Legislative Constraints

Area 3 – Social and Economic Aspects

Lesson 10 – Policy and Management

Sequence ID – 34

AUTH

DISCLAIMER

A3.L10.T3 Legislative constraints

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Overview

Precision agriculture constitutes a data-based management approach that is based on the collection and use of field-specific data. The practice of precision agriculture consists of the integrated use of various individual tools, which have the capacity to collect extremely large amounts of data from the agricultural producers who utilize the tools in their farming practices. As with any area in which information may be collected about individuals through their use of a product or service, some concerns about the security and privacy of this information have arisen.

References:
https://policyreview.info/articles/analysis/ethics-big-data-big-agriculture

1. Categories of data collected in precision agriculture

There are different types of agricultural data, which can be classified into general categories.

1. Farm data:

- agronomic data, which refers to information regarding the yields of crops and the amount of input products applied
- meteorological data
- machine data, which refers to information about farm equipment and machine operations

2. Compliance data,

- required for control and enforcement in relation to competent authorities.

3. Service data,

- used for vehicle maintenance and repair.

1. Categories of data collected in precision agriculture

<u>4. Agri-supply data,</u>

- related to the nature, composition and use of inputs such as fertilizers, plant production products etc.

<u>5. Personal data:</u>

- particular farming techniques
- personally identifying information
- financial data
- staff data
- data derived from people's behaviour
- some environmental data

References:
http://www.europarl.europa.eu/RegData/etudes/STUD/2017/603207/EPRS_STU(2017)603207_EN.pdf
https://copa-cogeca.eu/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf

1. Categories of data collected in precision agriculture

https://copa-cogeca.eu/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf
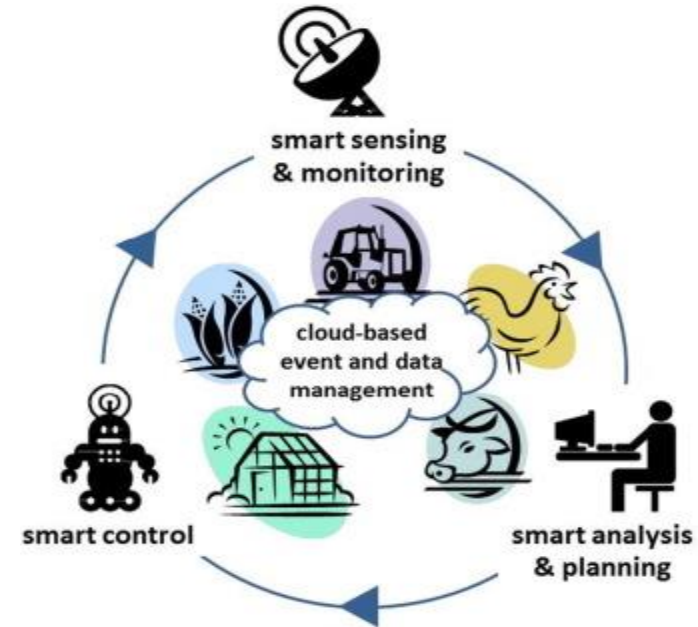
Wolfert, S., Ge, L., Verdouw, C., Bogaardt, M., 2017. Big data in smart farming – a review. Agric. Syst. 153, 69–80. (https://www.sciencedirect.com/science/article/pii/S0308521X16303754)

2. Use of data by involved parties in precision agriculture

Farm-generated data is a type of property. The question that arises is who is entitled to own the data and what usage types are allowed. The concerned parties include:

- Farmers

- Organic ingredients providers

- Farm machinery companies

- Telematics companies

- Seed companies

- Software developers and service providers

- PA service companies/crop consultants

- ...

2. Use of data by involved parties in precision agriculture

- …

- Other Farm Technology Innovators (the IoT, such as Google Glasses)

- Retailers/co-ops

- Data co-ops

- Crop insurance providers

- Lenders/land evaluators

These involved parties should always try to determine data related issues wherever possible.

References:
https://www.foodandaglawinsights.com/2015/09/agree-to-agree-data-ownership-protection-and-precision-ag-part-1-2/#more-2095
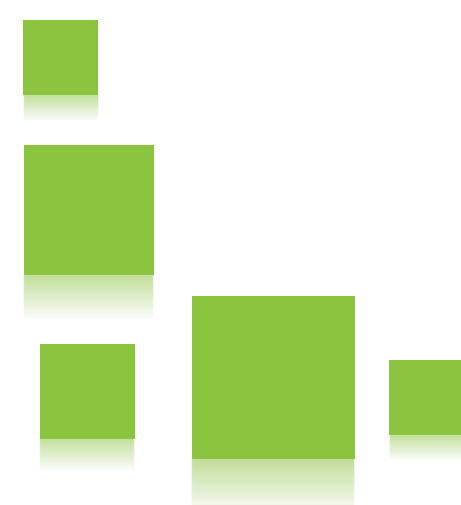
3. Ownership of data in precision agriculture

The common practice for management ownership issues associated with data in precision agriculture is:

- 'Primary data' generated on farms, belonging to the farmers.

- 'Computed data' are considered as being owned by whoever did the computing.

- Data collected from different farmers, become property of the company that aggregates them.

3. Ownership of data in precision agriculture

The parties (originator, provider, user) are encouraged to establish a contract clearly setting the data collection and data sharing conditions, according to the needs of the contracting parties.

The contract should acknowledge the right of all parties to protect sensitive information. Meanwhile, parties may not use, process or share data without consent of the data originator.

References:
http://www.europarl.europa.eu/RegData/etudes/STUD/2017/603207/EPRS_STU(2017)603207_EN.pdf
https://copa-cogeca.eu/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf

4. Data protection and transparency

Protecting trade secrets, intellectual property rights and protecting against tampering are the main reasons as to why information and data are not shared and permission is required.

Personal farm details are subject to legislation for private life. So, data collected by precision agriculture tools needs to comply with the applicable data protection rules. It is an important issue because it:

- ✓ Ensures the farmers' data protection.

- ✓ Helps build trust with farmers for exchanging their data.

4. Data protection and transparency

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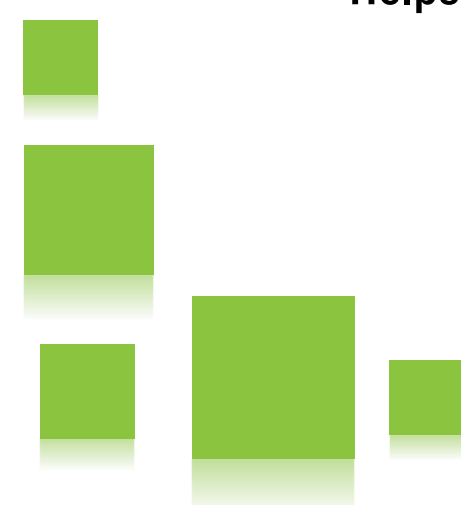
Personal data is collected for a specific purpose and it is not allowed to process it in a way that is irrelevant to the initial purpose. At present there is an absence of specific legal and regulatory frameworks in Europe, for creating and sharing farm data. However, the processing of precision agriculture data are required to follow:

- ✓ The new General Data Protection Regulation

- ✓ The Council of Europe Convention on Human Rights (Article 8)

- ✓ The Charter of Fundamental Rights of the European Union (Article 7)

It is essential for data users who control the database to have a protocol on data protection safeguards for individuals originators, that means that data could be used and shared only by authorized parties.

References:
http://www.europarl.europa.eu/RegData/etudes/STUD/2017/603207/EPRS_STU(2017)603207_EN.pdf
https://copa-cogeca.eu/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf
https://www.dhs.gov

5. Constraints and obligations associated with data in precision agriculture

- The use of farm robots calls for the formulation of standards and protocols that would safeguard control and monitoring.

- There is a need to ensure that the robot itself is safe for the users themselves, as well as for flying over other people's farms and homes.

- Data collected by drones, robots and sensors are considered to be confidential.

- The accuracy and detail of the data collected by sensors, combined with images, location, or both, could potentially indirectly identify individuals and their behaviour. This would constitute an infringement on peoples' right to physical integrity.

5. Constraints and obligations associated with data in precision agriculture

SPARKLE

- Rules for drones should focus on issues such as airworthiness, certification specifications, the identity of the drone and the owner/operator, 'geofencing' and no-fly (exclusion) zones.

- Only authorized personnel should be allowed to view or access recorded images or locations collected by drones.

- Data should only be stored for the period necessary for the relevant analyses to be carried out.

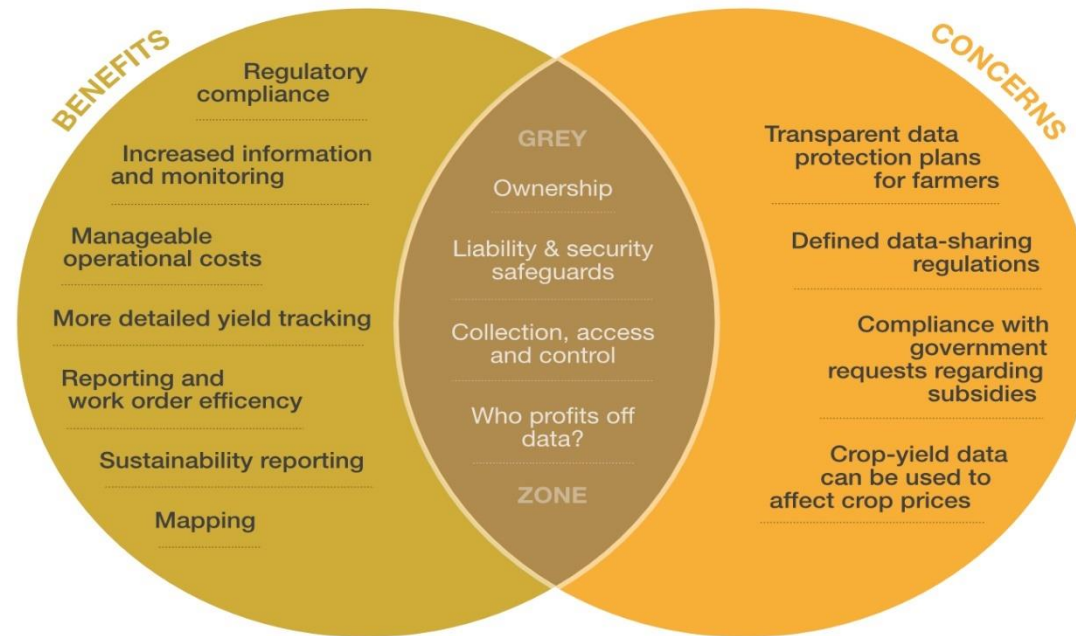- Recorded materials should be protected during the processing period.

References:
http://www.europarl.europa.eu/RegData/etudes/STUD/2017/603207/EPRS_STU(2017)603207_EN.pdf
https://epthinktank.eu/2017/12/01/precision-agriculture-legal-social-and-ethical-considerations/

5. Constraints and obligations associated with data in precision agriculture

Data Farming
Benefits & Concerns

BENEFITS

Regulatory compliance

Increased information and monitoring

Manageable operational costs

More detailed yield tracking

Reporting and work order efficency

Sustainability reporting

Mapping

GREY
Ownership
Liability & security safeguards
Collection, access and control
Who profits off data?
ZONE

CONCERNS

Transparent data protection plans for farmers

Defined data-sharing regulations

Compliance with government requests regarding subsidies

Crop-yield data can be used to affect crop prices

References:
https://listen.sdpb.org/post/data-farming-how-big-data-revolutionizing-big-ag