# AIT Research

## An investigation into the development of an Artificial Intelligence to deliver real time reproductive management analysis.

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### ***Why?***

- Rising global temperatures, increased extreme weather events, shrinking glaciers, rising sea levels and mass coral bleaching are some of the increasing observable effects on the environment, associated with climate change.
- The scientific consensus is that Green House Gases (GHG) are causing the "greenhouse effect", trapping heat which would have been emitted towards space (NASA, 2019).
- The current world population is 7.6 billion and is expected to rise to 8.6 billion by 2030, an increase of over 13% in the next 10 years.
- Ireland has been set a target (Paris agreement (NDC)) of a 30% reduction in GHG by 2030 (DCCAE, 2018).

### ***How?***

- Concept of "One Health" has emerged which recognises the interconnectedness between people, animals, plants, and their shared environment for a broader context to address climate change (WHO, 2017).
- Livestock sector contributes a significant portion of GHG.
- There is without doubt a waste of resources inseminating cattle which are simply unable to maintain a viable pregnancy.
- Wasted resources are; time when individual animals out of sync with the herd requiring additional management, money in costs of unsuccessful service' and extra feed given to infertile/subfertile animals, and this wastage creates unnecessary GHG emissions.

### ***What?***

- Reprodoc has delivered reproductive management advice and information to both dairy/beef industry stakeholders, and directly to farmers for over 20 years. During this time, a fertility database has been amassed by ReproDOC which is currently used alongside expert knowledge.
- This database will be leveraged using cutting edge AI algorithms to automate, optimise and expand reports provided to ReproDOC customers.
- Additional features which may contribute to cattle fertility success or failures will also be explored for inclusion into the model.
- A monetary value will be assigned, where possible, for each animal in order to incentivise action. Herds which operate with more reproductive efficiency will by default also be more economical thus improving farm production output and curtailing unnecessary GHG production.

### ***Conclusion***

- AI technologies are entering every aspect of our lives, from how we bank, socialise and drive and even beginning to assist with decisions made in human healthcare system.
- Agri-technologies such as the proposed will become increasingly sought after because of increasing global population and improved worldwide standards of living, thus driving global demand for livestock products expected to double by 2050 (Rojas – Downing, 2017). Additionally, stricter policies regarding GHG are inevitable.

### ***Acknowledgements***

This research is funded by Enterprise Ireland Innovation Partnership Programme IP 2019 0811E and ReproDOC Ltd.

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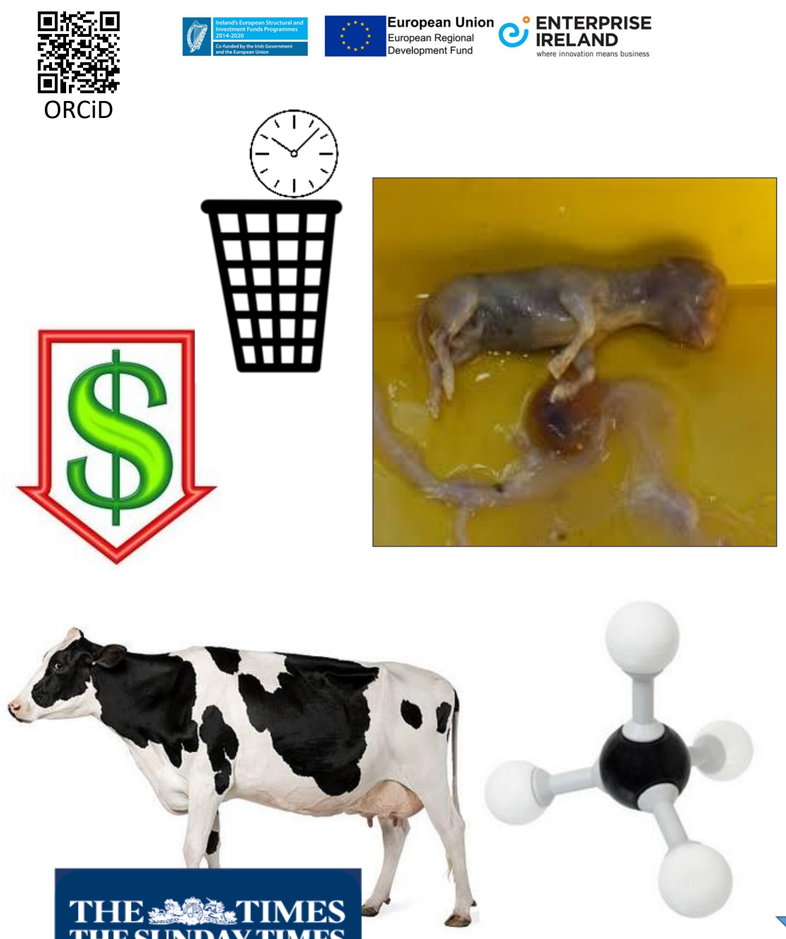


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