

Action Plan

Team	John Nowatzki,
Program Title	Unmanned Aircraft Systems (UAS) – Agricultural Applications
Program Coordinator(s)	John Nowatzki,
Situation	The economic impact of UAS in North Dakota is estimated as \$83 million during the 10 years from 2015 to 2025, with a national impact of \$82 billion. Precision agriculture is considered as a major application of UAS. The major stumbling block in the adoption of UAS in agriculture is the lack of proof of concept and methodologies for adopting UAS data in crop and livestock management.
Objectives	<ol style="list-style-type: none"> 1. Describe the use of color, infrared and thermal sensors on multiple UAS platforms for UAS agricultural applications. 2. Develop economic standards for selecting UAS aircraft and sensors to provide usable crop, range and livestock production information. 3. Identify methods for transferring UAS data from the field to processing centers. 4. Identify data processing methods to produce usable information for crop and livestock management.
Extension response (planned activities – meetings/workshops, bulletins, field days, etc.)	<ol style="list-style-type: none"> 1. Conduct UAS applied research and Extension projects: <ul style="list-style-type: none"> • “Proof-of-concept” UAS applications research project at the NDSU Carrington Research Extension Center. • Conduct UAS Energy-Environment-Agriculture Research to Enhance ND Economic Development at all NDSU REC’s. 2. Conduct one-day UAS Data Management Workshops <ul style="list-style-type: none"> • Invite producers and personnel who use UAS to share data management issues and solutions. • Invite image analyses service companies to demonstrate their software and solutions. 3. Conduct UAS flight demonstrations at NDSU REC Field Days
Evaluation plan/tool	<ol style="list-style-type: none"> 1. Survey workshop participants for their assessments. 2. Survey producers who use UAS to evaluate their assessment of NDSU Extension UAS educational programs.
Anticipated impacts	<ol style="list-style-type: none"> 1. Increased UAS use for crop and livestock management. 2. Increased requests for Extension education programs.

