14-18 2016	6th Greenhouse Gas and Animal Agriculture Conference, Melbourne http://www.ggaa2016.org/
July 5-7	Climate Change Adaptation 2016 Conference, Adelaide http://climate-adaptation.org.au/events/climate-adaptation-2016/

SUBSCRIBE

NRM on Farms is a monthly newsletter that summarises recent information about climate and natural resource management relevant to agriculture to keep farmers and agricultural and NRM advisors and researchers up to date. It is freely available to anyone interested or involved in agriculture or NRM. To subscribe, email Rebecca Lines-Kelly at rebecca.lines-kelly@dpi.nsw.gov.au.