1st: Farmers

Goals & Needs:

1. Monitor regional livestock trends to inform decisions (e.g., breeding, purchasing, or market timing).
2. Benchmark their farm's performance against regional averages.
3. Access real-time data on feed availability, disease outbreaks, or climate impacts.

Who they are: Farmers managing livestock in various regions of New Zealand, including sheep, cattle, and deer farmers. They may be small-scale or large-scale producers.

Needs: Quick and easy access to livestock numbers in their region and comparisons with other areas. They may also be interested in trends over time to help with planning.

Design Implications:

1. Mobile-First & Optimized for Field Use: Design primarily for websites and smartphones, ensuring quick loading, easy navigation on the go, and suitability for field conditions.
2. Simple & Intuitive Interface: Use clear language, minimal technical jargon, and straightforward navigation for ease of use.
3. Clear & Concise Visualizations: Employ easy-to-understand charts (like line graphs, bar charts, heatmaps), maps, and tables for presenting trends, comparisons, and density data effectively.
4. Practical Farm Management Tools: Integrate relevant calculators (e.g., emissions, feed requirements, land use) to add direct value.
5. Localized & Timely Alerts: Provide notifications specific to the farmer's region regarding weather, disease risks, feed availability, climate impacts, or policy changes.
6. Offline Access: Offer offline capabilities or downloadable reports to accommodate areas with poor or no internet connectivity.

2nd: Government & Policy makers

Goals & Needs:

1. Assess policy effectiveness (e.g., emissions regulations, subsidies).
2. Identify regions needing support (economic or environmental).
3. Validate data accuracy for compliance reporting.

Who they are: Officials in agriculture, economics, and regional development, responsible for making policies affecting farming and rural communities.

Needs: Reliable data for decision-making, policy formulation, and resource allocation. They require both current and historical data trends.

Design Implications:

1. Data Exploration & Filtering: Provide interactive filters allowing users to drill down and analyze livestock data by region, species/type, and time period (year).
2. Exportable Reports & Summaries: Offer downloadable reports (e.g., PDF, CSV, Excel) containing data and pre-formatted summaries suitable for analysis and compliance reporting.
3. Policy Impact Visualization: Include features to overlay policy implementation timelines onto livestock trend data to help assess effectiveness.
4. Compliance Monitoring Dashboards: Design dashboards that clearly highlight regions meeting or missing specific targets (e.g., methane reduction goals).

5. Quick Insights & Visuals: Incorporate infographics and high-level summaries (on dashboards or in reports) for rapid understanding of key trends and statuses.
6. Accessibility: Ensure the platform meets relevant accessibility standards for government use.

3rd: Researchers & Academics
Goals & Needs:
1. Analyze long-term trends (decades) for academic studies.
2. Cross-reference livestock data with environmental/economic datasets.
3. Access raw data for modeling or peer-reviewed research.

Who they are: Scientists, university lecturers, and students studying agricultural science, economics, or environmental impact.
Needs: Granular data for in-depth analysis, including historical trends and regional differences.

Design Implications:
1. Programmatic Data Access (API): Provide a well-documented API to enable researchers to directly integrate raw and processed data into their analytical workflows and tools (e.g., R, Python, GIS software).
2. Comprehensive Historical Data: Offer access to extensive, downloadable historical datasets (spanning decades where possible) to facilitate long-term trend analysis.
3. Advanced Data Exploration & Visualization: Implement sophisticated filtering, search capabilities, and interactive visualizations (e.g., multivariable charts comparing livestock data with environmental/economic factors, graphs with zoom/hover) for detailed analysis within the platform.
4. Data Transparency & Provenance: Ensure clear documentation of data collection methodologies, source citations, and comprehensive metadata to support academic rigor and proper citation.

4th: Agribusiness & Investors
Goals & Needs:
1. Identify growth regions for investment (e.g., dairy vs. sheep).
2. Forecast market shifts (e.g., rising beef demand).
3. Track competitor activity or supply chain opportunities.

Who they are: Companies involved in livestock products (e.g., meat, dairy, wool) and investors looking at market trends.
Needs: Market trends, livestock distribution, and potential business opportunities.

Design Implications:
1. Business Intelligence Dashboards & Summaries: Provide customizable dashboards and concise executive summaries highlighting key performance indicators (KPIs), market trends (e.g., growth by livestock type), regional variations, and potential investment opportunities (e.g., "No. 1 Region for Dairy Cattle," stocking rates, export volumes).
2. Geospatial Analysis & Visualization: Implement interactive maps (e.g., heatmaps) to visualize livestock density, production hotspots, growth regions, and potential supply chain impacts.

3. Predictive Analytics & Scenario Modeling: Include tools for forecasting market shifts based on historical trends and allow users to model the potential impact of external factors (e.g., droughts, policy changes, export tariffs) on livestock populations or market conditions.
4. External Data Integration: Offer capabilities to integrate or cross-reference livestock data with relevant external market reports or economic indicators for richer context.

5th: Environmental & Welfare groups
Goals & Needs:
1. Monitor livestock's environmental impact (e.g., water pollution, deforestation).
2. Advocate for welfare standards using regional data.
3. Share compelling visuals for public campaigns.

Who they are: NGOs, conservationists, and animal welfare advocates concerned with sustainability, climate impact, and ethical farming.
Needs: Insights into livestock density, environmental effects, and welfare standards.

Design Implications:
1. Environmental Impact Visualization: Provide tools to visualize livestock concentration (e.g., heatmaps) and overlay this data with relevant environmental datasets (e.g., deforestation maps, water quality indices, land use) to illustrate potential impacts.
2. Welfare Indicator Tracking: Incorporate and allow tracking of metrics relevant to animal welfare, such as stocking density or potentially links to regional compliance data (where available and appropriate).
3. Advocacy & Communication Tools: Offer features for creating compelling, narrative-driven visuals (e.g., story maps, infographics) focused on sustainability and welfare insights, with easy export options suitable for social media, press kits, and public campaigns.
4. Data Transparency & Accessibility: Ensure clear, accessible presentation of data and methodologies to support credible analysis and advocacy efforts.