

The Wimmera Weather Radar

Benefits review – March to June 2020



Table of contents

1. Executive summary	
1.1 <i>Chris Sounness</i>	3
2. Case studies	
2.1 <i>Introduction</i>	4
2.2 <i>David Jochinke</i>	6
2.3 <i>Simon Severin</i>	8
2.4 <i>Tim Rethus</i>	9
2.5 <i>Marshall Rodda</i>	10
2.6 <i>Dr Garry O’Leary</i>	11
2.7 <i>John Bish</i>	13
2.8 <i>Tim Pohlner</i>	14
2.9 <i>Rob Launder</i>	15
3. Financial analysis	
3.1 <i>Prudence Cook</i>	16
3.2 <i>Matthew Sparke</i>	18
4. Social media commentary	
4.1 <i>How we welcomed the radar’s first rain</i>	19
5. Business case for improved weather services (December 2015) – attached	

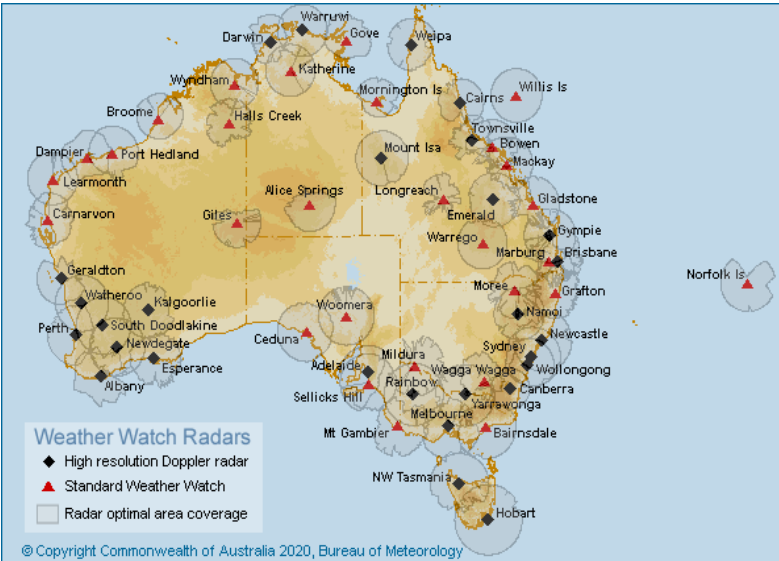
Wimmera Development Association (WDA) acknowledges the work of Jessica Grimble and Alexander Darling in compiling this report and thanks those who participated in interviews for their feedback on this project. WDA also acknowledges Chris Sounness, Prudence Cook and Matthew Sparke for their expert commentary.

Executive summary

Chris Sounness | Wimmera Development Association

The Rainbow weather radar was made operational in April 2020. The federal government, through the Bureau of Meteorology, and the Victorian Government funded the project. In its short existence, the radar has already delivered significant benefits to the region.

The Wimmera Southern Mallee region lobbied for several years for the radar. One aspect was to create a business case detailing what value the radar could deliver to the area. Wimmera Development Association wrote this business case in 2015. Two agronomists reviewed the business case in the spring of 2020 to provide thoughts on how the business case stacked up once the radar became operational. Both highlighted that a number of assumptions made in the original business case understated the value the radar offers.



This report provides a snapshot of those benefits through eight case studies – each highlighting how the radar assists in making informed decisions where the radar enhances timely weather information.

Two recommendations are made:

- A thorough review of the value of the radars across Australia – both economically and socially – is completed within the next five years. Several radars have become operational throughout agricultural areas and capturing the value these bring will be necessary for ongoing investment in agricultural regions of Australia; and
- The business case for the radar was sound and developed with an understanding of optimal agricultural practices. The framework of the business case is something other regions could use. However, any new business case will need to ensure it is based on optimal practices for the region where the case is being made.

Case studies

FARMERS in Western Victoria’s Wimmera Southern Mallee region stand to save tens of thousands of dollars every season, since a weather radar came online in March 2020¹.

The savings will come in the form of more educated decision making for farm businesses – whether that be sowing or harvest, the application of herbicides and fertilisers, shearing time or many other day-to-day tasks. There are also benefits for tradespeople, emergency service volunteers, aviators, tourism and water management among many other services and organisations.

The radar is located on private farmland about 10 kilometres south of Rainbow - a town of 683 people in the Hindmarsh Shire. Rainbow is about 400 kilometres north-west of Melbourne.

Construction on the radar, worth \$9.3 million, began in July 2019² - three years after the Victorian and Australian governments committed funding to the project.

Those pledges followed years of campaigning from farmers and the Wimmera Development Association – the region’s peak advocacy group that also prepared the project’s business case in December 2015.

Radar estimates “offer a far greater spatial and temporal resolution in comparison with rain gauges; and greater accuracy than satellite-based rainfall estimates”³.

Agriculture Victoria notes the Rainbow radar is a C-band 1-degree dual polarisation Doppler radar. “As well as using electromagnetic waves to detect raindrops, hail and snow, Doppler radar can measure wind by detecting the speed of movement of the water they encounter,”³ it says.

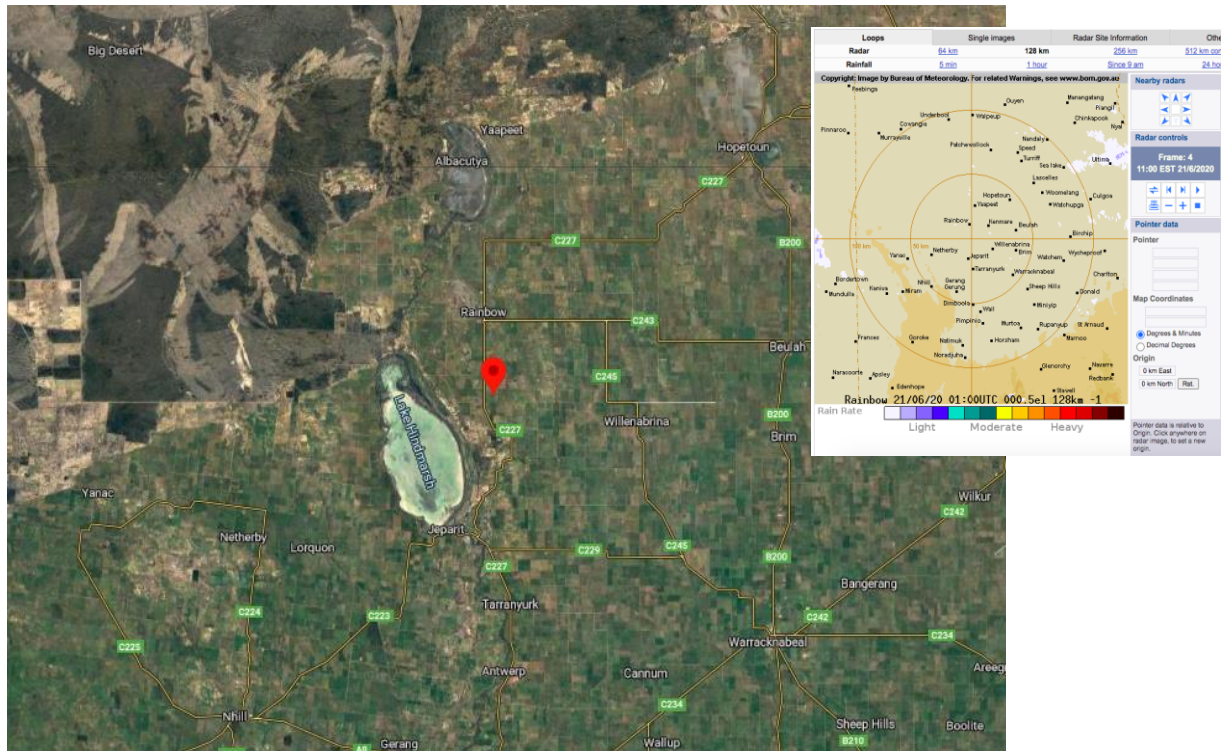
Prior to this investment, the closest radars were each more than 200 kilometres from the Wimmera – namely, at Mt Gambier in South Australia and at Mildura on the Victoria-New South Wales border. Information from these distant facilities proved insufficient for the time-sensitive decision making that characterises broadacre cropping. Upgrades to the Mildura radar are pending.

The Wimmera Southern Mallee is a major agricultural and food producing region. It generates \$1.6 billion each year in the gross value of agricultural production and supports more than 5800 direct farming jobs, plus further jobs in associated manufacturing and transport. The region produces more than half of Victoria’s total grain crop, oilseeds and pulses.

¹<https://www.abc.net.au/news/2020-03-31/bom-victoria-rainbow-weather-radar-goes-online-agriculture/12103014>

² <http://agriculture.vic.gov.au/agriculture/weather-and-climate/rainbow-radar#about>

³ <http://agriculture.vic.gov.au/agriculture/weather-and-climate/rainbow-radar>



Above: The location of the radar in the Wimmera and (inset) the bureau page showing the weather data for the previous half-hour it continuously collects.

A continuing drive for increased productivity has seen adoption of higher yielding varieties and more complex cropping systems, with investment in precision farming to optimise yields and control costs. However, the increased investment and property size means that cropping enterprises now need to generate a higher return with more certain yields. Farming enterprises therefore need access to the best available data to optimise decision making.

The Wimmera Development Association’s business case suggested the enhanced weather forecast information from the radar station had the potential to improve decision making by farmers that will enhance yields and reduce wasted costs. It reviewed two critical regular activities – being urea spreading and herbicide spraying – and identified the potential commercial benefits that could reasonably be attributed to improved decision making from the enhanced weather forecast information. This suggests annual benefits of \$3.5-million.

The business case said the project would generate a positive ‘benefit to cost ratio’ of x 3 and an NPV of \$30-million.

David Jochinke | Farmer, Murra Warra

DAVID Jochinke was among the many people advocating for a weather radar in the Wimmera Southern Mallee.

The third-generation farmer, with key roles within the Victorian Farmers Federation and Wimmera Southern Mallee Regional Partnership, was among a large team working to advocate for the benefits of the infrastructure build in the region.

“Every time there was a budget pitch, we made sure it was on the government’s wishlist; that they knew we wanted it funded,” he said.



Mr Jochinke’s property is at Murra Warra, north of Horsham, in a key cropping area.

Before the radar, the region’s farmers would make “best guesses” – guided by the radar showing predictions of rainfall from either the Mt Gambier or Mildura radars – but it wasn’t reliable.

The radar became active in March 2020. Worth \$9.3-million, it was borne from a partnership between community leaders, the state government, the Bureau of Meteorology and the Wimmera Development Association. The state and federal governments funded the project.

“From the start, everyone knew this was one of the most significant pieces of weather instrumentation that has come into our region – almost forever. It’s great to have rain gauges, it tells you what happened; but a radar actually helps predict the movement of the front, and the expected intensity, so you can make critical management decisions that are very time dependent,” Mr Jochinke said.

“If you know you’re shearing the next day, you can run sheep under cover in the time you have. If you’re spreading urea, or it’s ready to be spread, it gives enough time to make a decision about where and how you’ll spread it, knowing you will get that all-important rainfall afterwards to wash it in. Some of those daily operational management decisions are so much easier now that the radar has been switched on.”

Farming involves significant financial outlays – regularly.

“There’s not too many times we go into a paddock where we’re not investing another \$10,000 – minimum – to that crop. If you don’t get the application right, or you get rain or miss rain, you can negate the investment you’ve made,” Mr Jochinke said.

“When you’re putting that much money on the line every time you head out, you want to make sure every drop, every grain, every bit of fertiliser you put out, counts.

“The radar gives us confidence to make decisions. Not only does it help you make money; it also helps you save money by making those decisions in a timely, effective manner.”

Farmers celebrated the arrival of the first rainfalls shown on the Wimmera Weather Radar on April 1.

“Most farmers were watching that front come over. To actually hear the rain on their roof and see it on the radar at the same time – which is in the past not always been the case – showed that the technology works. It started instilling the confidence that people could trust that it wasn’t telling porkies; that it was doing what it said it would deliver,” he said.

The 2016 census shows 2874 people in the Grampians region are employed in grain, sheep and cattle farming - 12 per cent of the region’s total workforce. The region – which stretches from Northern Grampians shire in the east, to the West Wimmera – is home to 32 per cent of all Victoria’s grain growers.

Simon Severin | Agronomist, Nutrien Ag Solutions

SIMON Severin has been an agronomist for 25 years – the past seven of them in the Wimmera.

Farmers enlist him to look for ways to increase the productivity of their land – how to grow as many high-quality crops as possible in the soil available.

He works for Nutrien Ag Solutions – a merger of long-serving agricultural companies Ruralco and Landmark.

Mr Severin said farmers would save money by only applying fertiliser when rain came – and said the Wimmera Weather Radar, activated in March 2020 after a long campaign, helped access more accurate forecasts for that rain.



“I think the greatest benefit of the radar is that farmers can make a decision about spreading fertiliser and feel confident that they will get a rain to wash it in – so that money is not lost when there is no rain following application,” he said. “If they are about to spend \$10,000 on Urea, they want to be confident that money will not be wasted.

“Being able to make a decision two or three days out is enough to be able to spread some nitrogen fertiliser and be confident we are going to get some rain when the forecast says.

“We were still confident (before the radar came online), but the further out we were – say if we were viewing a rain event forecast seven days ahead – we couldn’t be confident we would get that rain in seven days’ time.

“There is another aspect: It’s also spraying crops with herbicides and fungicides and not having rain come through and wash them off immediately during application. We use the radar to say, ‘We don’t think there is rain or the wind is in the right direction today, so we think it’s a good time to spray.’”

Nutrien Ag Solutions’ offering includes precision farming services, marketing livestock and wool, agricultural services, water, finance, insurance, merchandise and real estate. It has various branches across the Wimmera Southern Mallee.

Tim Rethus | Farmer, Vectis

TIM Rethus is a third-generation farmer on a property at Vectis, west of Horsham.

“We have the Grampians to the south, Mt Arapiles to the west, and then Mt Gambier is to the south-west,” he said.

“Our weather often comes from a westerly direction and is broken up by those mountains.

“With the radar the way it was before, where we just had Mt Gambier, we weren’t sure whether the weather was disappearing because of the mountains, or whether the radar just wasn’t recording the weather because the mountains were in the way.”



Tim Rethus says the Rainbow radar gives more accurate weather forecasts for his property, and gives him greater confidence to make decisions based on those forecasts.

Mr Rethus said the Wimmera Weather Radar, at Rainbow, had given him insight and confidence into the impending weather that aided timely and impactful decision making.

The radar became active in March 2020 after a long community campaign for infrastructure that would provide the Wimmera Southern Mallee with more accurate and real-time weather information and forecasting.

“The Rainbow radar to the north of us gives us that full coverage – and we’re now able to watch those fronts come from Adelaide continuously all the way through, rather than guessing and estimating what’s coming for us,” he said.

“When it comes to our spraying and fertilising jobs, we can be confident which direction the wind is coming from and if the rain is coming and still holding together.

“The Rainbow radar fills a gap, which will be really beneficial for the northern Wimmera Southern Mallee area.”

Marshall Rodda | Farmer, Tarranyurk

MARSHALL Rodda runs a broadacre cropping and sheep operation at Tarranyurk - a half-hour drive almost due south of the Wimmera Weather Radar.

He said the radar, located at Rainbow and active since March 2020, was allowing for more accurate decision making – and this benefit would become more and more important for farmers in the region, as many gradually acquired larger pieces of land.

“We can look at the radar and see where the rain event is. We’re getting seven-day forecasts, so we can look a week in advance to get our Urea or chemical program ready to rock and roll,” he said.

“Today, if it looks like rain and we want to put the Urea out, we will have a look at the new radar. Say we have 80 hectares, it’s probably 90 minutes’ worth of work and we can get out there and go bang! Drop that Urea on the ground and within an hour of finishing, we can be sure there will be some rain to activate that Urea straight away. It’s a real positive that we are going to get a result out of our input.



Marshall Rodda followed in the footsteps of his father William, who farmed the land for 46 years. He employs two staff members.

“If we don’t have the rain, we are putting the Urea out and getting nowhere near the commercial benefit as we could. It could nearly be a ‘zero event’ because Urea does need considerable moisture to activate it.”

Mr Rodda estimated Urea cost between \$450 and \$650 a tonne, and farmers in the region could easily require 40 to 50 tonnes of Urea every year.

“You can spend a lot of money very quickly for no gain or very substantial gain,” he said.

Mr Rodda said being confident of how much rain was forecast – and when – would also save time when running the livestock side of his business. He said this was particularly important at shearing time.

“If the shearers turn out on Monday and they have wet sheep, they can’t shear. You can’t press wet wool. It’s like putting your clothes on just after they’ve come out of the washing machine - they’re clean, but you’re not going to want to wear them,” he said.

“If we’re watching the radar on a Friday and can see that rain is coming, we might decide to shed the sheep on Saturday night, let them out on Sunday between the rain and put them back in again.”

Dr Garry O'Leary | Pilot and agronomist

GARRY O'Leary is an agricultural research agronomist by profession, but his passion is aviation - he has been flying for 52 years. He has lived in the Wimmera since 1985, moving to the region after working at the Victorian agriculture department's state research farm at Werribee.

His association with a campaign to build a weather radar in the Wimmera began in the 1990s.

"Before the '90s we were using the radar information from the Bureau of Meteorology, but had to ring them up and ask them for information. We were particularly interested in where rain was falling, or where it was likely to fall in the next few hours when we were planning flights. You had to ring up the Aviation Met Office and ask briefing officers to tell you what you might expect," he said.

"Then a change of government occurred. Ros Kelly, the minister in Canberra, made the bureau make it available to the public over the internet so people would see where the rain was falling. That was useful, but it had lots of errors."



Garry O'Leary with Horsham Aero Club's Cessna 182 plane at Horsham Airport. The airfield hosts three flying clubs, several private businesses and a maintenance facility.

He said a weather radar at Rainbow, active since March 2020, gave pilots the information they needed.

"It has now filled a big hole. Between Mildura and Mt Gambier, we had this gap and it often showed very little rain when we knew it was pouring," he said.

“You can now fly in confidence – even in quite marginal weather – knowing you have good margins to arrive safely in Mildura. This is especially important if you’re flying on instrument flights – they have much more stringent requirements but you’re more likely to get to where you’re going.”

Dr O’Leary defined “marginal weather” as fog, ice and severe turbulence.

“There are dangerous flying conditions that will kill you,” he said. “The radar gives a degree of safety about inclement weather. If you’ve ever been in a small aircraft in bad weather, you will learn to respect it very quickly.”

He said using the Rainbow radar’s data to make decisions could help pilots save money.

“It can cost \$300 an hour to hire a plane – that’s \$600 to fly to Mildura, for example. That’s why you have to monitor the weather very carefully to see if it will be marginal,” he said.

Based at Horsham’s Grains Innovation Park, Dr O’Leary specialises in computer modelling in his work as an agronomist.

“The radar tells where it’s likely to rain, and likely not to – and that affects where we choose to sow our crops,” he said.

“We have six new sites we’ve established – from Yarrawonga to down south near Geelong and Ararat, up to just north of Nhill and Birchip. We are looking at the advantages of cropping mixtures and intercropping (growing two different crop species together in the one paddock, such as barley and canola).

“The radar would help researchers when they’re doing critical operations like spraying when they want periods where it isn’t raining.

“Farmers have been pressing for this radar for 20-odd years. Everyone knew the radar maps we were getting were not accurate – and the bureau knew that, too, because they know the limitations of the physics of a radar signal.

“It’s terrific we now have this part of the world covered. It’s not entirely perfect, but it’s much better than what was there before.”

John Bish | Unit commander, State Emergency Service Warracknabeal branch

VOLUNTEERS at the Warracknabeal State Emergency Service unit respond to incidents as far north as Rainbow and Hopetoun and as far south as Rupanyup – a radius of about 60 kilometres in either direction. It can take them more than half-an-hour to reach incidents in some cases.

Mr Bish said the number of SES units was fewer, and the area covered by those units was greater in the state’s north-west compared to other areas of Victoria.

“You get a lot of storm fronts coming from that north-west area - it will either come across Rainbow or Dimboola,” he said. “When we relied on weather radars from Mt Gambier and Mildura, they didn’t work in the middle – it was just a guess. Now, through the Rainbow radar, you can see quite clearly every storm cell, every activity coming over and you can work out straight away whether it’s going to hit us or elsewhere.

“We now have extra time to prepare. We have at least 30 minutes’ headstart on exactly what and where the storm will hit. It means we can be in a state of readiness – we can make sure we have manpower on the ground ready to respond here at the unit; and once we see where it is heading, we can start dispatching people for the moment we get any callouts. Our job is to respond to any emergency situation as quickly as we can.”

Mr Bish said of weather events, wind and heavy rain often caused the most damage in this region.

“You can certainly get more cyclonic storm cells building over the flat country, which can become very unpredictable as to where it’s going to go and what it’s going to do,” he said.

Mr Bish is one of 12 active members of Warracknabeal’s State Emergency Service unit, and has responded to major events such as the 2011 floods during his 20 years of service. He has served as unit controller for five years, and teaches at Warracknabeal Secondary College as his day job.



The weather radar helps John Bish and the Warracknabeal State Emergency Service unit anticipate and respond to weather-related emergencies.

Tim Pohlner | Agronomist, AGRivision Consultants

TIM Pohlner works with AGRivision Consultants – a group of agronomic consultants, researchers and agronomists helping growers make good decisions.

Mr Pohlner is based in Horsham. He said timely and accurate weather forecasts made considerable differences to decision-making on-farm – and the Wimmera Weather Radar at Rainbow, active since March 2020, had made a “huge difference” to his client base.

“They have been able to farm a lot more efficiently. Being able to see when rain is coming, and make timely decisions to get out in front of it, has been brilliant,” Mr Pohlner said.

“As far as herbicide application, there is definitely going to be a huge saving in wastage. If you get rain straight on top of sprayed herbicide, it potentially doesn’t work. The plant needs time for the herbicide to move in through the leaf – a lot of herbicides need one to four hours – so if it gets washed off, it potentially doesn’t get the time to do that.



Tim Pohlner has recognised benefits to his clients and his own ventures since the Rainbow radar became active.

“In the past we would look at the radar and didn’t have confidence because it really wasn’t showing whether rain was coming or not. There were times when guys were spraying and showers were coming over.”

Mr Pohlner's family owns a farm in the Gerang Gerung and Kiata area. He has also recognised benefits which he can attribute to the radar there.

“I was doing a fair bit of spraying this year because my dad got sick around cropping time. One time, I was out spraying in front of the airseeder, I looked at the radar and saw showers were coming through, so I stopped for a bit to wait for the rain to stop,” he said.

“That is worth a fair bit of money to us – we spread quite a few thousand dollars of product out there.

“But we also would have lost weed control, because they are pre-emergents we’re putting out, and flows through to loss of yield for that paddock. If you don’t get crop protection to work properly, the paddocks fill up with weeds and we lose yield ultimately.”

Rob Launder | Agronomist, PB Seeds

MAKING informed decisions year-round is key to the best possible outcomes.

Rob Launder – an agronomist at PB Seeds based at Kalkee, north of Horsham – said decision making during the first hay and harvest season, with access to real-time information from the Wimmera Weather Radar at Rainbow, would inform decisions at critical stages.

“Looking at what size the fronts are, coming through from South Australia, also helps us around the cutting of hay, and also looking at the movement of hay in and out of paddocks,” Mr Launder said.

“It will also help with fungicide application. For certain crops, it’s important to get fungicide on them before rain.

“Some of these fungicides are quite costly, so to get the best value, we need to have it on before a rain event comes across and stop the splash of the spores on to the next leaf. That is how funguses get spread onto crops.

“It’s nice to know how big the rain event is to understand if we need to apply fungicide or hold off.”



Rob Launder says the benefits of the weather radar at Rainbow will be felt year-round.

Other testimonies:

Phil Mills is a farmer based at Kalkee, north of Horsham, with his brother, father and mother. He said he didn’t use the radar as much as rainfall tallies on websites such as Elders.

“I didn’t have to rely on colours shown on the radar. I had a digital readout of what rain had actually fallen, which is more useful,” he said. “Actual tallies spread over the north and west of Victoria and South Australia gives you an exact reading of what’s fallen in the last rain event - that’s what I look at more.”

Craig O’Connor, a director of Horsham-based commercial building firm Locks Constructions, said:

“It is useful to have more accurate information on recent and upcoming rainfall when it comes to pouring concrete. We do this about once a month.”

Financial analysis

Prudence Cook | Nine Creeks Consulting

Since the publication of the Business Case for Improved Weather Services in 2015, additional information about the impacts of climate change and climate variability have become available, which would indicate that the benefits outlined in the business case may have been understated:

The publication of regional Climate Guides by the Bureau of Meteorology indicates that:

- Annual rainfall in the Wimmera has fallen by nine per cent since 1990 and has particularly decreased during autumn and spring – both critical periods for the broadacre cropping sector
- Lower, less reliable rainfall in autumn potentially reduces yield due to poor establishment and emergence rates
- Lower, less reliable rainfall in spring can impact on grain filling potentially reducing yield and crop quality.
- Summer rainfall has become increasingly unreliable, and the number of days over 40 degrees has increased, potentially increasing the frequency and scale of bushfire emergencies.

The Victoria's Climate Science Report, published by the Victorian Department of Environment, Land, Water and Planning (DELWP) forecasts a further 12 per cent reduction in rainfall between now and 2050 as well as:

- Double the number of very hot days
- Longer fire seasons, with an up to 60 per cent increase in very high fire danger days
- More intense downpours

A study by the World Weather Attribution Consortium indicates that the risk of bushfires in Australia is likely to increase by 30 per cent due to hot, dry weather related to global warming.

In light of this new information, the ability of farmers to make decisions based on 'within day' weather information will become more critical as they increase their focus on timeliness to a) make the most of rainfall events and b) further reduce potential losses related to the failure of fertiliser and pesticide applications.

- Reduced rainfall throughout the year has the potential to increase the failure rate of fertiliser applications, placing additional pressure on farmers to capitalise on rainfall events and further increasing the value of 'within day' weather forecasts.

- While reduced rainfall may reduce the failure rate for chemical applications, the financial impact of those failures on tightening bottom lines is likely to increase proportion of total farm income, again placing pressure on farmers to further reduce failure rates.

The increased risk of very-high fire danger days and extreme rainfall events is also likely to significantly increase the importance to emergency services of granular, localised weather information. Within day weather information will enable emergency services to rapidly identify potential or emerging situations (e.g. dry lightning strikes, potential flash flooding events) and support the pre or forward deployment of emergency services personnel and assets (e.g. fire-fighting aircraft and appliances etc.).

The scope and scale of the 2019-20 bushfire season also highlighted the increased need for proactive hazard reduction efforts in areas of local and national significance covered by the new radar including the Big and Little Desert national parks, the Wail State Forest, and to a lesser extent the Grampians National Park. The ability to target hazard reduction burns, based on recent and historical rainfall, will become increasingly important as resources become increasingly stretched due to the increasing frequency, scope and scale of bushfire emergencies.

However, it should also be noted that the on-farm benefits of ‘within day’ weather information may have been somewhat overstated as part of the business case. The figures quoted within the business case seem to rely on self-reporting by farmers, based on a loose definition of ‘better rainfall data’ and assumptions of the reduction in failure rates for fertiliser and chemical application. Ideally, future business cases should seek to quantify both of these points, in particular, given the new radar provides at best two to three hours of additional information (to a farmer on the extreme distant edge of coverage) the definition of ‘within day’ should be further defined to understand the useful timeframes.

Matthew Sparke | Sparke Agricultural and Associates

Rainfall and timing of rainfall are still high on the priority list for the Wimmera Southern Mallee.

With a forecast, we know it may rain but not exactly when or where. The radar installation and operation gives us that in real time.

The activities of seeding, fertiliser application and spraying are still all weather dependent to varying degrees. But as in the application essential to the operations outlines in the case.

Probably after five years and new herbicides on the market, increased resistance levels in weeds, and newer more costly herbicides dependent on rainfall, and/or needing a certain rain fast period the sensitivity of that rain predictions may be even higher.

Also, I think more nitrogen is being applied to crops, with higher yielding varieties being released onto the market. This would make the nitrogen application productivity case also more rewarding as the higher rates are costing more and they may also be looking for late application windows.

This would also tie into existing or new products put out from the BOM, around seven-, 14- and 28-day forecasts, and the longer-term seasonal outlooks.

The increasing use of on farm rain gauges/weather stations, also ties in with the radar business case, as do soil moisture probes, in assessing yield potential by paddocks or farm, and the risk associated with crop rotations, additional nitrogen or sulphur applications, and or marketing decisions.

I am happy with the framework layout of the business case.

The business proposals I think have become more sensitive as discussed above.

Social media commentary

The Rainbow radar became active on March 31, 2020 and Wimmera Southern Mallee residents waited just 24 hours to hear the pitter patter of rain.

On April 1, people took to Twitter to share their delight in a rain event they could see on a radar, and simultaneously, see with their own eyes while hearing it fall on the roof.

Bureau of Meteorology records show in the 24 hours to 9am on April 2, an average 9mm was recorded across the region.

“Until now, we were blind and unable to make nimble decisions when it came to rain, as were our farmers. Which meant nothing to us yesterday when it was sunny. But today, things got exciting,” read the Murra Warra Wind Farm’s Tweet.

Many farmers remarked they were watching the radar closely as the rain came through.

Tracey Dart at Warracknabeal wrote she had recorded 13mm at her property in five minutes and in response, others questioned whether it was wetter than usual, or simply more accurate with the radar.

“Now the system is moving slowly on the east and I’m envious. Radar watching, mixed emotions,” wrote Tracey.

Narelle Drage at Lah responded: “(Husband) Dave has spent a bit too much time on the BOM website. He’s loving the data it gives you.”

Australian climatologist Andrew Watkins noted the first rain the radar detected and he would “drink to that”; while Jamie Duncan at the *Herald Sun* wrote he had “been back and forth to it all day”.

Paul Yole, a Victorian representative of the Australian Severe Weather Association, wrote: “Loving the fact

BCG @BCG_Birchip · Apr 2
What did you tip out this morning?

BCG got 21mm at the Main Trial Site at Curyo.

Reports so far:
Birchip: 22mm
Narraport: 18mm
Wycheproof: 23mm



7 2 17

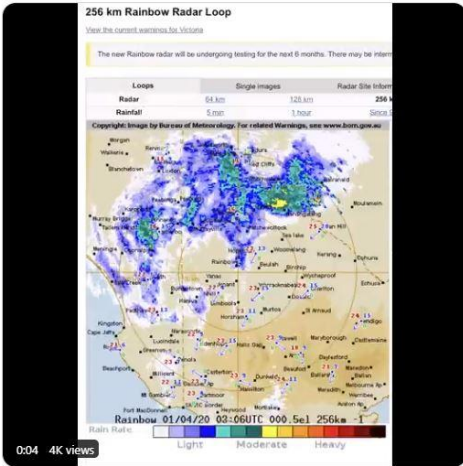
Ben Hunt @funky_farmer
Replying to @BCG_Birchip

7mm in Bordertown SA. That new radar @BOM_SA @BOM_Vic @bruce_de_bruce at #rainbow working a bloody treat. Order rain more please!

9:33 AM · Apr 2, 2020 · Twitter for Android

Jane Bunn @JaneBunn · Apr 1
Enjoying watching the rain come down through the Wimmera Mallee on the new radar in Rainbow.

(PS rain begins in Melbourne late tonight - see hour by hour details here janebunn.net/your-forecast)



11 6 75

Paul Yole @PaulYole
Replying to @JaneBunn

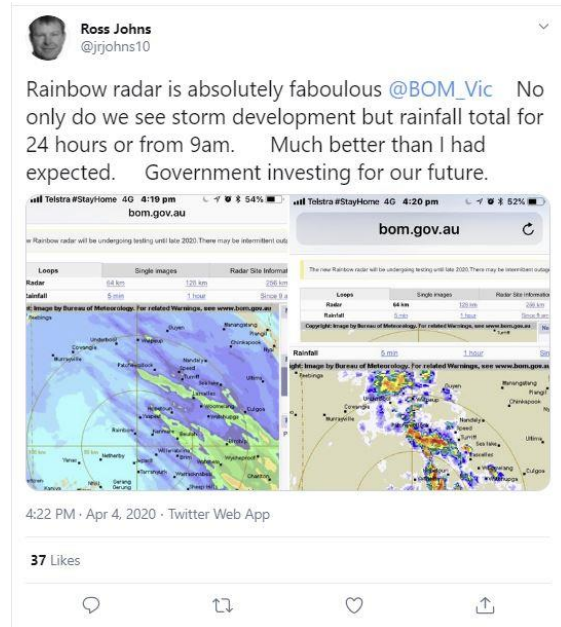
Loving the fact that I'm no longer in a black spot out here, and loving the 3D volumetric scans... Now I just need some storms to really try it out :)

4:18 PM · Apr 1, 2020 · Twitter Web App

that I'm no longer in a blackspot out here and loving the 3D volumetric scans... Now I just need some storms to really try it out."

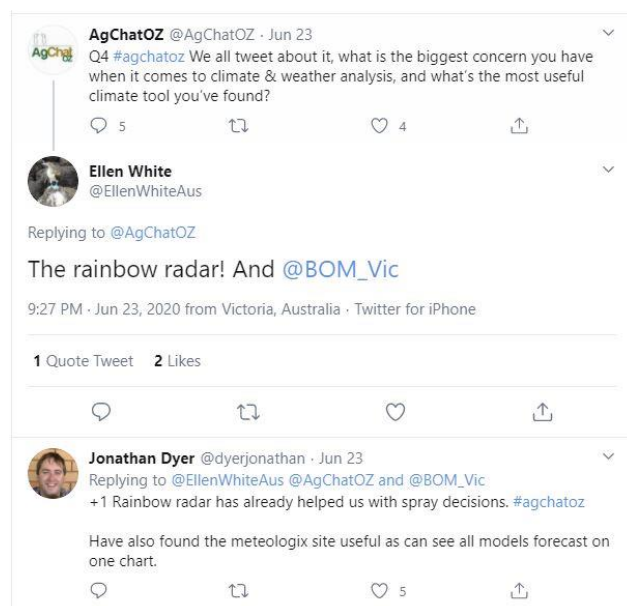
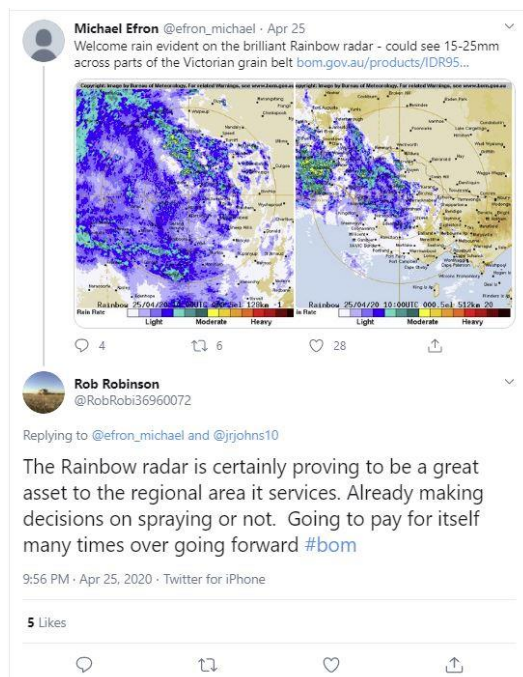
Two days later, Stawell received a 19mm drenching. Kyle Pearse Tweeted his Donald property received 45mm in an hour – “good enough for an autumn break” – while David Manifold, also at Donald, shared he had received 25mm with more on the way.

“If this is what happens when they turn on the Rainbow radar, maybe we should have had it years ago,” David wrote. “Since they turned on (the radar) we’re looking at the highest ever rainfall amount for April. If it keeps raining this much in May, we might have to get them to turn it off so we can put the crop in.”



Rain totals for April:	Rain totals for May:	Rain totals for June:
Horsham 54.8mm	Horsham 40.6mm	Horsham 26.4mm
Longerenong 51mm	Longerenong 41.8mm	Longerenong 20mm
Nhill 51mm	Nhill 36.6mm	Nhill 39mm
Stawell 58.8mm	Stawell 43.2mm	Stawell 34.2mm
Edenhope 52.2mm	Edenhope 69.2mm	Edenhope 55.8mm

Source: Bureau of Meteorology



Anthony Judd @AnthonyJudd_4 · May 8
 The first stage of Lake Tyrrell works are starting to take shape, despite some pretty wet conditions. The jetty and boardwalks look amazing! @BulokeShire #Tyrrell #BuildingBetterBuloke



3 replies, 16 retweets, 52 likes

Ellen White @EllenWhiteAus · May 8
 No wonder it's a popular destination.

Sir Dave Lennon @Davelennonabc · May 8
 ready to go when times change and big enough to take a decent number of tourists and stick to social distancing the perfect spot for a getaway...

Ellen White @EllenWhiteAus · May 8
 See you there at a 1.5m distance Dave?

Sir Dave Lennon @Davelennonabc

Replying to @EllenWhiteAus @AnthonyJudd_4 and @BulokeShire
 currently doing 1.5km social distancing and frankly quite enjoying it.

Am i right in thinking the season is off to a good start where you are.. i reckon this Rainbow radar station is attracting rain... am thinking of starting a "whicker man" type cult around it... 🤪

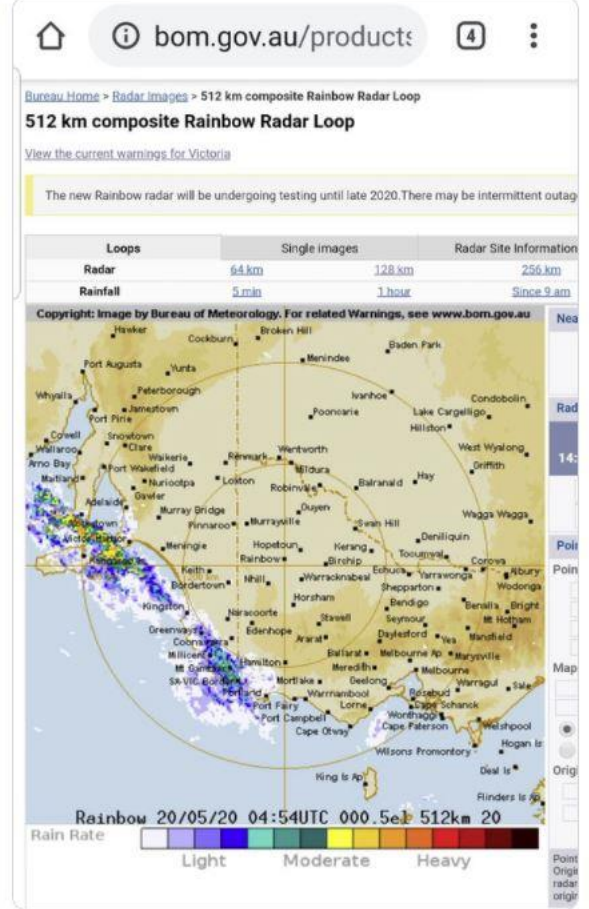
10:16 AM · May 8, 2020 · TweetDeck

1 Like

Ellen White @EllenWhiteAus · May 8
 Replying to @Davelennonabc @AnthonyJudd_4 and @BulokeShire
 The rainbow radar has made a huge difference, bringing lots of good rain. 🌧️🌧️ 168ml to the end of April. Last year was zero at same time. Happy farmers around here.

growgoodgrain @SFindlaytickner

So good to have a radar we can trust so @YellowGrain can put out that extra load of urea before the rain! #rainbowradar @bom @The_WDA #plant2020



3:57 PM · May 20, 2020 from Horsham, Victoria · Twitter for Android