

Transforming veterinary processes from clipboard to dashboard

Department of Agriculture, Environment and Rural Affairs

The Challenge

- Modernise the entire disease inspection process

The Benefits

- Faster animal disease interventions
- More efficient farm inspections
- Consistent assessment of animal health risks
- Clear visibility of 'the bigger picture'

The Veterinary Service Animal Health Group within DAERA has completely transformed its animal disease investigation process, swapping paper forms on clipboards for field-based survey apps and online dashboards. Using its new digital workflows, DAERA can now respond more quickly to disease outbreaks and instigate the most appropriate measures to prevent the spread of disease.

The Challenge

In more than thirty years, the animal disease investigation process in Northern Ireland had changed very little. The farm maps used by Animal Health and Welfare Inspectors during farm visits were still printed out on paper, taken out into fields in all weathers and annotated on farmhouse kitchen tables. In addition, a vast amount of data, on everything from the locations of diseased animals to the presence of badger sets and the number of neighbouring farms, was collected manually in paper-based forms on clipboards and written up into reports later. The whole approach was resource intensive, inefficient and in urgent need of digital transformation.

The Solution

The Veterinary Service Animal Health Group (VSAHG), a business area of the Department of Agriculture, Environment and Rural Affairs (DAERA), appointed Esri Ireland to help it modernise the disease investigation process. Throughout the project, Esri Ireland worked closely with Veterinary Officers and DAERA's internal GIS team, passing on knowledge of how to optimise the use of the ArcGIS solutions available to DAERA through its Enterprise Agreement. Esri Ireland helped to capture business requirements and build a suite of ArcGIS web apps resulting in field-based solutions and dashboards.

Animal Health and Welfare Inspectors now use ArcGIS Survey123 on iPads to gather evidence to investigate outbreaks of Tuberculosis (TB). This interactive, digital, form-based survey replaces 6-page, paper-based questionnaires and automatically generates a biosecurity score for each farm, based on a pre-determined weighting of numerous farm practices. It also generates a risk score for each separate parcel location, based on a pre-determined weighting of known hazards. Another Survey123 workflow has been developed to survey hygiene practices in meat processing plants, and further similar mobile data capture solutions are planned, including one for managing outbreaks of Avian Influenza as a template for other Epizootic Diseases.

All data collected in the field is instantly uploaded to ArcGIS Enterprise, known internally as the DAERA Information Hub, and shared via ArcGIS web apps. For example, veterinary staff use a web app to view TB surveys and access all the information they need to make decisions about any follow-up actions to limit the spread of disease. They can use the web app to search by herd number or by location, view TB reports in pop-up boxes and export data into reports. A similar web app displays the locations of avian influenza outbreaks, making it easy for veterinary staff and other stakeholders to see where cases have been detected and which farms are within designated surveillance areas. A public external viewer is now available for poultry keepers to see the detail of all Control Zones and Trade Restriction Areas on the DAERA website.

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Finally, information on the progress of inspections is displayed in ArcGIS Dashboards. Managers can see, at a glance, how many TB risk assessments have been completed, what the level of risk is and how many further inspections are outstanding. Common sources of infection and the important hazards can now be easily quantified, and the ArcGIS Dashboard provides easy access to all the information managers need to manage TB inspections across the whole of Northern Ireland. “We have transformed the data collection process – from clipboard to dashboard,” says Alan Clements a Veterinary Officer in the Veterinary Service and Animal Health Group. We shall soon be adding farm maps using the ArcGIS Collector app, allowing digital annotation of relevant spatial risks.

“ ArcGIS Pro reduces the need for a high number of design resources to deliver such a huge project, creating significant annual cost savings. ”

Alan Clements, Veterinary Officer, Veterinary Service and Animal Health Group, DAERA



Inspectors use ArcGIS Survey123 to capture data in the field

The Benefits

Faster animal disease interventions

The end-to-end process, from surveying a farm to evaluating the data collected, determining follow-up actions and arranging interventions, can now be completed far faster than before. The ArcGIS web apps provide veterinary staff with instant access to all the information they need to make their professional judgements more quickly and ensure the most appropriate action is taken to halt the spread of disease in Northern Ireland.

More efficient farm inspections

Animal Health and Welfare Inspectors no longer have to write up their reports and don't have to spend as much time travelling to and from the office to collect printed maps or to deliver reports. Consequently, they can work far more efficiently and complete significantly more inspections in the same amount of time.

Consistent assessment of animal health risks

The new ArcGIS-based survey method allows animal health risks to be recorded and weighted in a standardised way. DAERA policies can then be applied fairly and consistently across all farms throughout Northern Ireland, without regional variations. As Clements observes, “The use of ArcGIS moves risk assessments away from opinion and towards impartial evidence. This evidence based approach is a more solid base for TB policy decisions.”

Clear visibility of ‘the bigger picture’

The new ArcGIS-driven process for disease investigations enables the Veterinary Service and Animal Health Group to see what Clements calls “the bigger picture.” Managers can use the ArcGIS dashboard to better manage and monitor the work of over 100 inspectors working across the whole of Northern Ireland. Meanwhile, veterinary staff can use ArcGIS web apps to access data on up to 6,000 TB inspections per year, as well as outbreaks of Avian Influenza, and better understand animal health risks.

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