

Open Access Week

Open access in research practice: the CeRDI experience

A/Prof Peter Dahlhaus, Principal Research Fellow

Dr Megan Wong, Research Associate

Dr Nathan Robinson, Senior Research Fellow

Centre for eResearch and Digital innovation (CeRDI)

Wednesday 21 October 2020 – Online Research Seminar



Research
expertise

X



Technological
expertise

=



Real world
applications

SOIL CRC
Performance through collaboration

foodagility

CRC TIME

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

ardc
australian research data commons

RDA
RESEARCH DATA ALLIANCE

NSW GOVERNMENT
Department of Primary Industries

Australian Government
Bureau of Meteorology

Manaaki Whenua
Landcare Research

OGC®
Making location count.

CORANGAMITE CMA

SFS

Glenelg Hopkins
CMA

FIAL
Food Innovation Australia™

precision
agriculture

DATA 61

CSIRO

Charles Sturt University

THE UNIVERSITY OF ADELAIDE

meat & LIVESTOCK AUSTRALIA

RiverinePlains

LIEBE

AIR EP
Ag Innovation & Research
Eyre Peninsula

Ag Excellence Alliance

UNIVERSITY OF SOUTHERN QUEENSLAND

UNIVERSITY OF TASMANIA AUSTRALIA

MARCUS OLDHAM COLLEGE

CC university AUSTRALIA

BCG
SHARED SOLUTIONS

Burdekin Productivity Services

CW FS
Central West Farming Systems Ltd

wantfa

MFMG
www.mackillopgroup.com.au

THE UNIVERSITY OF SYDNEY

Canada
Natural Resources Canada

lne
University of New England

Government of South Australia
Primary Industries and Regions SA

AGRICULTURE VICTORIA

WEST MIDLANDS GROUP
our knowledge hub

HCPSL
Herbert Cane Productivity Services Ltd

Mallee Sustainable Farming

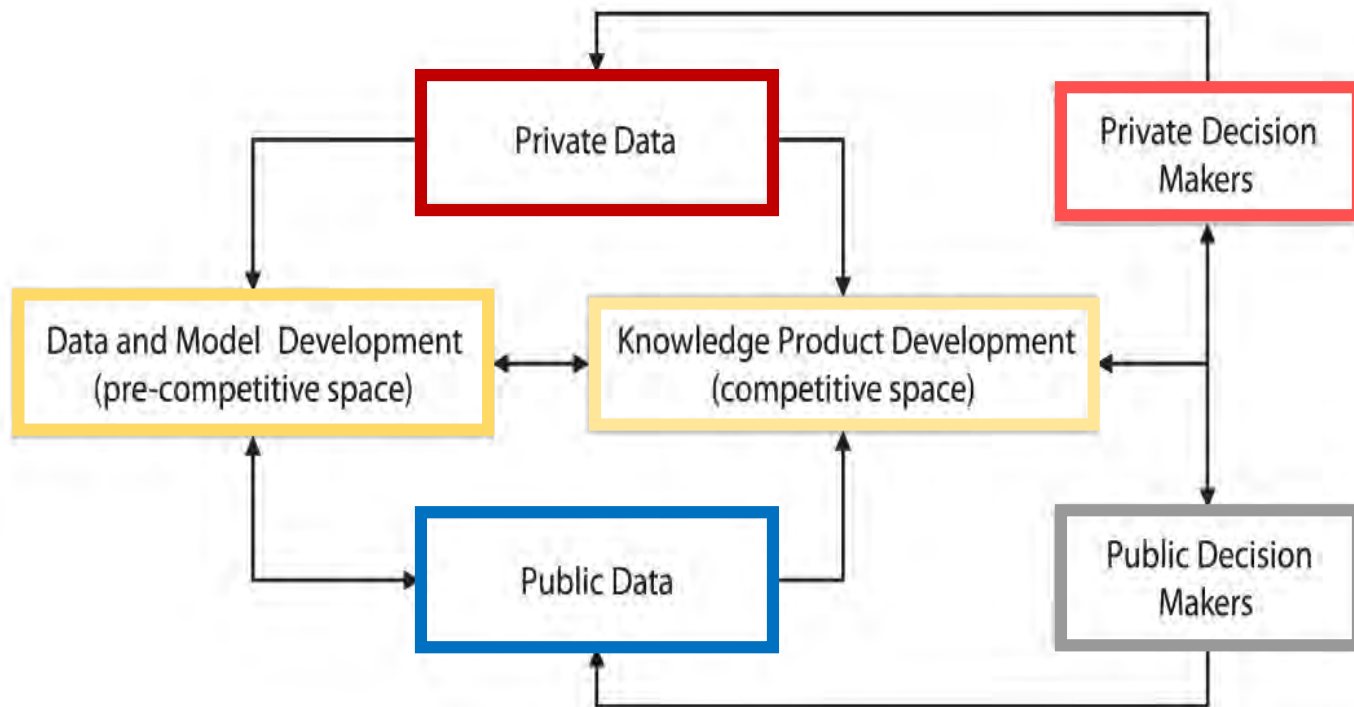
GODAN
Global Open Data
for Agriculture & Nutrition

Spatial data portals - Data federation - Interoperability

30+ applications across a wide range of domains

Open source, open standards architecture

Data contributed from public and private sectors



www.cerdi.edu.au/FedUniSpatial

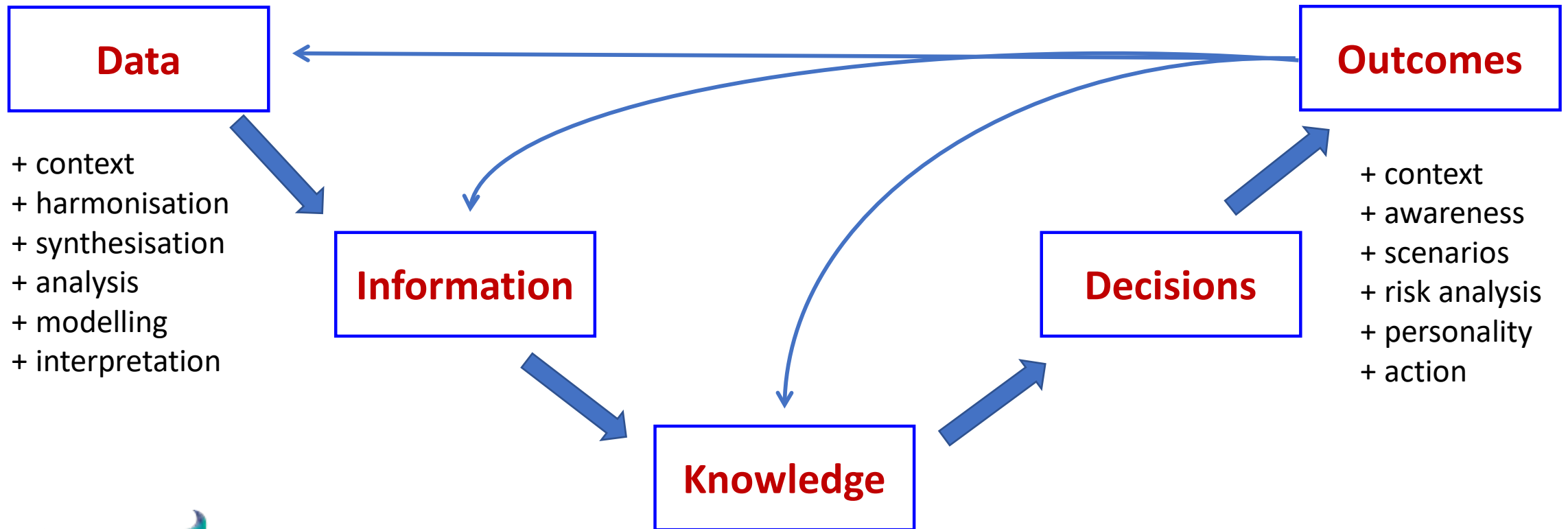
FedUni Spatial

Our spatial research showcases the diverse range of projects that FedUni is supporting through the team at CeRDI. Projects are at various stages of their evolution but share common goals to inform 'big picture' understanding and enhance decision making, create greater efficiencies in communication, increase the quality of information and support policy formulation and evaluation.

- Groundwater**
Visualising Victoria's Groundwater provides a central site for accessing Victoria's groundwater information. VVG consolidates data from multiple authoritative sources, includes 2D and 3D visualisations, hydrogeological models and historical records and maps.
[Find out more](#)
- Agriculture**
Online Farm Trials is an exciting initiative that brings nationwide grains research information directly to the grower, agronomist, researcher and the wider grain industry through innovative online technology.
[Find out more](#)
- Sports Participation**
Sport and Recreation Spatial integrates data about sport and recreation participation, sport and recreation facilities, population demographics and population health from multiple data custodians.
[Find out more](#)
- Regional Planning**
UNESCO's Historic Urban Landscapes (HUL) approach is providing Ballarat with a new approach to dealing with change. The goals is help shape our future while acknowledging what is distinctive and valued about our past and present.
[Find out more](#)
- Catchment Knowledge**
The Corangamite Knowledge
- Soil Health**
The Corangamite Soil Health
- NRM Planning**
The NRM Planning Portal enables
- Climate Change**
The South West Climate

Better Data for Better Decisions Constellation: The challenge

How to harness all the data, information, tools and knowledge to power better decision making?



CeRDI - Research 'pillars'

Discoveries in the data

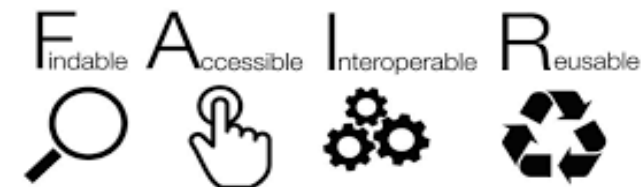
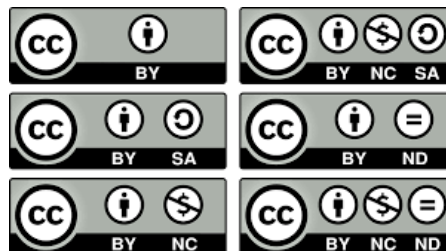
Federating multi-disciplinary and cross-disciplinary data can lead to new research discoveries

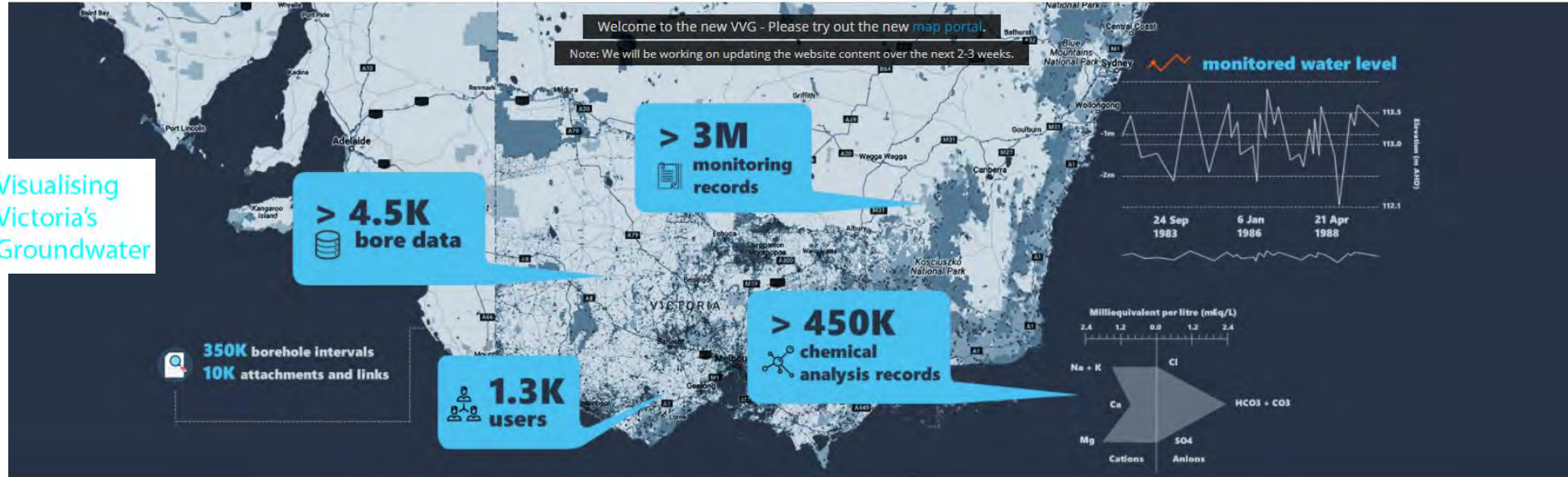
Innovations in technologies

International implementations of Semantic Web technologies

Longitudinal societal impact research

Does making data FAIR change industry/government/community practice?





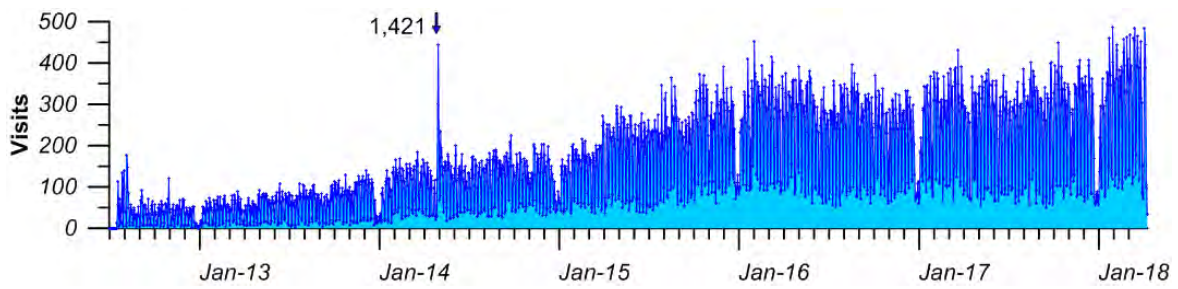
www.vvg.org.au

Dahlhaus et al. 2016
<https://doi.org/10.2166/hydro.2015.169>

Map portal
 An interoperative web-GIS that federates groundwater data from disparate sources to

E-Library
 Search and access over 1,589 groundwater and other related resources: reports, fact

Data Catalogue
 Open access to the datasets featured in VVG. You can use it however you like to build apps



The VVG portal is frequently used by a wide cross-section of society



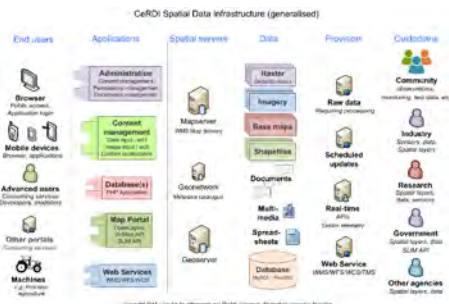
Research challenges



Value Proposition – clear use cases, obvious rewards for data providers and consumers, new research discoveries.



Social Architecture –Governance framework, data stewardship, plain language rules, organisation interoperability, rewarding, effortless and no disadvantage to sharing.



Technical Architecture – largely resolved but not widely adopted by data custodians, emerging changes such as Linked Data.

Open access and the FAIR Guiding Principles

Findable, Accessible, Interoperable and Reusable

- Governments around the world have moved to Open Data
- Research funders increasingly require data to be published and available
- Many research journals want the data to be made available
- FAIR data ≠ Open data

www.nature.com/scientificdata

SCIENTIFIC DATA

OPEN
SUBJECT CATEGORIES
» Research data
» Publication characteristics

Comment: The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson *et al.*[#]

Received: 10 December 2015
Accepted: 12 February 2016
Published: 15 March 2016

There is an urgent need to improve the infrastructure supporting the reuse of scholarly data. A diverse set of stakeholders—representing academia, industry, funding agencies, and scholarly publishers—have come together to design and jointly endorse a concise and measurable set of principles that we refer to as the FAIR Data Principles. The intent is that these may act as a guideline for those wishing to enhance the reusability of their data holdings. Distinct from peer initiatives that focus on the human scholar, the FAIR Principles put specific emphasis on enhancing the ability of machines to automatically

Value proposition – FAIR data

Current research practice represents an investment that disappears over time

Multiple benefits in making research data FAIR

- Data, information and knowledge is not lost, forgotten, ignored
- Verification of research outcomes
- Maximising potential for future research
- Enhancing societal outcomes



Value proposition – FAIR data

“Data is the new oil”

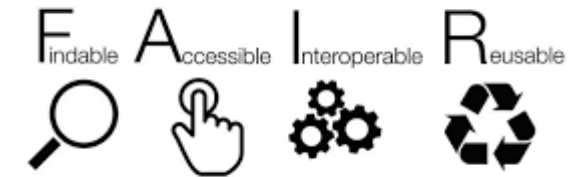
Basis for longitudinal research studies

- Decision support, AI and machine learning
- New discoveries
- Real world engagement and impact

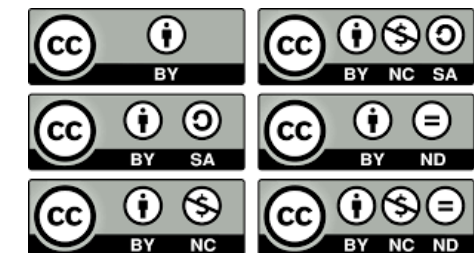


Key elements to data management and use

- Governance and stewardship
- Trust – relationships and repositories
- Certification – standards, vocabularies and core trust seal
- Licensing and ownership
- Education



An approach to assist data providers and consumers to have their data assessed and aligned for “FAIRness”



International data interoperability standards

Groundwater Interoperability Experiment 2 (GW2IE) 2012 - 2016

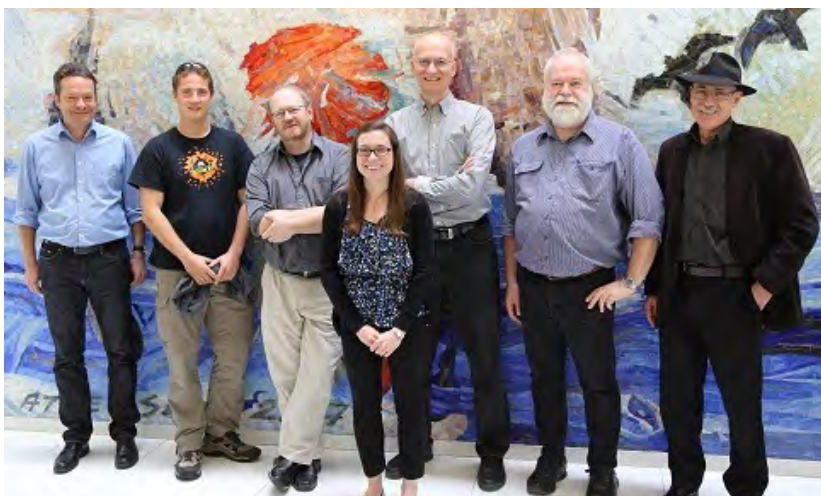
OGC WaterML2: Part 4 – GroundWaterML2 (GWML2) 2016 -

World Meteorological Organisation (WMO) adoption of GWML2 is pending

Soil Data Interoperability Experiment (Soil IE) 2014 – 2016

Second Environmental Linked Features Interoperability Experiment (SELFIE) 2018 - 20

Mostly collaborations of participants from organisations in European Union, North America & Oceania



GW2IE meeting, Vienna, May 2014



Interest Group on Agricultural Data (IGAD) meeting, Paris, Sept. 2015

Visualising Australasia's Soils

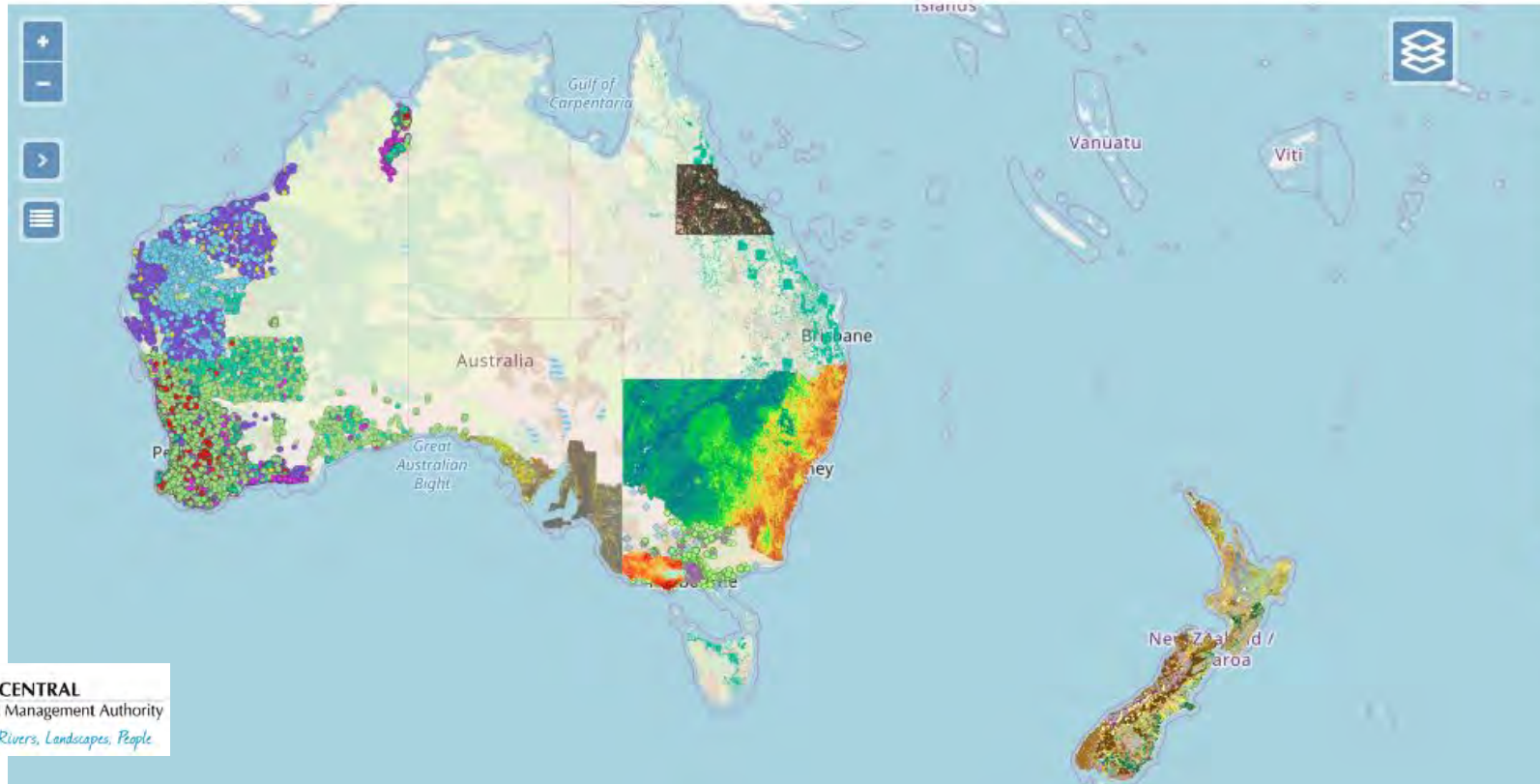
A soil data federation of private and public sector data

<https://data.soilcra.com.au/>



Visualising Australasia's Soils

Search layers Search [Save] [Print] Legend Tools Login



National
New South Wales
New Zealand
Queensland
South Australia
Tasmania
Victoria
Western Australia

Active Layer
Soil landscape mapping points (WA)
About this layer
Transparency [Slider]
Query mode ON
Filters [Gear]

+ Add layer

Value propositions

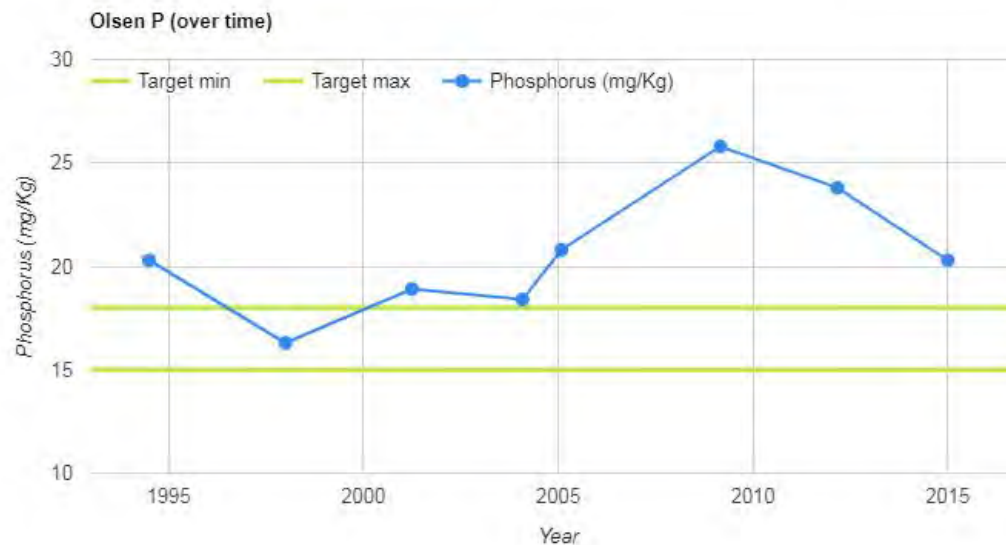
- ✓ Online, free, trusted, supported, independent, spatial data management system
- ✓ Trends over time, benchmarking against local areas
- ✓ Monitoring, identify gaps, report to investors, evidential base for investment or social licence
- ✓ Services to group members, education, alerts, tools and calculators, decision support, combined data

Site ID	Code	Client	Number of samples	
152	Knewleave	Middle	8	View soil tests for this site

Scale = 1 : 14K 144.66172, -38.17893 EPSG:3857 Developed by CeRD

Key properties - Temporal Charts

Olsen P Colwell P KCl Sulphur Colwell K pH Water pH CaCl2 Salinity as EC Organic Carbon



Key properties - Temporal Charts

Olsen P Colwell P KCl Sulphur Colwell K pH Water pH CaCl2 Salinity as EC Organic Carbon

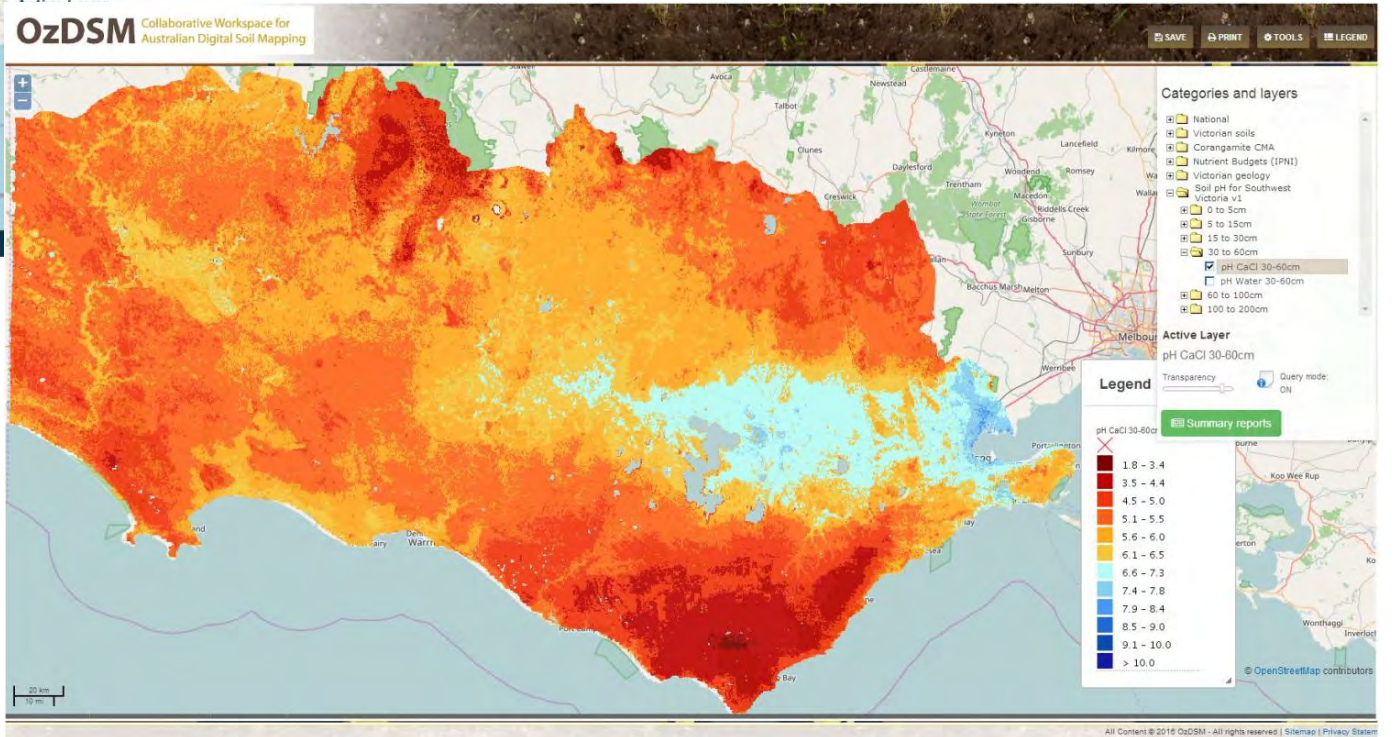
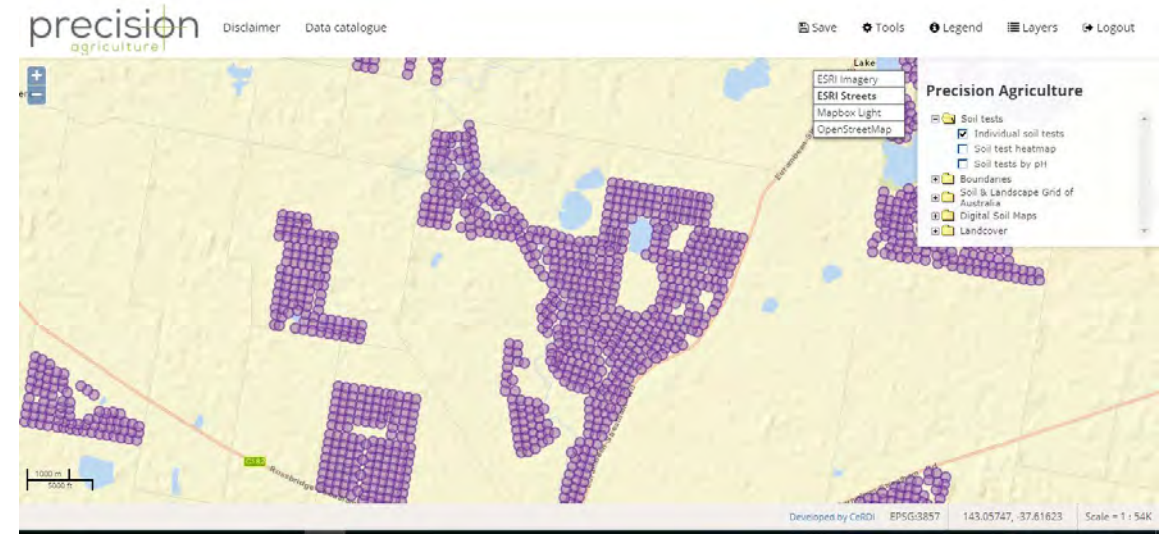
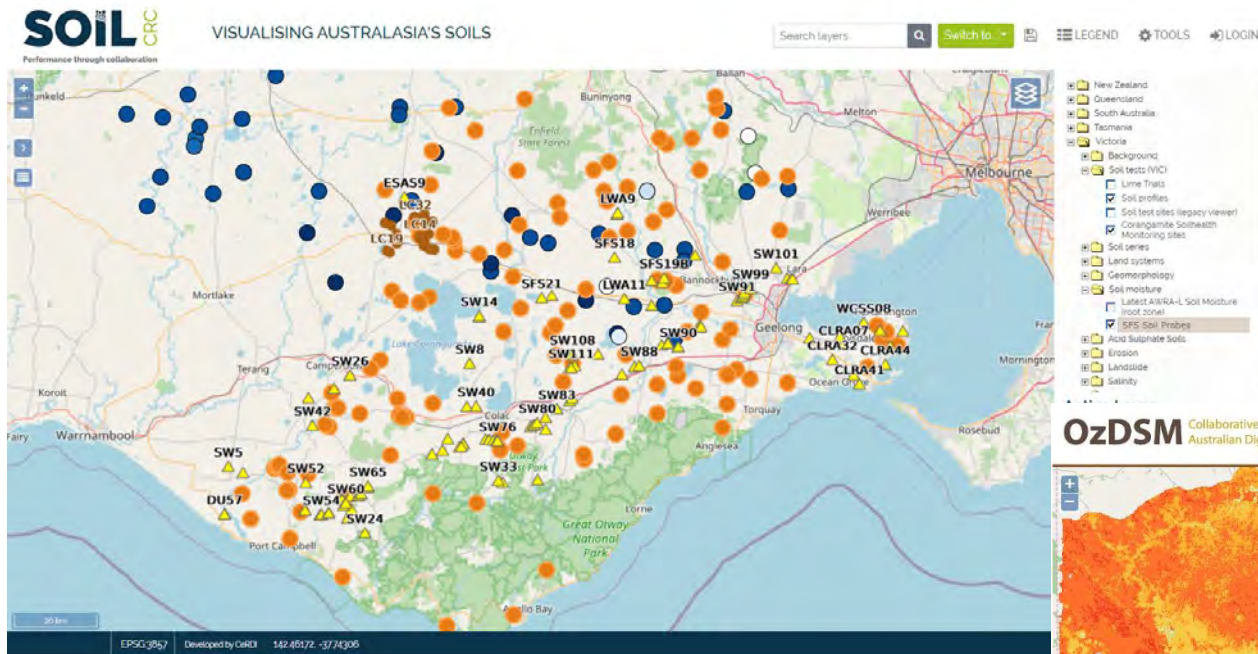


Data custodian concerns

- data sharing - privacy, security, trust, context
- resources - time, skills, people
- appropriate respect for growers, project managers, and local researchers for time, effort and expertise that underpins the data they provide



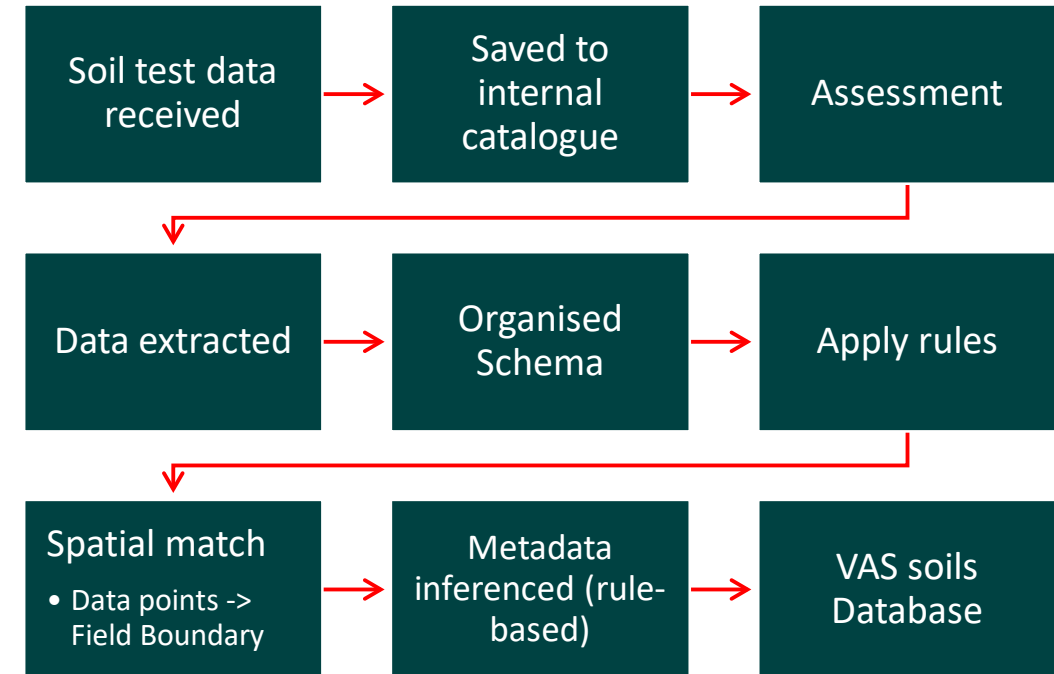
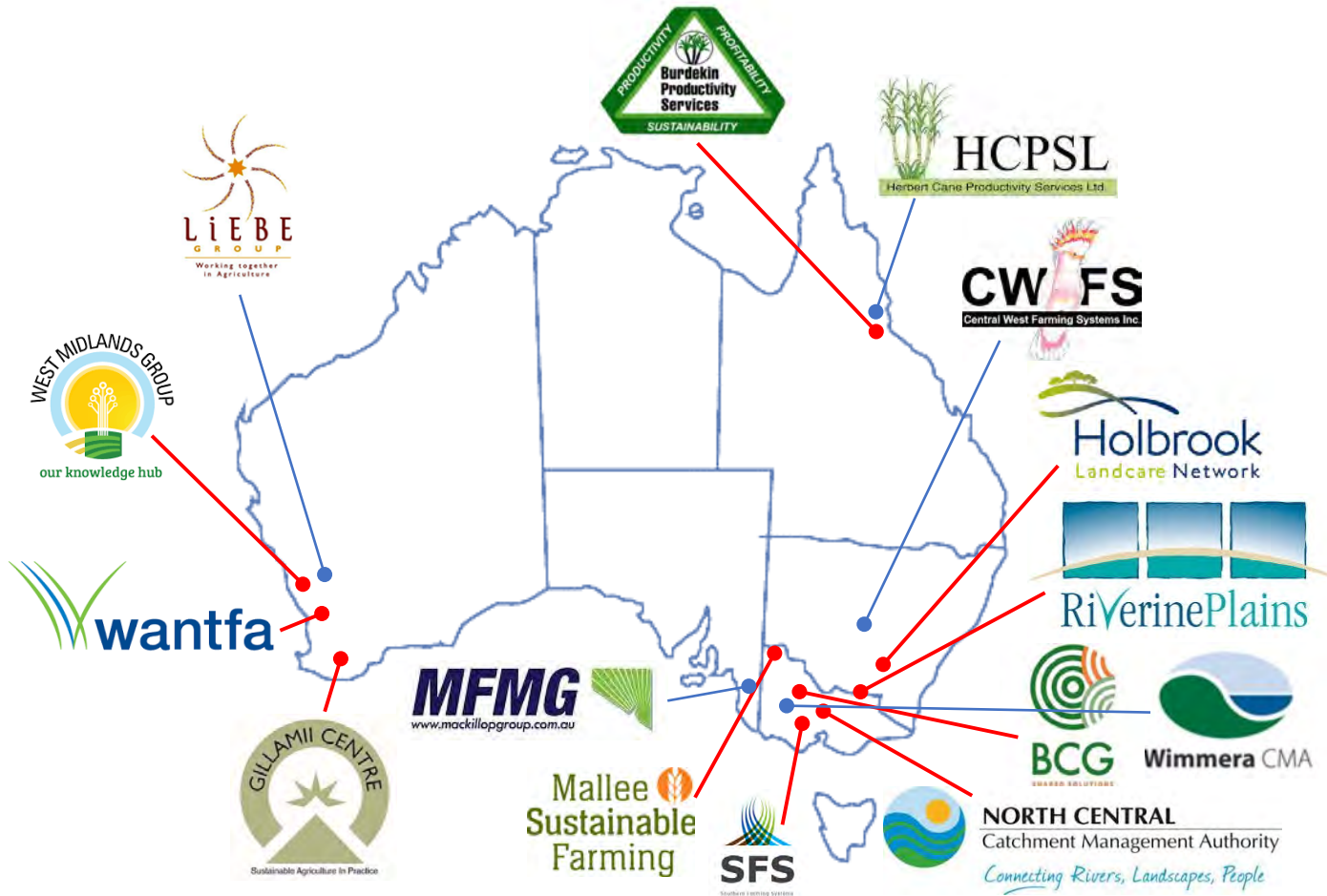
Data access controls



- ✓ Data access controls to allow visibility to the public, club or individual
- ✓ Can be anonymised to gridded data sets
- ✓ Embargoes for data sets, or fuzzy locations

Private sector data

All project partners we visited have committed to some test data



Public sector data

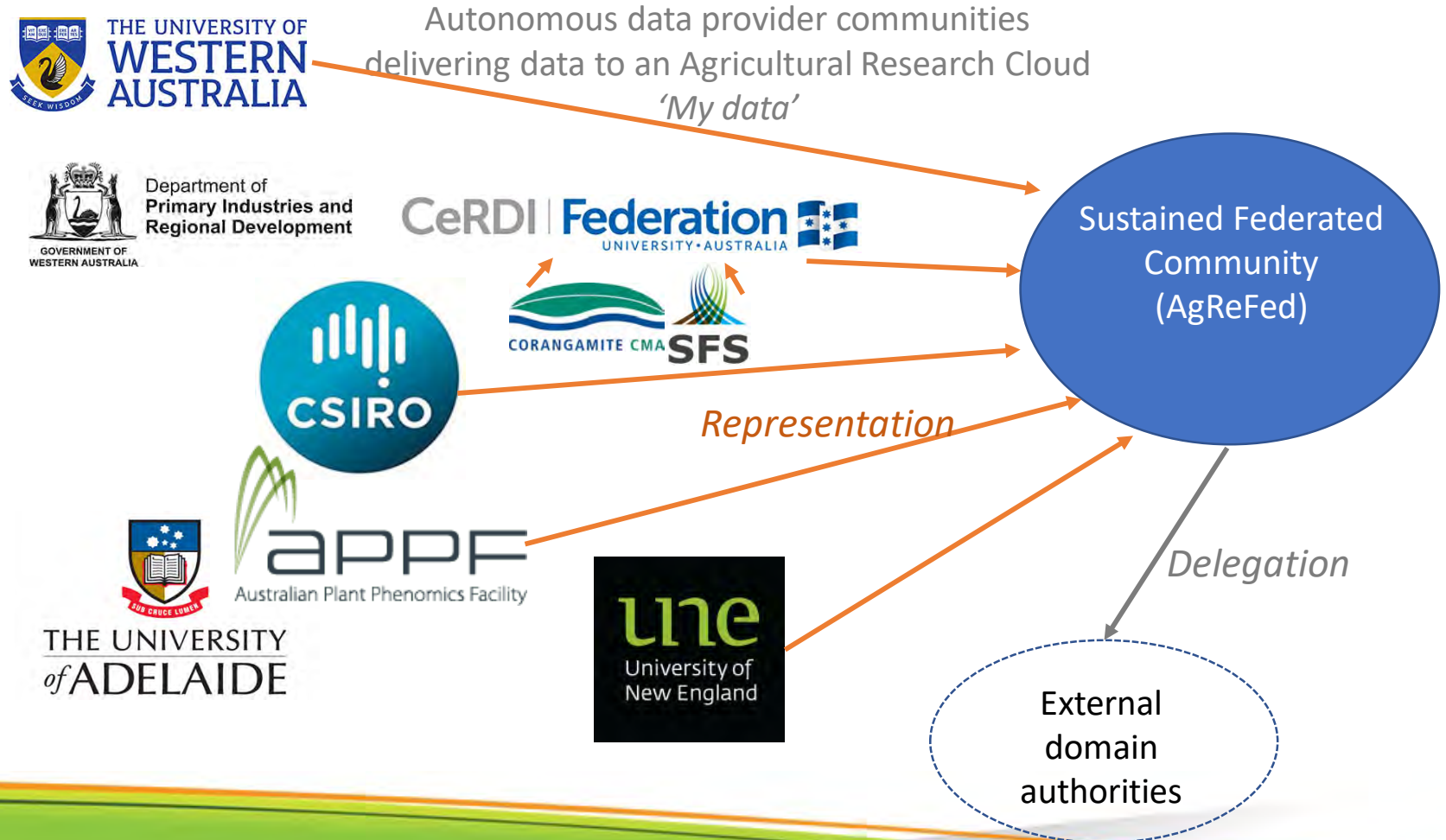
- More than 24 thousand data sets are listed in open data catalogues with 'soil' as keyword
- Of these, 2166 are currently being assessed for inclusion in the VAS portal (point, polygon and raster data)
- Most are legacy data sets

Analysis: Chris Bahlo, 18 May 2020

Source	Scope	Home URL	datasets
Australian Government	National	data.gov.au	18351
Research Data Australia	National	researchdata.andcs.org.au	2890
National Library of Australia	National	www.nla.gov.au	634
WA Government	WA	data.wa.gov.au	530
TERN	National	tern.org.au	453
NSW SEED	NSW	datasets.seed.nsw.gov.au	311
Google Datasets	National	toolbox.google.com/datasetsearch	255
Queensland Spatial	QLD	qldspatial.information.qld.gov.au	254
NSW Government	NSW	data.nsw.gov.au	214
CSIRO	National	data.csiro.au	190
NT Government	NT	data.nt.gov.au	157
Geoscience Australia	National	services.ga.gov.au	114
SA Government	SA	data.sa.gov.au	103
Victorian Spatial Datamart	VIC	services.land.vic.gov.au	74
Tasmanian Government (The List)	TAS	www.thelist.tas.gov.au	73
Victorian Government	VIC	data.vic.gov.au	33
Queensland Government	QLD	www.data.qld.gov.au	28
ACT Government	ACT	www.data.act.gov.au	5
ASRIS	National	www.asris.csiro.au	5
SA waterconnect	SA	www.waterconnect.sa.gov.au	3
TOTAL			24677

Aim: to increase the value of Agricultural research data in Australia by making it more discoverable and re-usable (including analysis ready)

Access arrangements are an important part of moving 'My data' to 'Our FAIR data'



The data (so far)

- Rotational crop trials
- Frost nursesey trials
- Soil moisture sensors and networks
- Weather station sensor network
- National soil data and services
- Soil sample dataset



- *Agricultural data being made more discoverable and re-usable in line with community expectations*
- *Data made accessible from multiple repositories, from across different organisations*



Home The vision The approach **Explore the data** Use cases Get involved Who are we Resources FAQs Contact us

Explore the data

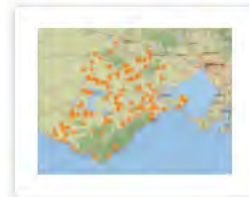
Featured Datasets



CSIRO - National Soil Site Database (NatSoil)

Contains descriptions of approximately 16,000 soil site investigations. The data includes morphological descriptions and chemical and mineralogical properties.

Explore ▾



FedUni - Corangamite Soil Health Monitoring Program

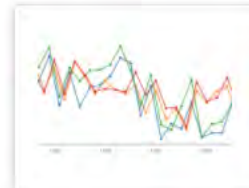
A set of 100 soil health monitoring sites from across the Corangamite CMA region of Victoria. Data includes pH, EC, nutrients (P,K,N,S), trace elements and Carbon fractions.

Explore ▾



FedUni - SFS Soil Moisture Probe Network

A network of ~75 telemetered soil moisture probes across Victoria and Tasmania. Data typically includes soil moisture and soil temperature readings at depths 300-1000mm



University of Adelaide - Waite Field Trials

The dataset brings together yield information from rotational crop trials together with weather and soil information covering multiple decades. It includes data from 9 parameters



AgReFed Community 'rules' (policy) relating to *access*:

A unique identifier

Principle (for AgReFed)	Increasingly FAIR -->				
FINDABLE					
Q1 The data product has been assigned (an) identifier(s)	No identifier	Local identifier	Web address (URL)	Globally unique, citable and persistent identifier (e.g. DOI, PURL, or Handle)	
Q2 The data product identifier is included in all metadata records/files describing the data	No	Yes			
Q3 The data product is described by a metadata record	The data is not described	Brief title and description	Brief title and description, and multiple other fields filled out, albeit briefly.	Comprehensively (including all AgReFed required fields*) using a formal machine-readable metadata schema.	
Q4 The data product is described by a metadata record that is indexed in a searchable registry or repository	The data is not described in any registry or repository	Local institutional repository	Domain-specific repository	Generalist public repository	Data is in one place but discoverable through several places (i.e. other registries, RDA, Google Data Search)
ACCESSIBLE					
INTEROPERABLE					
REUSABLE					

The metadata record which is findable and persistent

Increasing FAIRness to meet 1. community expectations/data requirements for re-usability of data and 2. individual and organisational capabilities/requirements

* Q3 - Minimum metadata requirements were specified. See <https://doi.org/10.25919/5cf179ba35db9>

AgReFed Community 'rules' (policy) relating to *access*:

A clear access statement
'As open as possible, as closed as necessary'

Principle (for AgReFed)	Increasingly FAIR -->				
FINDABLE					
ACCESSIBLE					
Q5 How accessible is the data? The access method(s) must be explicitly stated in the metadata record, e.g. if any authentication is needed, or there are any restrictions to access.	No metadata record	Access to metadata only	Unspecified access conditions e.g. "contact the data custodian to discuss access"	Embargoed access after a specified date; or A deidentified version of the data is publicly accessible	Fully accessible public, or to persons who meet and follow explicitly stated conditions and processes, e.g. ethics approval for sensitive data
Q6 Data are available for reuse via a standardised communication protocol, such as file download over https, or a web service.	No access to data	By individual arrangement	File download from online location	Non-standard web service (e.g. OpenAPI/Swagger/informal API)	Standard web service API (e.g. OGC)
Q7 The repository/registry agrees to maintain the persistence of the metadata record, even if the data product is no longer available.	No (or not applicable, if no metadata record exists)	Unsure	Yes		
INTEROPERABLE					
REUSABLE					

It has to be accessible (technically over the web)




AgReFed Community 'rules' (policy) relating to *access*:

Standard licence readable to humans and machines



Principle (for AgReFed)	Increasingly FAIR -->				
FINDABLE					
ACCESSIBLE					
INTEROPERABLE					
REUSABLE					
Q12 Machine-readable data licenses are assigned to each data product, and are stated in the metadata record.	No license is applied	Non-standard license applied, without a license deed URL encoded in a machine-readable format (e.g. RDF/XML) in the metadata record	Non-standard license applied, WITH the license deed URL encoded in a machine-readable format (e.g. RDF/XML) in the metadata record	Standard license applied (e.g. Creative Commons), without a license deed URL encoded in a machine-readable format (e.g. RDF/XML) in the metadata record	Standard license applied (e.g. Creative Commons), WITH the license deed URL encoded in a machine-readable format (e.g. RDF/XML) in the metadata record
Q13 The provenance of the data product is described in the metadata, i.e. project objectives, data generation/collection (including from external sources) and processing workflows.	No provenance information is recorded	Partially recorded	Comprehensively recorded in a text format (i.e. TXT or PDF)	Comprehensively recorded in a machine readable format (i.e. in metadata record's schema or PROV, or in RDF, JSON, NetCDF, XML, etc)	
Q14 The preferred citation for the data product is provided in metadata record	No	Citation does not include identifier	Citation includes identifier		

citation



Challenges for providers of agricultural related research data in making data accessible

- Understanding roles, rights and obligations around providing (or restricting) data access.
 - Honouring contractual agreements between data originators (e.g. farmers) and service providers (e.g. contractors), funders and data provisioners
- Understanding institutional/organisational policies around data/IP access agreements (e.g. embargo periods on thesis data)
- Support/extension required re. licencing application
 - Understanding the pros and cons of different standard licencing (Open vs more restrictive)
 - Education required around FAIR does not = Open.
- Different data storage and data access policies, processes and information and technology support and priorities across agricultural research related organisations, examples -
 - Legacy database use/preference
 - Different repository choices
 - IT data access protocols – Application programming interface APIs
- Close collaboration required between research groups, IT, library, IT and research data experts (example through Australian Research Data Commons ARDC)

Data access use case: Soil sensor networks



The data

Southern Farming System's (SFS) [soil moisture network](#) across Victoria and Tasmania was stored in a closed database. The dataset was difficult to discover and the access conditions were not clearly specified to potential users of the data. Each individual request for data needed to be executed by research or technical staff, which was a poor use of time.

The challenge

The challenge was make data discoverable and accessible for research, but only under conditions specified by the data provider to protect the rights of the data owners.

SFS was interested in providing data to researchers for predictive modelling of soil moisture.

Data access use case: Brokered access – soil moisture probes

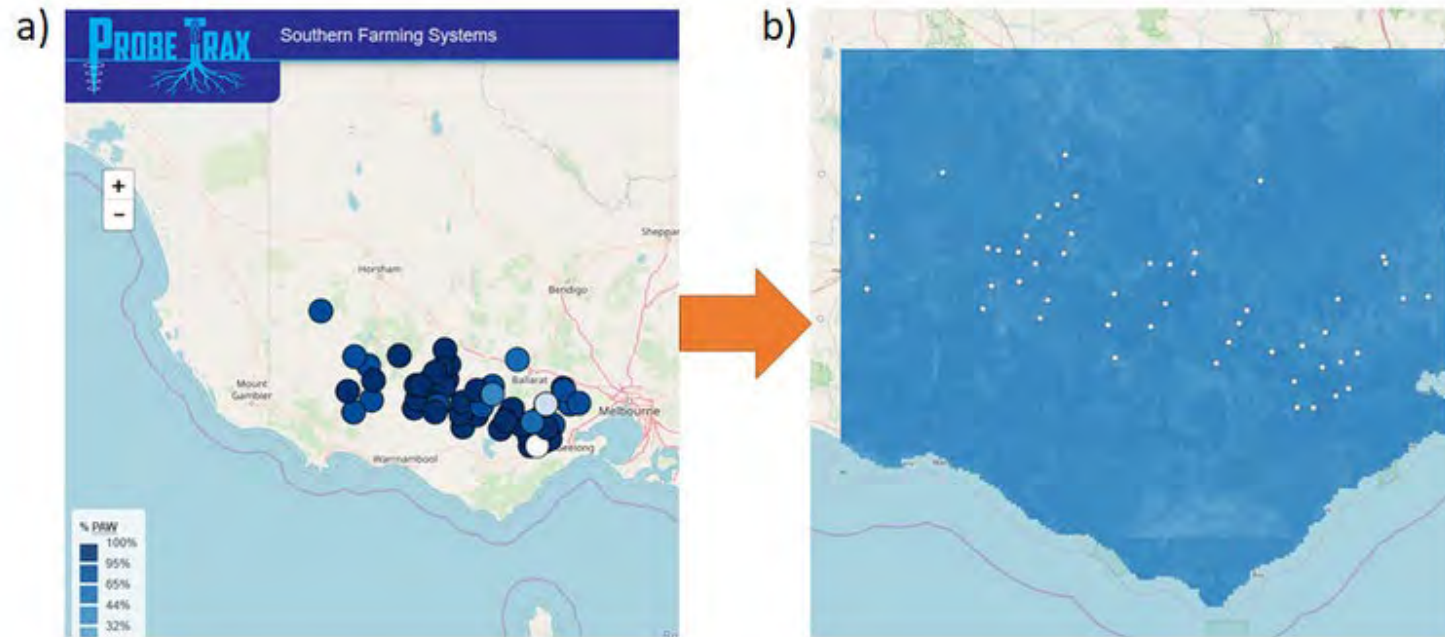
Systems Analyst Programmer Scott Limmer, CeRDI:

"We now have machine learning on services set up over the soil moisture probes. This is producing interpolated maps, that is predictions of soil moisture between the locations of probes"

"Providing the data as a service makes it much easier for researchers to provide these maps - the models can run automatically and be updated overnight"

"These maps will provide added value to the data provider (Southern Farming Systems) through making their data more FAIR through AgReFed"

The data is now more easily discoverable via the internet, and accessible directly to users via an authentication system. This means the soil probe data is more likely to be re-used whilst protecting the rights of the data owners.



Soil moisture observations at specific soil probe locations (a) is now being used for dynamic modelling to predict soil moisture levels between probe locations (b).

Licence & Rights:

Non-Commercial Licence [hide details](#)



Non-Commercial Licence

<https://creativecommons.org/licenses/by/4.0/>

Access to this collection data is partly restricted. The most current data (last 3 months) is not publicly available.

Additionally, the exact location of the individual probes is obfuscated within a 5km radius of the actual location. Access to the full dataset may be granted following approval of a written application.

Access:

Conditions apply

Contact Information

Street Address:

23 High Street, Inverleigh VIC 3321

Ph: 03 5265 1666

office@sfs.org.au



Data access use case: Frost trial data

The data

Partners through the ARC Centre of Excellence in Plant Energy Biology collect a wide range of datasets to investigate the desirable plant traits and growth conditions for crop yield under frost, including plant growth trait, hyper- and multi-spectral data, proteomics and metabolomic data.

The challenge

Datasets were all processed and stored in separate locations. After publication or report writing, the data effectively became "lost" to other researchers. The researchers wanted the data they generated to be findable and useable by others in their team and more widely to advance crop science.



THE UNIVERSITY OF
**WESTERN
AUSTRALIA**



Department of
**Primary Industries and
Regional Development**

GOVERNMENT OF
WESTERN AUSTRALIA

Data access use case: Frost trial data



UWA/DPIRD Frost Nursery Trial 2018

NICOLAS TAYLOR (DATA MANAGER), BEN BIDDULPH (DATA MANAGER), HARVEY MILLAR (DATA MANAGER), NIKOLAUS CALLOW (DATA COLLECTOR), BRENTON LESKE (CREATOR)

School of Molecular Sciences, ARC Centre for Plant Energy Biology, UWA School of Agriculture and Environment

Dataset

This is a screenshot of the Research Data Australia search results page. The search bar shows the query 'frost grain trials'. Below the search bar, the dataset title 'UWA/DPIRD Frost Nursery Trial 2018' is displayed, along with the University of Western Australia logo and the names of the data managers and creator. The page also shows the number of views (313) and accesses (26).

This is a screenshot of the AgReFed @ Dale website. The main heading is 'AgReFed @ Dale' over a background image of a green field. The navigation bar at the bottom includes links for Home, OpenAPI, Search, and Notebook. A red banner in the top right corner indicates 'In Beta'.



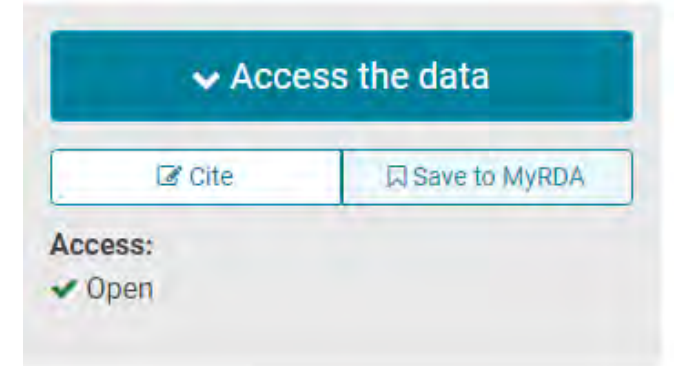
Data access use case: Open access - Frost trial data

- Discoverable through Research Data Australia, UWA repository, AgReFed
- Access: To the broader scientific community via an OpenAPI http://webapps.plantenergy.uwa.edu.au/agrefed_dale/ and through AgReFed
- The team, and other researchers are now able to select, combine and download by other co-variables of interest including include plant growth/grain yield, ProteoMetabolite data and on-site weather data, as well as factors such as sowing time, variety



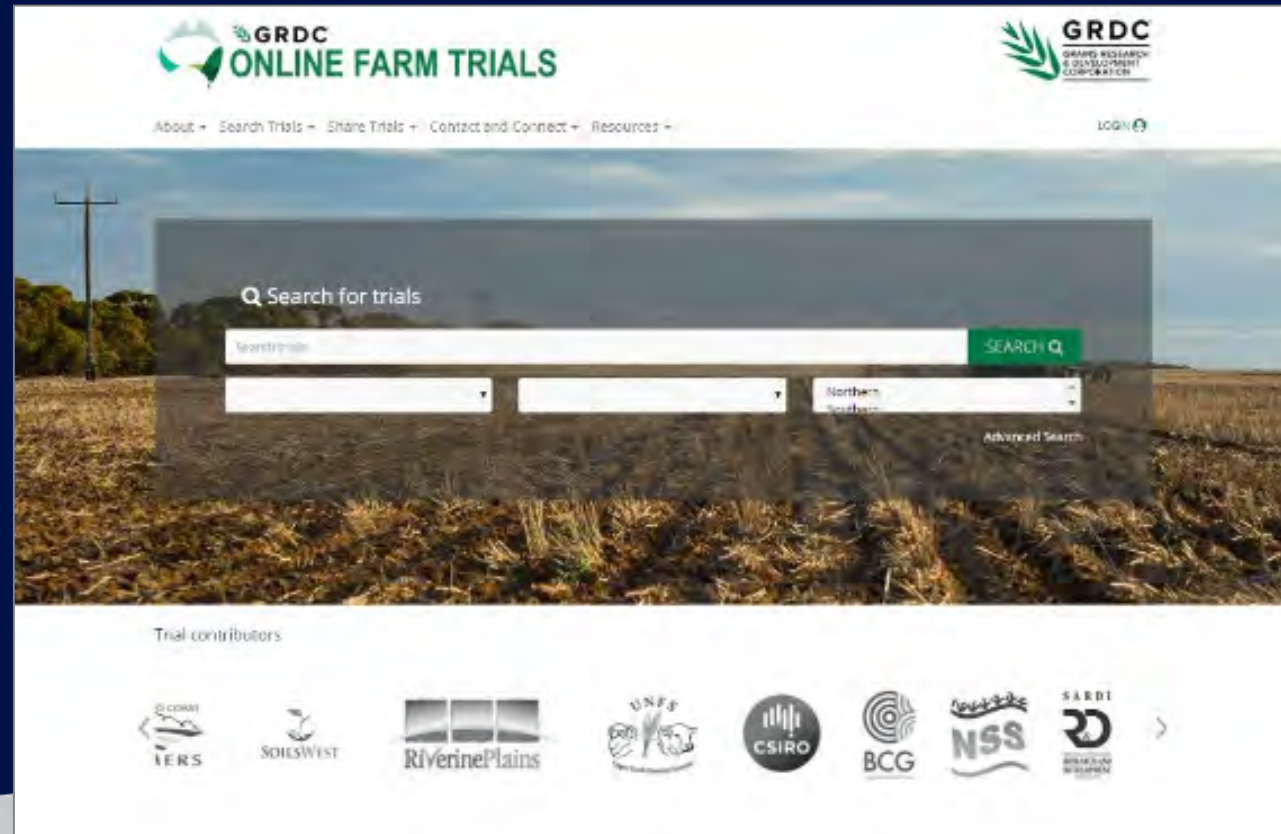
Senior Lecturer
Dr Nicolas Taylor

“This has been a really great test case for how we can integrate all these types of data. For example, yield has been integrated with drone data. We are starting to see some really interesting things.”



Online Farm Trials

An example/experience of Open Access agricultural data



The screenshot displays the GRDC Online Farm Trials website. At the top, the GRDC logo and 'ONLINE FARM TRIALS' are prominently featured. Below this, a navigation menu includes links for 'About', 'Search Trials', 'Share Trials', 'Contact and Connect', and 'Resources'. A 'LOGIN' button is also visible. The main content area features a large search bar with the placeholder text 'Search for trials' and a 'SEARCH' button. Below the search bar, there are three dropdown menus for filtering trials, with the first one showing 'Northern' and 'Southern' options. An 'Advanced Search' link is located at the bottom right of the search area. The background of the search section is a photograph of a rural landscape with a field and a utility pole. At the bottom of the page, a section titled 'Trial contributors' lists various organizations with their logos, including IERS, SOLESWEST, RiverinePlains, UNFS, CSIRO, BCG, NSS, and SARDI.

What is Online Farm Trials (www.farmtrials.com.au)

- Online Farm Trials – beginnings in 2013/14; 3 initial contributors of trial research data and reports to the system.
- Focus on the system was to make trial data and information discoverable (findable and accessible) to the grains community.
- Australia – rich history of trial research for over 150 years.
- There are now over 80 contributing organisations to OFT – thousands of publicly accessible and available trials in 1 location.

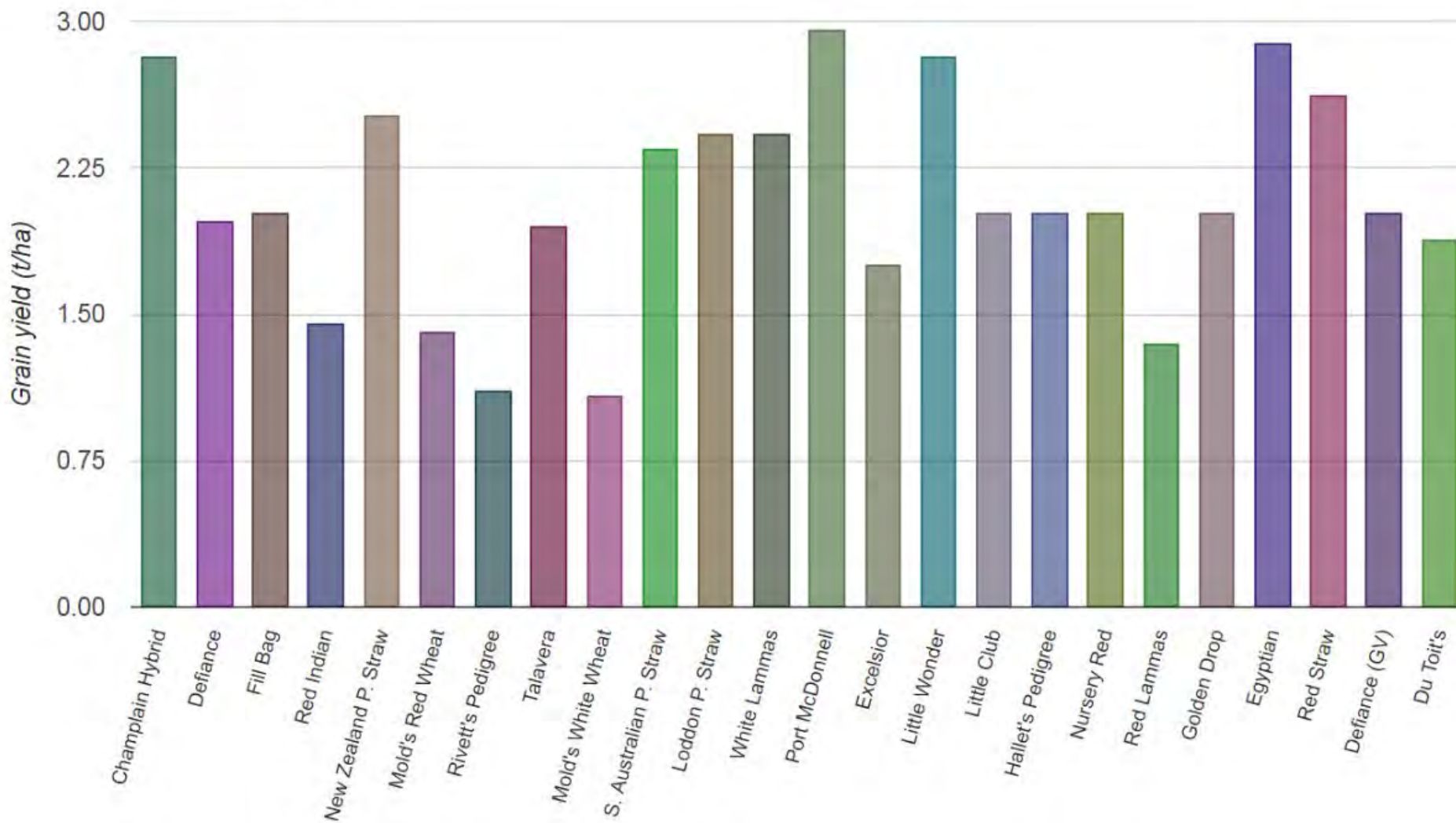
Yield trials – Dookie (1884)

Victoria Agriculture Report for the Year 1884
(1885); Department of Agriculture.

No.	Variety of Wheat.	Where procured.	Amount sown.	Date when sown.	Size of plot.	Rainfall while maturing.	No. of days maturing.	Date when harvested.	Weight of grain, 1st.	Weight of grain, 2d.	Rate per acre.
				1884.				1884.	lbs.	lbs.	bush.
1	Champlain Hybrid ...	California ...	2 lbs.	16 May	80th of acre	10·63	202	3 Dec.	84	6	42
2	Defiance ...	South Australia	2 "	"	"	10·68	213	11 "	59	5	29½
3	Fill Bag ...	"	1½ "	"	40th of acre	10·87	210	8 "	45	3	30
4	Red Indian ...	"	2 "	"	30th of acre	10·68	202	3 "	43	3	21½
5	New Zealand P. Straw	"	2 "	"	"	10·87	213	11 "	75	2½	37½
6	Mold's Red Wheat ...	France ...	2 "	"	"	11·02	226	24 "	42	3	21
7	Rivett's Pedigree ...	South Australia	2 "	"	"	11·02	226	24 "	33	2	16½
8	Talavera ...	"	2 "	"	"	10·87	213	11 "	58	5	29
9	Mold's White W. ...	France ...	2 "	"	"	11·02	226	24 "	32	3	16
10	S. Australian P. Straw	South Australia	2 "	"	"	10·87	213	11 "	70	4	35
11	Loddon P. Straw ...	Farm ...	2 "	"	"	10·68	202	3 "	72	4	36
12	White Lammas ...	"	2 "	"	"	10·87	213	11 "	72	3	36
13	Port McDonnell ...	"	2 "	"	"	10·68	202	3 "	88	5	44
14	Excelsior ...	California ...	2 "	"	"	10·68	202	3 "	52	4	26
15	Little Wonder ...	Katandra ...	2 "	"	"	10·87	210	8 "	84	4	42
16	Little Club ...	California ...	2 "	"	"	10·87	213	11 "	60	1½	30
17	Hallet's Pedigree ...	South Australia	8 oz.	"	120th of acre	11·02	226	24 "	15	1	30
18	Nursery Red ...	"	8 "	"	"	11·02	226	24 "	15	1½	30
19	Red Lammas ...	"	8 "	"	"	11·02	226	24 "	10	1	20
20	Golden Drop ...	"	8 "	"	"	11·02	226	24 "	15	1½	30
21	Egyptian ...	Katandra ...	2 lbs.	"	30th of acre	10·68	202	3 "	86	5	43
22	Red Straw ...	Goulburn ...	2 "	"	"	10·68	202	3 "	78	3	39
23	Defiance ...	"	2 "	"	"	10·87	210	8 "	60	4	30
24	Du Toit's ...	Victoria ...	2 "	26 May	"	10·01	192	3 "	56	5	28



Season comparison



A more recent example ...

The screenshot displays the GRDC Online Farm Trials website. At the top, the GRDC logo and 'ONLINE FARM TRIALS' are visible. A navigation menu includes 'About', 'Search Trials', 'Share Trials', 'Contact and Connect', and 'Resources'. A search bar is present with the text 'Home :: Trial Search' and a search button. The main heading for the trial is 'Biosolids to overcome subsoils constraints in the Victorian grain growing soils' with the year '2019' to its right. Below the heading, the research organization is 'Federation University' and funding sources include 'GRDC' and 'intelligent water networks'. A horizontal menu of tabs is shown, with 'Project details' highlighted in green and circled in red. Other tabs include 'Method', 'Results', 'Soil', 'Climate', 'Trial report and attachments', and 'GRDC final reports'. To the right, there is a banner for 'Soil and Landscape Grid of Australia'. Below the tabs, the 'Trial details' section provides the following information:

Researcher(s)	Nimesha Fernando, Singarayer Florentine, Renick Peries, Aravind Surapaneni
Contact email	n.jayaweera@federation.edu.au
Contact phone	0353279189
Year(s)	2019
Contributor	Federation University Australia - School of Health and Life Sciences
Trial location(s)	Ballan, VIC Balliang East, VIC

The 'Aims' section states: 'The aim of this project is to investigate the use of biosolids to overcome subsoil constraints in the high and low rainfall zones in Victorian grain growing regions: in brief,' followed by a bulleted list of objectives:

- investigate whether subsoil physicochemical constraints that limit root growth and reduce water and nutrient-use efficiency can be overcome by using subsoil amelioration with pelletised T1C2 grade biosolids
- determine whether subsoil amelioration with biosolids will have any adverse effects on plant availability of heavy metals
- investigate whether microbial populations will be impacted from the application of biosolids into the subsoils
- determine whether biosolids as a subsoil ameliorant can have any impacts on grain quality

The 'Key messages' section includes: 'TRIAL IN PROGRESS. For the current information please contact 0353279189/0434871969'. On the right side, there are two maps: a smaller one for 'Soil and Landscape Grid of Australia' and a larger one for 'SILO weather stations' showing a map of Australia with numerous station locations marked.

OFT – coalition of Open Access data relevant to Agriculture, and agricultural data context

- Initial Terms of Use v. Terms of Contribution.
 - e.g. The data and information accessed through OFT may also be subject to Terms of Use specified by the Trial Contributor, in which case the Terms of Use of a Trial Contributor take precedence over other information provided on OFT. The Terms of Use for a Trial Contributor or for OFT may change without notice.
- 2017-18: began revision of Terms of Use and Terms of Contribution
- Dispute resolution procedure developed.

Terms of Use

- Initial focus on getting trials online – accessible to users.
- Providing clarity on: Terminology, Disclaimer/s, Use of Information and Licensing.
- Aware of trademarks, etc: Plant Breeders Rights, Registered products/names/IP.
- Citations – aware of contributor and how to cite OFT as a general source, a trial in OFT or when using data exported from OFT.

Terms of Contribution (T's&C's)

- Involvement of GRDC legal – provided guidance and support.
- Priority was on ensuring that trial metadata (details about the trial) was open (Freedom to Operate – GRDC priority).
- Asked organisations contributing trials to OFT to make their trials **FAIR**.
- New T&C's - apply the Creative Commons Attribution 4.0 International Licence (**CC BY 4.0**, <https://creativecommons.org/licenses/by/4.0/>) to data made available via OFT.



The Experience/Learning

- Plethora of Open Access data
- Understanding T's&C's is critical – contributing the data and using the data.
- Support of domain experts (data wrangling, sharing, metadata, services, etc).
- The data should be **FAIR**

Open Access Week – Thanks for watching!

Open access in research practice: the CeRDI experience

A/Prof Peter Dahlhaus, Principal Research Fellow

Dr Megan Wong, Research Associate

Dr Nathan Robinson, Senior Research Fellow

Centre for eResearch and Digital innovation (CeRDI)

Wednesday 21 October 2020 – Online Research Seminar