Australian Government
Cotton Research and Development Corporation

FINAL REPORT 2015

For Public Release

Part 1 - Summary Details

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number: DAN1302

Project Title: Building the cotton industry knowledge hub

Project Commencement Date: 1/07/2012 **Project Completion Date:** 30/9/2015

CRDC Research Program: 4 People

Part 2 – Contact Details

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Date Submitted: _____

Part 3 – Final Report

(The points below are to be used as a guideline when completing your final report.)

Background

1. Outline the background to the project.

The Cotton Catchment Communities CRC (Cotton CRC) web site was the default repository of scientific and extension material with the Australian cotton industry. Recent surveys indicate the Cotton CRC web site is a major access point (79% of consultants access the site occasionally or more often) for research based information created by projects supported by the CRDC and the Cotton CRC. The website had an Australian focus, as 66% of all visits and 91 % of returning visits to the current site were from Australia.

Following the end of the Cotton CRC in June 2012 resources were provided to ensure the website was maintained with limited capacity until an alternative was made available. The site had to be maintained so that existing links by MyBMP to resources were not broken. There was no provision however for the website to be extensively updated with new and emerging research and development outputs and industry activities.

Industry therefore required a new centralised knowledge hub that had the capacity to hold industry knowledge and which could be updated as new documentation became available. The benefits of a centralised hub are twofold. Firstly, for the general public multiple industry websites (MyBMP, CottonInfo, CRDC) can point to a single source for a file and avoid problems with different industry web sites storing their own, but different, versions of the same resource. Secondly, for industry privileged users, there is a single site that can be accessed that provides historical document access for publicly available documents that have been produced by industry research and development.

The decision was made to use DSpace as the repository of choice for the storing of document for retrieval by My BMP and CRDC web site. This CMS (Content Management System) is widely used worldwide by the university sector for storage of research based information. See Appendix 1 for Australian institutions using the system in 2012.

Once the decision was finalised to utilise the new repository the project began the task of moving publicly available resources from the Cotton CRC site to the new DSpace repository. As CRDC had inherited custody of legacy documents from National Program for Sustainable Irrigation (NPSI) and Land and Water Australia (LWA) these were also placed in the system. The Repository also contains Australian Cotton Conference Papers and posters from 1984 onwards.

Over 3000 Items have been created in the repository with Metadata created for each item that will aid in retrieval and interpretation of the documents (see Appendix 2: Dublin Core Metadata Used to describe documentation in DSpace instance on insidecotton.com.).

The project also assisted the Development and Delivery / CottonInfo team with the production of tools and resources (e.g. COTTONpaks USB portfolio and updates to the Weed ID guide).

The project also maintained the industry contact list that was a legacy from the Cotton CRC and provided project support to researchers, extension and communications officers by extracting targeted contact lists for distribution of industry resources, researcher regional contacts and surveys.

Objectives

2. List the project objectives and the extent to which these have been achieved, with reference to the Milestones and Performance indicators.

Objective No 1. Build new industry web knowledge hub			
1	**Investigate CMS for web site**	01/07/2012	01/07/13

This project used DSpace as the repository of choice for the storing of documents for retrieval by MyBMP and CRDC web site. (see Appendix 1 for Australian users of DSpace system in 2012). The database had been commissioned before the start of this project

Dairy RDC was visited when an opportunity arose. Dairy RDC was currently using the DSpace system internally, with potential to use it in their public site. Dairy had a larger client base than cotton (8000) and have 4 librarians to manage publications. Data had been transferred to DSpace by third a party In general Dairy RDC were not 100% happy with the metadata being mapped by staff not having insight into document content. Their DSpace setup is based on communities built around their programs DSpace setup allows multiple controlled users of communities and collections of documents within these communities. Not all their documentation on their DSpace system is public (IP issues) and access to levels by individuals (the item description and the bitstream (document) can be controlled by the system.

Objective No 2. Document metadata with an industry standard metadata set			
2.1	**R & D resources updated and available in new web site**	01/12/2012	30/09/2015

The Cotton CRC website continued to be utilised extensively until January 2015 as no alternative site had been finalised for accepting and displaying industry research based publications.

The first document set to be added to DSpace was the legacy documents available on the Cotton CRC web site. It should be noted that the site had been cleaned and minimised at the completion of the Cotton CRC. Some documentation that had not been included in the final version of the Cotton CRC site – the "Cotton Tales" extensions newsletters - were added later from archived Cotton CRC CMS records after a request from CottonInfo regional extension officers.

As the data was lodged supporting metadata was generated for each document – either by adapting existing metadata from the Cotton CRC's CMS or creating from scratch.

As the Cotton CRC material was moved to DSpace. The myBMP system was checked for links to the Cotton CRC site and alternative links to the DSpace version were provided. The MyBMP system – as a registered entity on DSpace was able to seamlessly call documents.

Research and development resources were lodged within DSpace as they became available and descriptive metadata developed for each entry.

All documents lodged in DSpace are currently available to the CottonInfo team as privileged users using the DSpace system at insidecotton.com.

Access to the bitstream (final PDF documents) within DSpace is limited to privileged users via password access and to the myBMP system. The cotton industry can have had access to DSpace indirectly through links to DSpace documents via myBMP. The myBMP system has privileges to access these documents.

In 2015 NPSI and LWA legacy document were added to the system.

CRDC final reports that have been provided in the later part of this project following IP access rights being checked by CRDC. (these include final reports between the years 1986 – 2000). All these records were scanned documents and, although character recognition had been carried out on these documents, further optimisation was required in order to extract meaningful information for abstracts and key wording for document metadata (See Appendix 3: Character recognition pre and post optimisation). Note there are currently over 3000 items in the DSpace repository..

Objective No 3. Document metadata with an industry standard metadata set			
3.1	**All PDF documents with compliant metadata**	01/12/2012	30/06/2015

Descriptive Metadata was added to each document as part of the submission process.

3.2	**Cotton CRC material transitioned**	01/07/2012	30/12/2013

All relevant Cotton CRC documents have been transferred to DSpace, Information sheets, Final reports, ID guides Paks and Manuals. Completed in May 2013

Objective No 4. Maintain industry contact list			
4.1	**Annual update of industry contact list**	01/07/2012	30/09/2015

The industry contact details were continually updated with feedback from the CottonInfo team, Spotlight mail out and Benchmark surveys. It is estimated that there is less than a 3% alteration rate on Spotlight mail outs.

This project maintained the cotton industry contact list through a number of iterations.

The following is a summary of activity between15/11/2014 – 25/05/2015. The data below gives an idea of the extent of the task. Although total numbers on the list did not rise significantly from 2012 (approximately 3400) there is some internal change occurring constantly

Summary List - May 2015
Total Active 3424
113 New, 84 Inactivation's, 321 Edits
1575 Spotlight Magazine Active:
2536 CottonInfo Enews
1497 Cotton Production Manual
971 Cotton Pest management Guide (this document provided to all registered growers)

4.2	**Updated industry list available to key industry agencies and personnel via web based tool**	01/07/2012	01/02/13

A seed list was provided to CRDC in an attempt to use the CEvent system as a Contact list repository. Unfortunately this internet based system suffered severe lag times for anyone attempting to update it on a daily basis. As result this project kept running the original system albeit in parallel.

A second attempt was made at using a web based system that resided in a separate area on the MyBMP system. Created by Dan Hickey of Morgan RuralTech the new web based system had a long term aim of combining Cotton Australia and CRDC information or at least having a system that would pass updates from one data set to the other. This system worked adequately and had the potential to allow multiple people to update the records from a web interface. An improved logging system would have been required to use multiple submitters safely.

When the decision was made to abandon the MyBMP based system in November 2014 this project again resumed full responsibility for maintenance and distribution using an Excel based tool. Lists were provided to CRDC communications, researchers and CottonInfo officers as requested.

The last dataset was passed to CRDC in mid-August 2015 for inclusion in new web based system.

Objective No 5. Provide experienced support for production of essential industry documentation e.g. Cotton Pest Management Guide , information sheets, web surveys and forms for the Cotton Industry D&D team and dissemination of same via web and mobile media			
5.1	**Work with D&D team to ensure all information and activities are communicated to industry**	01/07/2012	30/09/2015

The project officer in charge of this project was a part of the cotton industry Development and delivery team and coordinated regular contact on teleconferences, and team meetings.

The officer attended the Australian Cotton Conference in 2012 in support of the team and manned the extension stand at the conference taking the opportunity to gather client details for inclusion on the industry contact list see Objective 4.1and to promote CottonInfo team activities and publications access using mobile devices.

As Project Leader I ensured that updated material was available on the Cotton CRC site in lieu of the new delivery site.

The project officer participated at the Cotton Trade show 2013 with the Development and delivery team also entailed manning the CottonInfo stand in support of cotton industry apps and documents promotion.

This project regularly provided regional, updated contact lists to the CottonInfo team. In turn the data gathered by the team at workshops and field days was passed back to update the current list.

A Cotton Documents Portfolio USB (see Objective 7.2) has been developed and provided to the CottonInfo team the to allow core research information (in lieu of a new web site to succeed the Cotton CRC site) to be disseminated to industry.

In addition subsets of industry contact and subscription lists were supplied to CottonInfo team for their use and for feedback on listed members.

CottonInfo Publications Portfolio USB's compiled by this project were provided to industry via the CottonInfo team from August 2014 See Appendix 5: Cotton portfolio Note a special run of 50 was made for Kieran O'Keeffe for dissemination in the southern region.

Following enquiries regarding accessing old extension material (CRC CottonTales newsletters) this project has made the full publication set available on DSpace for privileged access by development staff.

Objective No 6. Support and promote extension opportunities			
6.1	**Support and promote extension opportunities**	01/07/2012	30/09/2015

The project supported a number of diverse extension activities. These included:

Created and maintained websites for three CRDC backed conferences.

- 2013 Sustaining Rural Communities Conference: 5-6th June 2013 (role - registration, invoicing, audio visual, support).

- 2013 Australian Cotton Research Conference: 8-11 September (role - registration, invoicing, audio visual, support and assemble conference booklet using in design for hardcopy and web distribution)

- 2015 Australian Cotton Research Conference 8-10 September (role - assisted with initial set up of the website - http://www.cottonresearch.org)./

  These sites included a comprehensive list of support pages for their respective conference including programs, speakers, expression of interest form, merchandise and registration and invoicing system.

- Southern Expo Griffith in November 2013 (role – assisted in the distribution of industry information. Gathered 20 new industry list recipients).

- 2014 Australian Cotton Conference 5-7 August. (roles - Concierge App – desk at registration counter on days 1 and 2 to educate delegates how to use the App – loading, navigating, troubleshooting, etc., Monitoring of posed questions and comments from delegates in main plenary

and determining which questions and comments should be sent to the Chair's monitor and/or big screen. Posting papers and presentations to website

This project was also able to supply raw video footage (of time critical material) from the cotton breeders for use in upcoming Cotton Info videos.

Twitter and YouTube

This project created and maintained a Twitter feed that highlighted changes to the legacy web site.

This project created and maintained a YouTube to make available movies and animation is support of existing hardcopy documentation.

The @Cotton research twitter feed and You Tube control was passed to CRDC Communications manager on the 29th September2014. The Cotton Research twitter feed has been renamed Cotton Info and took with it a large base of existing subscribers (300+).

Objective No 7. Maintain existing information held within the Cotton CRC web for public access site beyond the termination of the Cotton CRC			
7.1	**Yearly review Cotton CRC material for relevance – ensure incorrect information is noted or removed**	01/07/2012	30/9/2015

The Cotton CRC web site was regularly checked for currency. Major industry publications such as the Cotton Production Manual and the Cotton Pest Management Guide and the Weeds ID Guide were updated as new information became available.

The site continued to attract web traffic for a number of years after the closure of the Cotton CRC.
(See Appendix 4: Cotton CRC web site stats 31/03/2015 – 28/06/2015 statistics from the last 2 months of the project).

The Cotton CRC site www.cottoncrc.org.au was removed from public access in August 2015 and a redirect was placed to divert all incoming requests to http://www.cottoninfo.com.au/

The cotton portfolio USB was updated regularly to reflect revisions of document contained on the stick,(See Appendix 5 : Cotton Portfolio).

7.2	**Update and/or transfer existing tools to new host/ url banner as required.**	01/07/2012	30/06/2013

The Cotton Symptoms Guide On-Line Tool

Updates were made to Cotton Symptoms Guide On-Line Tool to reflect new information and images in the paper based version of hardcopy "Cotton symptoms guide - The guide to symptoms of diseases and disorders in Australian cotton". The site now off -line.

At the time of the update, analytics showed an increase in downloads of around 30% compared the same period in the previous year. --

Bee Alert

The Bee alert system on the Cotton CRC web site was originally developed by Cotton CRC web admin in response to potential need to inform cotton farmers when there were Bee hives in their vicinity that may require a change to some management practices during given period. With the support minimisation on the Cotton CRC Site there was a need to update and move the system to a web site that held currency for the industry. This was taken on by MyBMP in an system which adapted the MyBMP events and spatial component systems. The MyBMP bee alert system was used primarily by stakeholders in the southern regions. This project cooperated in this development. Note this tool has now been superseded a new Bee Aware Tool .

The Australian Cotton Symptoms Guide

http://www.cottoncrc.org.au/industry/Tools/Symptoms_Identification_Tool

This tool was updated by way of the cotton symptoms app for IPad. Project CRDC DAN 1304 Spatial technologies in Australian cotton has been instrumental in moving this forward to completion.

Weed Id Guide

One of the most accessed sections on the Cotton CRC legacy site is the weed identification tool, based on information from section A1 of WEEDpak.

This project has moved weed identification data to a more flexible database driven system that can repurpose the weeds information for different needs. To date the final weed ID information had been provided in a Word document and had been updated and added to consistently since its first publication in WEEDpak (the original printed version had 42 included weeds). Graham Charles has been constantly updating the information on weeds and plants commonly found in the cotton Farming system and are now over 195 weeds available.

The database of weeds identification information has been used to generate an interactive PDF file that has been laid out to suing on a tablet device (long single page layout per weed compared to 2 page per weed in paper targeted publication).

New tools used by the project (Adobe creative cloud tools used in conjunction with a Microsoft Access database) have simplified the update and creation process, including the insertion of new information such as herbicide resistance risks.

The stored information can be used to create device specific publications from the same data set For example:

- A complete weed ID document for Computer or tablets (can be use on phone) (see Appendix 6: Outputs from Weed ID Database **for** screen shot)
- Subset of cotyledon and small plants for small handheld devices (phones) for ready access in the field (Appendix 6: Outputs from Weed ID Database for screen shot)
- Access data based storage of this information will simplify development of web tools.

The Cotyledon and Seedling ID guide V1.0 and Plant and Weed ID Guide were completed and distributed at the 2014 Australian Cotton Conference via CottonInfo USB. These documents have also been distributed via CottonInfo USB to Southern NSW new grower groups.

Insect ID Tool

This project extracted all data and images used in the Cotton CRC insect tool and provided it to CRDC for repurposing. Metadata for images was either extracted or created for easier downstream use.

Objective No 8. Support myBMP content and links to industry resources			
8.1	**Work with myBMP service officer to ensure all myBMP links current**	01/07/2012	30/09/2015

The project worked with the MyBMP service officers to identify links in MyBMP to documents on the Cotton CRC site and then pointing them to their duplicated home in DSpace.

During this update process some extra resources were identified and forwarded to the service officers for inclusion.

This project assisted the MyBMP by splitting chapters of new documents so that updated chapters could be included in existing links.

Objective No 9. Report to Industry			
9.1	**Monthly progress reports**	01/07/2012	30/09/2015

November 2012 6 monthly report completed and accepted
May 2013 6 monthly report completed and accepted
November 2013 6 monthly report completed and accepted
May 2014 6 monthly report completed and accepted
November 2014 6 monthly report completed and accepted
May 2015 6 monthly report completed and accepted

9.2	**Final report**		20/9/2015

This report

Methods

Detail the methodology and justify the methodology used. Include any discoveries in methods that may benefit other related research.

3. Detail the methodology and justify the methodology used. Include any discoveries in methods that may benefit other related research.

1. Data Preparation of old scanned documents:

Many of the documents, especially the CRDC final reports have been scanned text recognised with early Optical Character Recognition (OCR) algorithms with poor results. Most scanned documents needed to be optimised to improve the final result. This was necessary as text within each document needed to be accessed to build metadata information. Including text for Title, Authors, Abstract/summary, Subject and unrestricted keyword metadata. (See Appendix 3: Character recognition pre and post optimisation)

In future there should be little problem in this area as new PDF documents for submission the will normally come from the source digital file, not scanned copies (i.e. the text will already be embedded).

MS Excel and MS Access have been used in conjunction when preparing metadata. A dataset of final report metadata will be supplied to CRDC that will make future batch edits of metadata easier.

2. Web content management system tools used

- The CMS database that originally ran the Cotton CRC site was hosted by CSIRO as a commitment to the Cotton CRC.
- DSpace database, Installed and support by Edmund Balnaves Prosentient Systems P/L and hosted by Webworx International Pty Limited

3. Keyword Extraction:

Maui Indexer for keyword extraction on AGROVOC database, and Entopix.com

AGROVOC is a controlled vocabulary covering all areas of interest of the Food and Agriculture Organization (FAO) of the United Nations, including food, nutrition, agriculture, fisheries, forestry, environment etc. It is published by FAO and edited by a community of experts

http://labs.translated.net/terminology-extraction/ was used for extraction of unconstrained keywords for CRDC final reports. The data extracted was placed in CRDC.KeywordsUnrestricted metadata field in the CDRC final reports community.

From the labs.translated.net web site. "Terminology is the sum of the terms which identify a specific topic. Extracting terminology is the process of extracting terminology from a text. The idea is to compare the frequency of words in a given document with their frequency in the language. Words which appear very frequently in the document but rarely in the language are probably terms."

This gives a different, more specific, but equally useful summary of terms used within a document.

4. <u>Enhanced PDF - Methodology</u>

During the period of this project there was no alternative web site available to hold an interactive web tool. As part of the CRDC website update the first web tool provided was deemed not suitable for the task. As a result a temporary alternative was sought. The solution chosen was a PDF documents with enhanced navigation as they have the following advantages:

- Device independent (viewers are freely available for desktops and mobile devices).

- Quality for size – image quality very good for the size of the document compare to equivalent device apps available at the time.
- Good integration with existing mainstream tools (ie. Adobe creative cloud suite, including, InDesign CC and Photoshop format. Chosen to develop the Weed ID Guide).
- Ability to be easily stored in archive format.
- A familiar format for many (although in general not much use seems to be made of good navigation tools being made available in documents, especially long ones).
- Can easily be provided as a stand-alone file that can be downloaded from a web site or provided on a physical media such as CD or USB.
- Ability to include the document easily into a portfolio of PDFs for presentation within a suite of documents.
- Short time frame for development.

5. <u>Weed ID Creation Methodology</u>

- For the Weed ID guide the content of the original word files for each were split into it component parts and lodged in a single access database.
- Individual file names for related images were also lodged in the database.
- Image files stored in a single folder structure using a standard file naming scheme.
- CSV file created from access imported is accessed by Indesign CC templates to create for individual weeds ID pages and index image lists. Files created from access database can be sorted according to final need e.g. Individual weed sorted by family then species name for individual weed pages or cotyledon shape for seedling Id guide.
- Resulting Indesign document can be saved as a PDF at different resolutions according to need – smaller file sized for web use – Larger file with crisper images for distribution on USB. PDF files of Identification listings and Plant complete information are combined in a single document.
- Image linking to identification listing pages e.g. a cotyledon image on an individual plant links back a list of cotyledon images.
- Competed document uploaded to DSpace.
- Completed document Notification of DSpace link to MyBMP service officer.
- Include document in USB update.

Results

4. Detail and discuss the results for each objective including the statistical analysis of results.

See Section 2.

Outcomes

5. Describe how the project's outputs will contribute to the planned outcomes identified in the project application. Describe the planned outcomes achieved to date.

Applied Outcome 1: Growers have easy and logical access to research based information:

The DSpace database supplies this to industry by placing available information in the one searchable site, www.insidecotton.com, arranged in the following communities:

- Australian Cotton Conference Papers
- Cotton CRC
- CottonInfo
- CRDC Corporate
- CRDC Final Reports
- CRDC Spotlight
- Land and Water Australia
- National Program for Sustainable Irrigation

A USB was developed to distribute major cotton industry extension packages. The reasoning for development of this USB includes:

- Removes the issue of slow download speed still encountered in rural areas in accessing comprehensive documents.
- Easier to present documents in a larger single file rather than split into chapters which has been a default with web downloads. The Single file approach allows better use of electronic bookmarking and other navigation tools within a document.
- Image file quality can be higher in ID documents as there is not as much need to minimise file size.
- A physical resource has been produced that serves as a promotional reminder for MyBMP and CottonInfo.

Applied Outcome 2: A well informed industry serviced by well targeted electronic and hardcopy mail campaigns.

This project supported the upkeep of a single major contact list and generated a subset lists for industry research and development and delivery personnel. These subsets were uses in various ways for distribution of hardcopy documents, electronic newsletters and researcher contact details of growers and industry personnel.

Major information update publications were supplied using this information including the Cotton Pest Management Guide and the Australian Cotton Production Manual.

Applied Outcome 3: Up to date support information for myBMP with minimal duplication of information and all accessed documentation up to date

The project worked with the MyBMP service officer to ensure links from legacy sites were changed to reflect their new home in the DSpace digital repository.

Applied Outcome 4: Industry and the community able to and wanting to access the latest in cotton research based information from a one stop shop

Cotton industry research based documentation been made available in the DSpace document repository in a simple yet effective one stop web site for retrieving current and archival cotton research based material. This site is a source for other industry targeted web sites that need to access common documents.

6. Please describe any:-

a) technical advances achieved (e.g. commercially significant developments, patents applied for or granted licenses, etc.);

Provision of an industry accessible "library" of current and historical cotton research based information

b) other information developed from research (e.g. discoveries in methodology, equipment design, etc.); and

An alternative means of distributing data heavy information to a wide audience was developed (Cotton portfolio USB).

Development of navigation enhancement in large image rich documents (Weed ID Guide). (Alternative to web, hardcopy and Apps).

c) required changes to the Intellectual Property register.
No change

Conclusion

7. Provide an assessment of the likely impact of the results and conclusions of the research project for the cotton industry. What are the take home messages?

The DSpace system seeded in this project with existing cotton research based information will enable easier access by researchers and research managers to past work carried out in the Cotton Industry. If utilised properly they system should help minimise the problem of common document version control on disparate industry websites.

Extension Opportunities

8. Detail a plan for the activities or other steps that may be taken:
(a) to further develop or to exploit the project technology.

A central coordinator should be assigned to carry forward the DSpace repository for the future. A person associated with the CRDC or CottonInfo site would be best placed to capture extension documentation. It is recommended that a CRDC administrative person be given responsibility for future CRDC final reports and corporate publications.

It is possible to set up a workflow within the system where documents are lodged by individuals who have responsibilities for the different communities within DSpace. Metadata would also need to be checked or added to by a responsible person before the item goes live.

There are many tools being developed for DSpace that are worth considering for potential addition to the system. For example Semantic Search Facility for DSpace allows intelligent search of DSpace content, using Semantic Web technologies.
(see https://wiki.duraspace.org/display/DSPACE/Kotsomit) .

(b) for the future presentation and dissemination of the project outcomes.

Not applicable

(c) for future research.

An opportunity exists for a training video to be developed to show researchers how to retrieve data from DSpace. The package is simple and accessible however introductory training may optimise awareness use of this resource.

9. A. List the publications arising from the research project and/or a publication plan. (NB: Where possible, please provide a copy of any publication/s)

1. **Cotton publications portfolio USB (a compendium of existing information)**

   This compendium of major cotton industry extension documents. The documents have been individually developed by various authors. The USB Stick includes the Weeds ID Guide, Herbicide Damage ID guide and Seedling ID Guide developed in collaboration with Graham Charles, NSW DPI and this project.(see below)

2. **Weed ID Guide** (layout suitable for tablet use)

   http://www.cottoninfo.com.au/publications/weedpak-weed-id-guide

   alternative DSpace :

   http://www.insidecotton.com/xmlui/handle/1/1380

3. **Seedling ID Guide** (layout suitable for phone or tablet use)

   http://www.cottoninfo.com.au/publications/weedpak-seedling-id-guide

   alternative DSpace :

   http://www.insidecotton.com/xmlui/handle/1/1381

4. **Herbicide Damage Guide**

   http://www.cottoninfo.com.au/publications/weedpak-herbicide-damage-id-guide

   alternative DSpace :

   http://www.insidecotton.com/xmlui/handle/1/1379

B. Have you developed any online resources and what is the website address?

Inside Cotton DSpace Repository

http://www.insidecotton.com/

See Appendix 7: Inside Cotton Home page for screen a shot.

Cotton CRC web site

Http://www.cottoncrc.org.au

Now offline – and redirected to www.cottoninfo.com.au

Association of Cotton Scientists Conference web site:

http://www.cottonresearch.org/Welcome

Developed by this project in 2013 and adapted by this project in 2015 with Maintenance in 2015 by Dr Paul Grundy QDAF.

Sustaining Rural Communities conference web site

http://www.sustainingruralcommunities.org.au - Now offline

Part 4 – Final Report Executive Summary

The main task of CRDC DAN1302 *Building the cotton industry knowledge hub* was to seed a new cotton industry content management system (CMS) for current and historical documents that could be utilised by multiple cotton industry websites. The advantage of a CMS is that there is a single source for documentation and an extensive accessible and searchable for most research related industry documentation. The system also caters for information that used to be provided by legacy websites controlled by CRDC namely The Cotton Catchment Communities CRC, Land and Water Australia and the National Program for Sustainable irrigation web site.

The DSpace at www.insidecotton.com is not intended as the public interface rather it has been constructed as a research document repository to be used by individual researchers and other industry web sites such as MyBMP and CottonInfo and CRDC. The site currently contains over 3000 items in the following collections:

- Australian Cotton Conference Papers
- Cotton CRC
- CottonInfo
- CRDC Corporate
- CRDC Final Reports
- CRDC Spotlight
- Land and Water Australia
- National Program for Sustainable Irrigation

The project also maintained the Cotton CRC web site until the alternative CottonInfo site came on line and was bedded in during July 2015. Tools that had been made available on the Cotton CRC site were adapted for standalone use on computers and tablets. Namely the Weed ID and Herbicide Damage guides. In the process a database has been created of content that may assist in the development of future web based tools.

The Weed ID tool and Herbicide damage guide that had existed on the Cotton CRC website became outdated as new weeds and herbicide damage data became available. As the system required an extensive revamp to easily handle the information with only a relatively short time period available it was decided to develop stand-alone packages that could be used either on a computer or on a tablet in the field. Based on the experiences of other groups in developing mobile apps (for ultimately a small segment of the market), the decision was made to go with PDF documents enhanced with extensive linking for navigation. The quality of images for size of document bettered that of similar apps and there were no restrictions on the platforms available for viewing.

A USB stick was developed to distribute the Weeds ID and Herbicide Damage guides at industry venues as its large file size may have been a limitation for some in internet downloads. This has been enhanced to contain a portfolio of the major cotton documents and has been updated as new documents have become available. The cotton portfolio USB Stick has been popular in the new cotton regions and as a resource for educational courses. Its packaging promotes CottonInfo and MyBMP.

The *Building the cotton industry knowledge hub* project inherited The Industry contact database and maintained it through a number of changes (including a web based solution provided by MyBMP). Following the shutdown of MyBMP site the responsibility of maintaining the industry database returned to this project and enabled CRDC to seed the new web based system. Contact

data subsets were supplied to communications officers, researchers, and industry development and delivery staff over the life of the project..