

myStockPlanner: A user-centred approach to designing and building a digital decision support package for NSW livestock producers

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Abstract: *myStockPlanner equips livestock producers to confidently manage feed deficits and weather extremes in a variable climate. Using simple farm data inputs, and a ‘tell us once’ mantra, myStockPlanner provides an ‘at-a-glance’ feed balance; understanding of livestock feed requirements; the value of different supplementary feeds; and a plan to meet livestock requirements. The tool can mitigate the effects of decision paralysis and inform best-case financial outcomes of various decisions for a personalised farm. The development process for myStockPlanner sought to identify and select valuable features from legacy NSW Department of Primary Industries and Regional Development (DPIRD) decision tools, amalgamate them with new research outputs and uplift them into a newer, more intuitive package. The best features from tools such as Stockplan (comprising DroughtPack; ImPack; Feed, Sell, Agist; and PlanPack); Trigger Points Decision Support Tool; Drought & Supplementary Feed Calculator (DASFC); and Grazing Intelligence can now be accessed via a single-entry point. The tool includes feeding planners, livestock scenario modelling and financial impact assessments. Producers can model decisions like keeping and feeding their stock, selling, or agisting and investigate the financial implications over different timeframes. myStockPlanner can export a complete farm plan that producers can use to apply for infrastructure grants, communicate with lenders, or have better conversations within their farming business.*

Key words: climate extremes, drought, feed balance

Introduction

Significant and persistent rains across many areas of NSW through February and March 2021, following on from long-term drought (2017–19) and the Black Summer bushfires (2019–20), caused widespread damage and reduction in agricultural productivity across NSW extensive livestock industries including beef and sheep (lamb and wool). The extensive livestock sector identified the need for tools and processes to build the confidence of producers in decision making in relation to disturbances from storms, flood and drought and to support emergency response. Producers often have low confidence in the decisions needed to respond to these disturbance events because these decisions are made infrequently, information provided to them is often general and not tailored to their business, and they may not have the experience, skills and tools to make decisions effectively. High stress levels further exacerbate decision making problems (Fragar *et al.* 2008). There is an increasing

frequency of extreme weather events occurring as climate change intensifies (CSIRO and BoM 2015) and the capacity of producers to respond to these events needs to be enhanced to ensure the impacts to the extensive livestock sector can be minimised. This project aimed to develop a contemporary climate risk planning and decision support package for extensive livestock producers — ‘myStockPlanner’ — bringing together new and existing decision support tools under one platform to address this need.

Methods

The intent of the project was to develop a contemporary climate risk planning and decision support package for extensive livestock producers. Existing NSW DPIRD decision support tools (DST) such as StockPlanTM (McPhee *et al.* 2013), and the Drought and Supplementary Feed Calculator (Casburn *et al.* 2020) formed the foundations of the new platform, which would also incorporate more recent NSW DPIRD research known as ‘Trigger Points’ (Alemseged 2021) and ‘Grazing Intelligence’ (Badgery *et al.* 2023).

A human-centred design approach was employed to identify opportunities (Table 1) and ensure that the solution genuinely addressed user requirements.

The opportunities were turned into use cases – valuable features that address user problems – which were then built into a minimum viable product (MVP). The build employed a sprint process commonly used in software development allowing for collaboration and co-creation through multiple, iterative design and build cycles. Throughout the build cycles, the system was able to be tested to ensure that the calculation engine was functioning as expected; and via limited piloting with users to validate that the system meets business requirements and is ready for real world use.

Results

The three priority user problems identified were 1) optimise feeding plans; 2) navigating choices on feeding, selling or agisting; and 3) managing costs effectively.

The calculation engine was built from published equations and tested against either the output of existing tools or biophysical models such as Grazfeed® and Grassgro®.

Pasture lookup tables were generated using regionally representative livestock production systems in AusFarm (Hermann *et al.* 2024).

The ‘public beta’ version of myStockPlanner was launched by Minister McBain and Minister Moriarty on 23 October 2025.

Table 2 provides a ready reckoner of valued features of legacy tools and their location within the myStockPlanner toolkit.

Discussion

The software build process delivered a progressive web application (PWA) – [myStockPlanner](#) – with mobile-specific features and offline capability freely available to NSW producers. The myStockPlanner platform comprises a dashboard (landing page), with access to four tools – feed inventory, compare feeds, create feed mixes, and test livestock scenarios. Supporting resources to facilitate self-paced, ‘just-in-time’ learning are available online ([myStockPlanner Learning Guides](#)).

Throughout the design, build and pilot phases, and post-launch of the ‘public beta’ version, detailed feedback has been received. This feedback (over 600 individual pieces in the pilot phase alone) has been mapped into a workplan for future development. Priority features have been identified, and plans are in place for an improved version to be built over the next few months.

Table 1. Opportunities to update decision support tools identified through stakeholder interviews.

Producers	Advisors
• Intuitive user experience – steps need to make sense, be logical and simple • Easy data export to enable use of outputs with other Excel documents • Interoperability with other systems and sources to collate current and historical farm information • Have a cut down version of the tool with the option to view the details in a full version • Training and communication to producers, including background support staff	• Better reporting functionality where costs and numbers need to be quick and easy to display to farmers • Centralised platform to show tool offerings in one spot • Case studies from support tools for producers to interpret • Better import and export functionalities to provide flexibility with other tools being used • Consistent messaging – clearly articulate the purpose and benefits of tools • Simplified interface with help guides along the way to reduce training requirements and increase user confidence

Table 2. Ready reckoner of features – myStockPlanner and legacy tools.

Valued feature	Legacy tool	Tool within myStockPlanner
Assess whether livestock requirements are met from pasture	Drought & Supplementary Feed Calculator	Feed mix Livestock scenarios
Estimate livestock supplementary feed requirements	DroughtPack Drought Feed Calculator Drought & Supplementary Feed Calculator	Feed mix Livestock scenarios
Cost effectiveness of various feeds	Feed cost calculator	Feed comparison
Feed inventory	Drought & Supplementary Feed Calculator	My Feed Record
Create a feed mixture	Drought Feed Calculator (3 feeds) Drought & Supplementary Feed Calculator	Feed mix
Quantities and costs of feeding	Drought Feed Calculator Drought & Supplementary Feed Calculator	Feed mix
Economic assessment of stock reduction strategies	Feed, Sell, Agist Impack	Livestock scenarios
Farm feed balance	NEW	Dashboard Livestock scenarios

Where previous DST were delivered via a structured learning program, myStockPlanner has been developed to enable bespoke learning activities to match the seasonal and business context. One of the key tenets of myStockPlanner has been use as a ‘business as usual’ tool to enhance preparedness, so that when faced with a business disruptor livestock producers have a plan in place so that critical decisions are not made when under extreme stress.

Conclusions

myStockPlanner integrates climate risk assessment and tailored scenario-based decision support to help livestock producers maintain business continuity during feed deficits.

myStockPlanner identified and selected valuable features from legacy NSW DPIRD decision tools, amalgamated them with new research outputs and uplifted them into a newer intuitive package. We understood that to build confidence and belief in the value of that new technology, we needed to rely not only on robust user-centred design but also on the people who would champion the software to next users or end users. We’ve learnt

that in a research translation context: we need to run parallel product and service development streams; we need to consider where our technology solution and our service solution fit in the broader user landscape; we need to check our assumptions about user needs and interaction with tool for the service; and we need to learn from our own and our peers’ previous experience.

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