



Sm@ll Ruminant Technologies

Drone



Need:

- Surveillance of animals on pasture and unfenced rangeland
- Surveillance of fence and other installations
- Moving of sheep, particularly in autumn / before winter and in rocky landscape to reduce health and safety risk
- Documentation

Aim:

- Save time and effort checking on animals in mountain rangelands and pastures
- Save time and effort when moving animals – for example gathering sheep in autumn
- Pictures taken by drone can be used for documentation
- Increase safety for people collecting animals in challenging terrain
- Inspect fences, buildings and other installations that are not easily accessible

Description:

Drones can be used to monitor animals on pasture – checking on their health and whereabouts. This enables the farmer to check stock, for example if ewe and lambs are together. The camera can zoom in from a distance to get detailed information, without stressing the animals. Thermal camera can be used, particularly in forest areas, to help detect sheep.

Drones can also be used to move sheep. The pilot can remain in a fixed position or choose a safe and easy path, using the drone to guide animals.

Autonomous drones for 'Search and Rescue-missions' is, as of now, not allowed.

How to Implement:

- Purchase a drone (in Norway it is common that farmers with sheep in the same rangelands collaborate.)
- In order to obtain a license to fly a drone, you need to complete a course on regulations (Norway).
- Learn how to operate the drone.
- Fly drone in rangeland areas and pastures, as required.
- With an open category license the drone must be flown in Visual Line of Sight (VLOS)

Country:



Norway

Production System (dairy or/and meat sheep/goat):

Sheep and goat

Category of

Animal : ewe, goat, replacement, lamb, kid

Source of Information:

Personal communication with Norwegian farmers

Attachment/links:


[Sm@RT solutions Norway Drone \(youtube.com\)](#)



Expected Benefits:

- Labour saving
- Knowledge of conditions in rangelands
- Detection of animals
- Less stress for farmer and animals
- Documentation

Costs and Challenges

- Cost: 800 – 7000 €
- Subscription required: No
- Ease of use? Scale 1 (Complicated) – 10 (Simple)

- Value for money (for this type of benchmark farm)? Yes
- Recommend this tool/technology for use on other types of farm? Yes
- Requires pilot training and a license: The open category licence (Norway) allows drone flying in 'Visual Line of Sight (VLOS)'.
• For drone pilot to fly Beyond Visual Line of Sight (BVLOS) there is a need for an advanced license and drone.
- Use of drone may be restricted by weather conditions (wind, rain).
- Battery capacity restricts flying time.

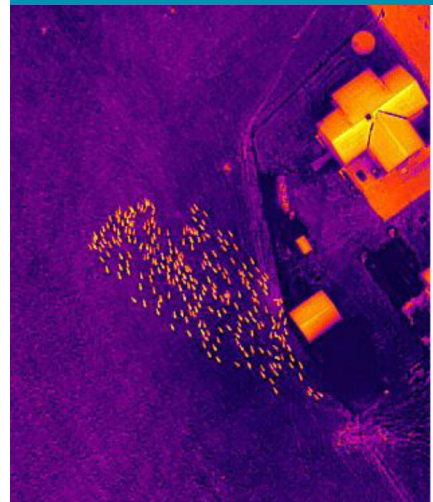
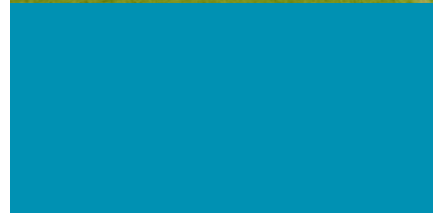
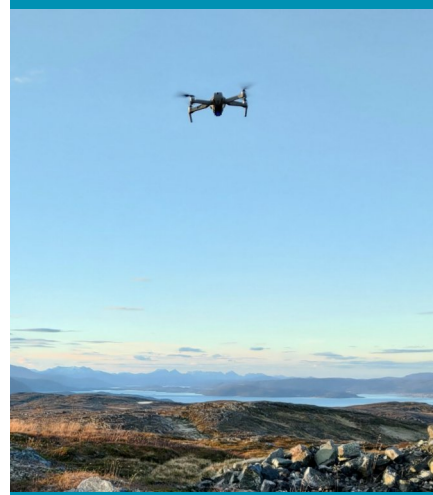


The drone is very useful in the management of my farm. It does not replace a good sheep dog or GPS-tracking of the ewes in the rangelands, but it is certainly a good supplement to those things.

Sheep Farmer from Norway



It would take 13 years for 98% adoption in Norway.



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