

Who Can Own Farm Data?

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In the previous article, the notion that farm data aggregated into a community truly fit the concept of 'big data' was demonstrated. For many agriculturists, the more important issue is data ownership. The question of who owns farm data goes back at least to the advent of precision agriculture in the 1990s. Data ownership, privacy, and security have cyclically been hot topics since then but have recently peaked with 'big data'. When discussing ownership of physical goods such as commodities, machinery, and farmland, it is intuitive what 'ownership' means. Farm data does not fit many preconceived notions of 'ownership' like these physical examples.

The legal perspective of farm data ownership has been addressed individually by Extension agricultural attorneys including [Tiffany Dowell](#) and [Shannon Ferrell](#) and at least one attorney in private practice, [Todd Janzen](#). Complementing their work, I describe how economic principles apply to farm data that are digital and have very different characteristics than physical goods. Copies of digital data can be made at relatively zero cost and are indistinguishable from the original. Given that copies are identical to each other and the original, very minimal control exists over what happens to that data once copies have been made available to another party. Multiple entities (e.g. farmers, landowners, input suppliers, soil sampling services, aggregators, lenders, etc.) may have partial access to viable copies of the same farm data.

Applying the economic principles of public goods versus private goods and excludability versus non-excludability helps to make this point. Ownership of private goods implies that the owner may exclude others from enjoying their property. Public goods are not privately owned and no one can exclude others from enjoying these goods. To fully understand this, the concept of "non-rival" goods need to be considered and applied to farm data. Private goods are typically not 'non-rival'. Farm data are considered "non-rival" because the consumption or usage of data by one person does not alter another person's ability to consume or use that same data ([see our recent paper for more details](#)). Classic examples of non-rival goods are books and movies; multiple people can read the same book without any loss of value to any other readers. Economic theory suggests that there is no loss of utility by the next person enjoying the same book. A [recent paper](#) described examples of agricultural non-rival goods as weather reports, commodity market information, and farm data. The value that the initial user receives from accessing data or information is not affected by another user accessing the same information. Multiple entities can consume farm data without diminishing the initial value enjoyed by the first or subsequent users of that data.



Since farm data are non-rival and digital (i.e. copies can be made at near-zero cost), we must accept that farm data are “non-excludable” once other users have access. Given that copies of data are considered identical to the original, the ability to exclude others from accessing data no longer exists once another entity has a copy (i.e. access). Most privately held goods typically are excludable; however the lack of excludability does not necessarily mean that farm data are a public good.

Rather than consider data ownership, a better question regarding farm data may be ‘can I keep others from accessing data that only I control?’. The answer is ‘yes, but only until the data are shared with a third party or aggregated into community’. Privately held farm data may be considered excludable if and only if it is in the possession of the party that generated it ([see our recent paper for discussion](#)). Once the farm data has been shared with another party or aggregated into a big data community, excludability has essentially been eliminated. Therein lies the problem. To make the most use of farm data it typically needs to be aggregated into a community for big data analysis to provide useful insights (see forthcoming article on value of data isolated to the farm versus aggregated into community). The notion of 1) excluding others from accessing data and 2) making the most valuable use of data are at competing ends. I’m not going to discount the importance of excluding others from accessing data; the individual must make a benefit-cost analysis decision at each decision step. First, if a landowner asks for a copy of data generated from their farmland then it is likely most farmers would opt to maintain a positive working relationship. Second, data remaining in ‘data tombs’ or ‘data silos’ isolated to an individual farm has essentially zero value until that data are converted to information suitable for making farm management decisions. When properly analyzed, farm data shared in a community has much greater value to not only the community but the individual farms (I’ll address this in a future blog post). So, when we discuss who ‘owns’ or who can ‘own’ farm data, we may be using that word as if it means something other than what we think it means.

References

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