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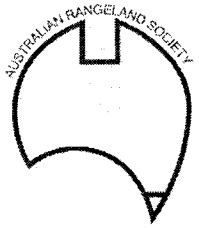

The Australian Rangeland Society

DATA MANAGEMENT IN THE MURRAY DARLING RANGELANDS CONSERVANCY SWE TRIAL

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ABSTRACT

Sustainable Wildlife Enterprises (SWE) is a property-level stewardship initiative that sets out to trial the sustainable commercial use of wildlife. The objective is to create alternative revenue streams for rangeland managers while achieving net conservation benefit, including the restoration of habitat on private lands (Wilson & Mitchell 2005). *AEMS Farm Solution*© has been implemented as a data management tool, to improve the capacity of land managers within the Murray Darling Rangelands Conservancy Inc. (MDRC Inc) to put in place holistic property and wildlife management plans, monitor system and performance outcomes, and communicate information. The web-based planning system has legal compliance and continual improvement elements and is being designed to allow for the maintenance of GIS and agronomic data, and for the control of land based activities, including natural resource management. Integration of management systems and secure data sharing is at the core of the data management approach. The objective is to provide a system that is producer friendly, appeals to industry, NRM regulators and other service providers, and enables verification of product integrity.

DATA MANAGEMENT REQUIREMENTS

Data generated from the SWE trial has need of a single, integrated system that is capable of generating information which:

1. demonstrates production/financial outcomes and net conservation gain from augmenting sustainable production practices with wildlife enterprises
2. provides data security while also allowing data sharing capabilities
3. has an integrated process and performance system structure
4. generates data that assists the development of marketing initiatives for wildlife products
5. incorporates property and regional scale natural resource, environmental and social parameters to demonstrate a defined level of certification

The development of the data management system has required a number of issues to be addressed that include system and data integration, and data sharing. The continuous improvement data management model is illustrated in Figure 1.

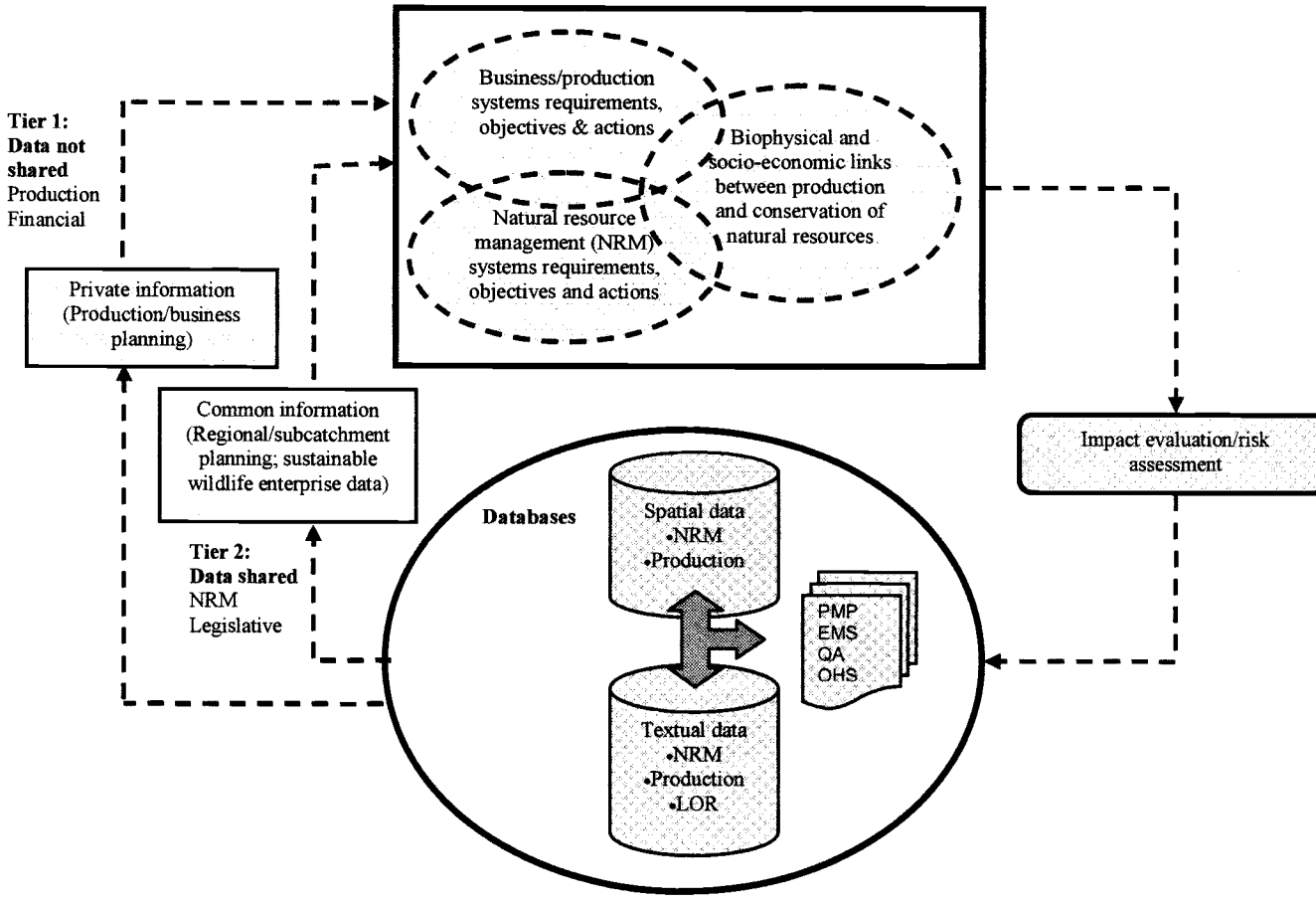

Figure 1: Continuous improvement data management model

DATA MANAGEMENT CAPABILITIES

The data management approach is centred on integrating systems and providing a secure platform for data sharing. The approach recognises that stand alone, static, document control systems have been proven to be cumbersome, out-of-sync with land manager's mindsets and generally inaccessible (URS 2004). The system is based on risk assessment and the principles of PLAN>DO>CHECK>ACT that underpin an EMS, but takes reporting and assessment beyond ISO-type process systems, to include performance assessment. The inclusion of rigorous financial tracking provides an important assessment tool for enterprise performance, which can be integrated with other resource tracking and performance criteria related to natural resource management and social outcomes.

Tiered Entry

Users are able to undertake a staged approach to EMS, achieving different levels based on personal requirements or objectives set by the Wildlife Management Conservancy (WMC). For example, users can enter at a compliance level and progress to industry best practice. The system provides a framework for assessing performance through auditing at 1st, 2^{n4} and 3^{r4} party levels as desired by individual land managers or as required for certification compliance. An important element of the tiered entry approach relates to potential payment schemes for environmental stewardship, recognising that the wider community is unlikely to be willing to pay for stewardship outcomes that land managers are legally obliged to meet.

Data Integrity & Consistency
Data integrity and consistency has been considered in a number of ways to ensure quality standards are being met. This includes records, where appropriate, for:

- Recorder(s)/observer(s) and site identification
- Training/expertise held by recorder(s)/observer(s) in procedures and equipment use
- Type and condition of recording equipment (eg maintenance and calibration schedules)
- Additional skills/partnerships utilised in recording information
- Information sources used in reaching data conclusions (with links to resources)
- Sampling methods and sampling effort
- Date and timing of recording(s) and other influencing variables (e.g. weather conditions)

Conservancy members highlighted the importance of observational data routinely collected by land managers to augment scientifically rigorous monitoring regimes. Recognising the need for data integrity and consistency, facility has been provided for this type of data collection.

Data Sharing
An entirely innovative aspect of the data management approach has been to enable the web-based property planning package for a seamless transfer of spatial and textual data from land managers to industry bodies, NRM regulators, financiers and other service providers according to need. The system allows land managers to enter and store data against a property/wildlife management plan, while sharing specific information with a chosen service provider in one operation. Data transfer is protected through strict security provisions and permissions. This innovation provides a wide range of data sharing opportunities, including integration of data at subcatchment and regional scales and meeting of various reporting obligations.

Flexibility in Reporting
The system is flexible to various reporting needs, including those of a proposed Stewardship Certification Scheme. This requires the capacity to report against various performance indicators as they relate to management activities, operational inputs and outputs, and the overall health of the environment (e.g. landscape function, biodiversity measures). The system is also capable of managing data associated with various indicator types. This includes environmental parameter indicators (such as habitat or landscape condition), surrogate indicators (such as area of native vegetation fenced as an indicator of habitat/biodiversity protection), and leading or adoption based indicators (such as number of targets or training courses achieved).

CONCLUSION
Australian agricultural producers are faced with an increasingly complex management environment. Community expectations for meeting environmental stewardship and quality assurance standards, legal and other requirements, and the need for managing and integrating multiple farm systems are all contributing to this complexity. To enhance sustainability outcomes, management systems also require a capacity to respect property boundaries, whilst recognising the necessity for objectives to encompass sub-catchment and catchment boundaries and/or other landscape attributes.

The property/wildlife management planning system being implemented within the MDRC Inc. is attempting to address these issues and meet the objectives of the RIRDC SWE trial in a number of ways. This includes providing a single integrated approach to data management that has relevance to land managers daily practice, and flexibility in terms of developing and

meeting system and performance standards and requirements. By operating off a web-based platform, solutions to efficient data sharing among NRM groups, industry bodies, financiers and others is being explored. The objective is to find innovative solutions for integrating new forms of natural resource management with traditional agriculture and agricultural practices, improving land manager's capacity to identify and solve problems and make informed decisions.

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