Coming to a Cornfield Near You: The Global Race to Precision Agriculture and Use of UAVs

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The days of the horse-drawn plow are far behind us, and the age of precision agriculture is quickly taking over. By collecting real-time data on weather, soil and air quality, crop maturity and even equipment and labor costs and availability, farmers can make predictive decisions about how to manage their crops.[i] Scientists around the world believe that precision agriculture will be the solution to answering the world's food production challenges that will inevitably arise as the global population increases.[ii]

Precision agriculture has opened the door for a brand new type of agricultural technology in the form of unmanned aerial vehicles (UAVs) in agriculture. The most practical applications of unmanned aerial vehicles in agriculture have taken place in countries like the UK, Australia, Canada, and Japan.[iii]
These countries have fewer airspace regulations than the United States, allowing UAV use to become more popular.[iv] The U.S. currently allows commercial drone use based on a permit system.[v]

However, drones are already in use on farms across the country in an attempt to better manage crops and to develop long-lasting agronomic technology.[vi]

Countries like Canada and Japan have embraced drone technology for agricultural use and have been flying UAVs over farms for years.[vii] UAVs have been in use in Japan for agricultural purposes since 1980 in response to an aging farming population.[viii] The most UAV-friendly country is Australia, requiring only "easily attainable identification."[ix] Most countries make distinctions between commercial and recreational drone use, similar to the U.S., but have fewer guidelines.[x]

The drone economy in the U.S. is poised and ready to take off the minute the FAA decides how to regulate commercial drone use. However, it may take longer than many agronomists would like. The U.S. Department of Transportation has reported that the FAA is unlikely to make the original September 2015 deadline for new UAV regulations.[xi]

According to the Association for Unmanned Vehicle Systems International (AUVSI), the legalization of commercial drone use in the U.S. could generate up to $82 billion dollars in revenue and over 100,000 jobs.[xii] Farmers across the country are ready to bring their flying machines out from the shadows and create a more efficient and productive agricultural industry. If forced to wait much longer, U.S. farmers could see much of the global industry passing them by.

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[i] Precision Agriculture: Using predictive weather analytics to feed future generations, research.ibm.com,

[ii] Id.


[iv] Id.

[v] Christopher Driver, Growing use of drones pays off in crop spraying, USA TODAY (Mar. 20, 2014, 7:19 AM),

[vi] Clay Dillow, Despite FAA dithering, a drone economy sprouts on the farm, Fortune, (September 16, 2014, 6:31 PM),

[vii] Id.

[viii] Embry-Riddle Aeronautical University, http://commons.erau.edu/cgi/viewcontent.cgi?article=1061&context=aircon&sei-redir=1&referer=http%3A%2F%2Fscholar.google.com%2Fscholar%3Fhl%3Den%26q%3Ddrones%2Bagriculture%26btnG%3D%26as_sdt%3D1%252C18%26as_sdtp%3D#search=%22drones%20agriculture%22 (last visited September 21, 2014).


[x] Id.

[xi] Dillow, supra note vi.

[xii] Id.