

# INNOVATION PROFILE



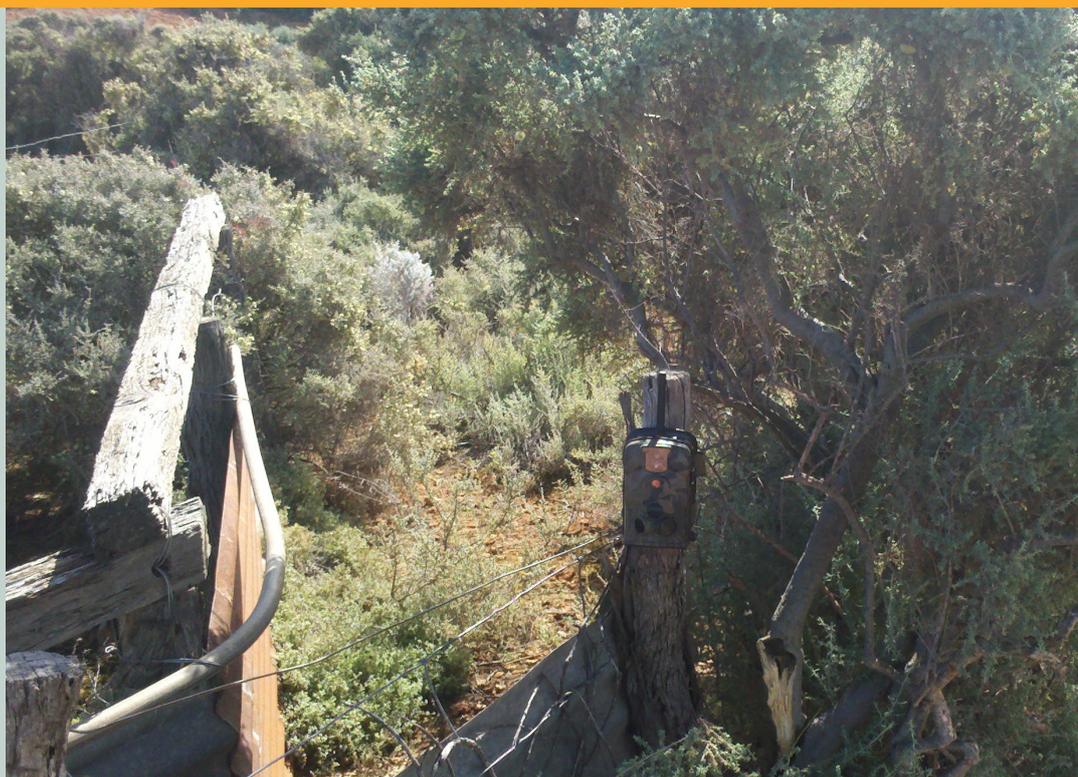
## BUSINESS SNAPSHOT

### BRIEF ENTERPRISE DESCRIPTION

Pastoral wool and sheep enterprises

### WHY THIS IS A PASTORAL ZONE INNOVATION

Farm security in the pastoral zone can be an issue given the size and remoteness of properties and time between visits. Motion sensor cameras provide a level of security, enabling the producer to remotely check a property, as well as monitor the health and safety of the sheep.



## Motion Sensor Camera

On a pastoral station, the distance between the homestead and paddocks can be hundreds of kilometres. By placing a camera at the farm gate, around dams and other places of interest, it can remotely give a real snapshot of what is happening on the property.

The information relayed by the cameras can show the behaviour of sheep, the number of wild animals drinking from dams, who is accessing your property and capture details of anyone who shouldn't be there.

This innovation is using motion control cameras for farm security and to monitor the health and safety of sheep.

Figure 1: The motion control camera set-up.

## WHAT WAS THE MOTIVATION TO CHANGE?

For some pastoral producers, the initial purpose to install motion sensor cameras is for farm gate security. From the outside, a pastoral property can appear empty or abandoned which can attract trespassers.

People may trespass when looking for firewood. This may be relatively low risk however, it still may pose a biosecurity risk to the sheep. The level of risk increases when fuel tanks are tampered with and shearing sheds are broken into. When people trespass on your land for spotlighting or shooting, there is always a risk as they are unfamiliar with your land.

These are all issues that a pastoral producer doesn't want to deal with.

## HOW DOES THE INNOVATION WORK?

The camera senses a motion and takes a photo.

The cameras can be installed in any reasonable location. A common location is up a tree, to provide protection from damage, animals and the weather. It also provides a good view of action on the ground.

Often the cameras installed are hunting cameras that are activated by motion. They can take a photo in 0.8 seconds and produce a 12 mega pixel image. There are many types of cameras and they can take photos, and record video and sound.

## KEY FEATURES

The key features of the motion sensor cameras are as follows:

- Increase farm security by capturing unusual behavior and acting as a deterrent for people who know the property is protected.
- Depending on the camera features, it can take a photo when triggered by movement, or take a photo at a set time, e.g. once a day, once an hour.
- Depending on the level of technology that is integrated with the cameras, notifications can be set-up for particular cameras to send a text message or email.
- When the camera is connected through the internet and mobile system, the camera can be directed to take a photo at any given time without motion activation.
- The camera is approximately the size of your hand and is easily moved and mounted.

## WHAT ARE THE KEY BENEFITS?

The key benefits of the innovation are as follows:

- Provide additional security for remote stations.
- Provide information on sheep health welfare from images taken at water points.
- It is ideal during busy times of the year, such as shearing when workload increases and reduces the available time for travel to visit the station. A feature of this technology enables the remote station property to be checked via photos on smart phones.
- After a paddock is mustered, a camera can be installed on the water point to detect any sheep that were missed during the muster. You then know what time of the day the stray animals come in for water, so they can be easily re-mustered.
- It can help understand the characteristics of sheep, for when they come in for a drink and what direction they come from.
- When used for water telemetry, it can help identify water levels in troughs and tanks.
- More efficient and cost effective than travelling out to check the property regularly.

Figure 2: Setting up a motion control camera, obscured by the bushes.

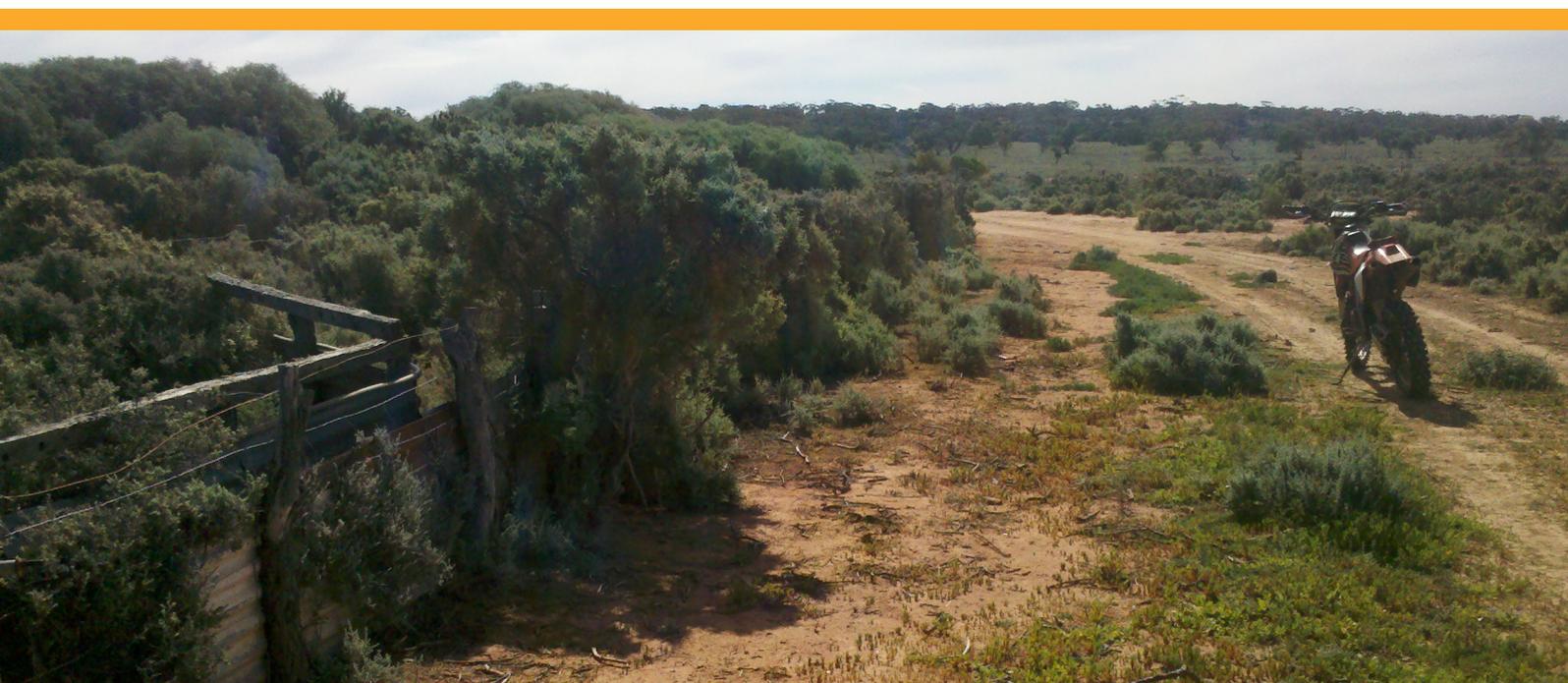




Figure 3: The motion control camera undetectable from a distance.

## KEY RESOURCES REQUIRED FOR THE INNOVATION

The key items required for the innovation are:

- Camera.
- Memory card in camera.
- Computer to download photos.
- An appropriate mounting location.
- Mobile phone reception and access to the web, if integrated with telemetry technology.

## WHAT COULD BE DONE DIFFERENTLY NEXT TIME?

It can take trial and error to refine the best locations and angles of the cameras. Some lessons that pastoralists have learnt from working with the cameras include the following:

- Be aware of where the cameras are placed and choose an area that is hidden but isn't obstructed. The sensor may pick up the motion of vegetation moving in front of the camera. This will activate the sensor and capture unwanted images.
- The angle of the camera must take into consideration environmental factors, such as glare or shadows.
- If all photos are set to upload automatically to the web, the data required may be quite large and therefore costly.
- Understand the settings of the camera. You may be able to set the time lapse between photos. For example, it can be set at 30 second intervals to provide a good indication of the situation without taking too many photos.
- When using it as part of security, you must install signs to indicate to the public that they exist and their image may be taken if trespassing.
- Each camera differs in the level of technology and telemetry. Some cameras only capture still images onto a memory card within the camera, which is then manually downloaded to a PC. Other applications require mobile phone service when integrated with telemetry technology.

Overall those producers who have installed the cameras are very happy with innovation. They continue to benefit from the additional security and look forward to further agricultural applications for remote monitoring of sheep.

## FURTHER RESOURCES

The cameras can be purchased online or from a number of stores. It's recommended to shop around to purchase a camera that is right for your purpose.

## LOOKING FORWARD

Some producers are keen to explore what else the new technology can do. Farms can combine this technology with water telemetry, and install fixed cameras at water points on the station. There are pros and cons with using cameras as part of water telemetry, as discussed in the Water Telemetry Innovation Profile and Options for Water Telemetry Business Case. Although data shown on a graph is more useful, some producers like seeing photo evidence.

This option is ideal for pastoralists who want to keep an eye on water security. When the images can be remotely downloaded, it saves time driving to the paddocks to check water levels.

One caution is that these cameras can use large amounts of data and some applications are not always practical. The photos can be set-up to take one or two photos a day, rather than be triggered by motion each time to take a photo. For a pastoral producer, it is peace of mind

knowing the sheep have water.

## COST BENEFIT ANALYSIS

Over time the cameras have reduced from \$300 to be approximately \$150 for a camera with a 20ft range and approximately \$200 for a camera with a 70ft range.

You may do three trips a fortnight for peace of mind that there is water in the trough. With the cameras installed and connected to telemetry, you may plan to reduce the number of trips to only clean troughs, rather than also to check the troughs have water. This can save on travel time and vehicle wear and tear.

## THE FINAL WORD

"All farms should have them. You can put it in, walk away and know you can remotely check your property without the drive."

Bestprac acknowledges the contribution of pastoral producers in the development of this innovation profile.

To view more innovation profiles, business cases and videos of innovations in the pastoral zone, visit the Bestprac website [www.bestprac.info](http://www.bestprac.info)



Figure 4: Watering troughs that can be remotely monitored through technology.