



Future Innovations in agricultural and environmental engineering in UK

Environment Programme | Group Project

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11/03/2020

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Future Innovations in agricultural and environmental engineering

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Introduction

Background

By the end of the project we will have contributed to determining the Douglas Bomford Trust's investments over the next 15 years. The desired output is a wide-ranging technical level summary report of the implementation of forthcoming cutting edge agricultural and environmental engineering innovations. This will be achieved through market analysis, extensive review of relevant academic and non-academic literature, stakeholder involvement and scenario building for the relevant time frames.



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Introduction

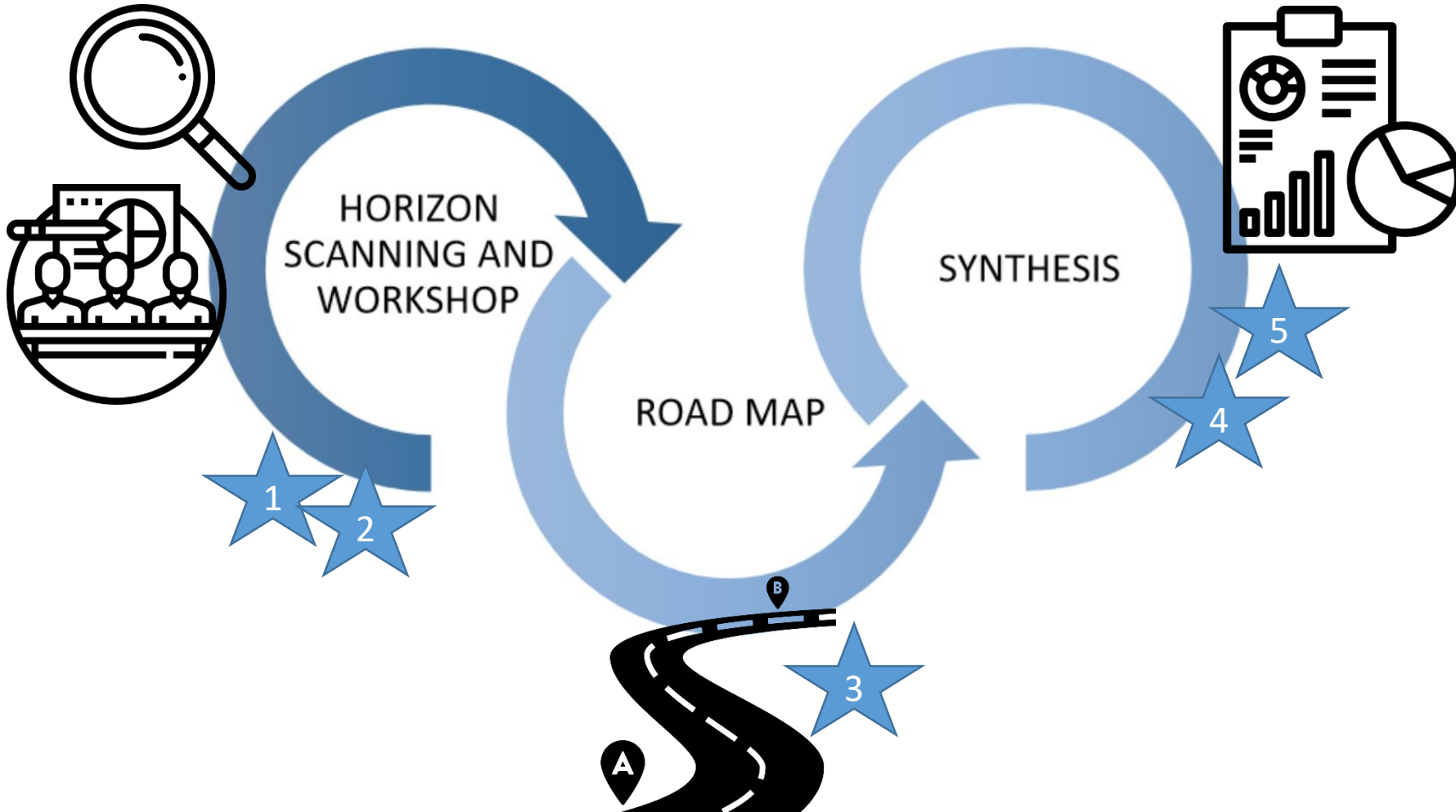
Aim and objectives

The aim of this project is to develop and present a report for the Douglas Bomford Trust (the client) outlining potential innovations in agricultural and environmental engineering in the next 15 years.

1. Complete horizon scanning of innovations in the agricultural and environmental engineering sectors.
2. Host a workshop with diverse stakeholder attendees to build on horizon scanning outputs and inform scenario building.
3. Using outputs from horizon scanning and the workshop, produce a 15-year innovation roadmap to influence the Trust's investments over the short, medium and long term.
4. Present recommendations for the awarding of funds to the board of DBT, based on the roadmap.
5. Synthesise findings and the outputs produced into a comprehensive project report

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Methodology





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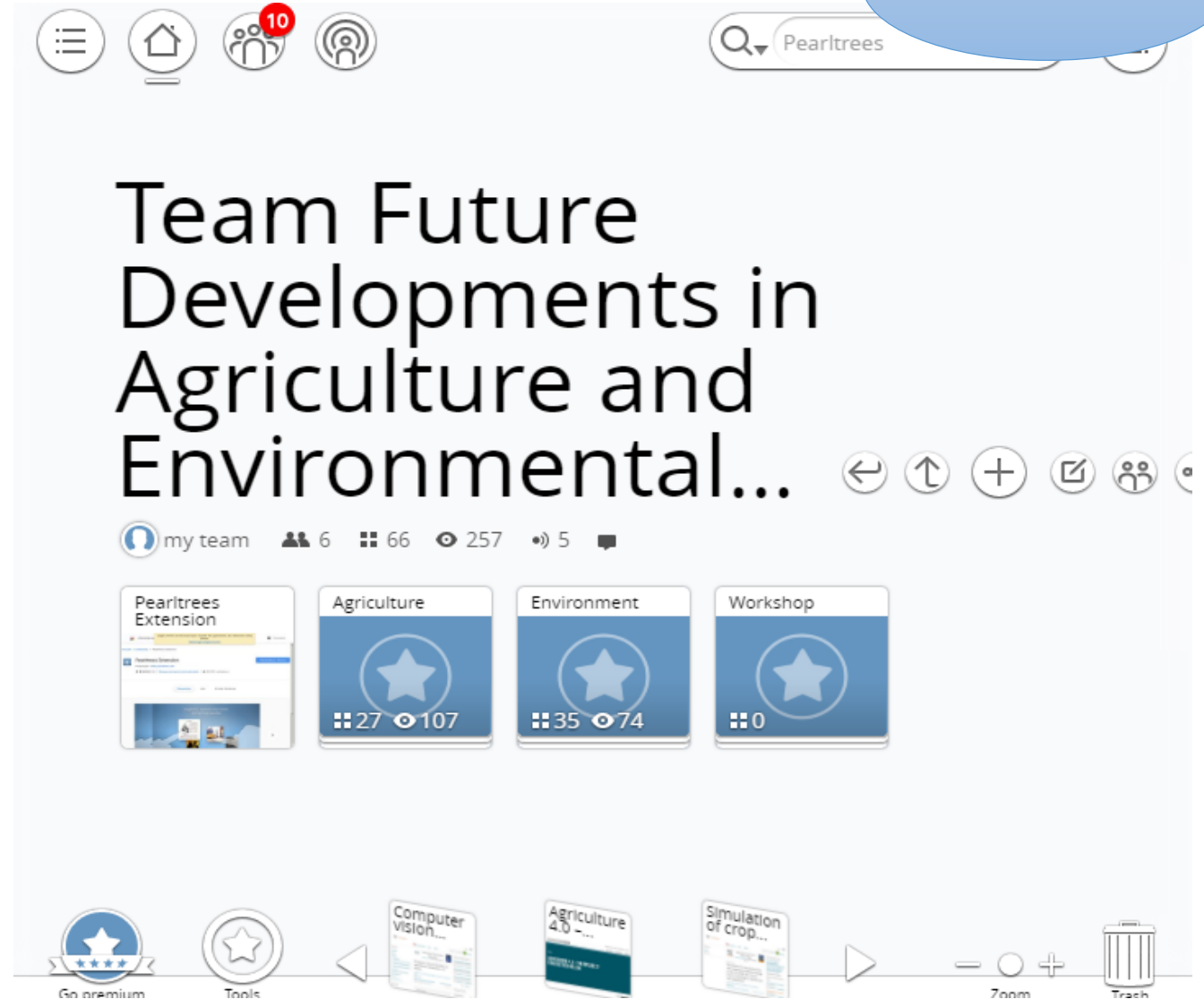
OBJECTIVE 1

Methodology | Phase 1

- **Horizon scanning**
 - Literature review and collection of articles – Pearltrees
 - Internal review articles
 - External review articles
 - Scan paper



Topic
Summary (main insight)
Significance (importance for the agriculture and environment)
Emergence of innovations
Date of publication
Source (link)





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Methodology | Phase 1

- Example of Scan Paper (Environment)

Government faces legal action over changes to Brexit laws which 'weaken environmental protections'(LEGAL)

SUMMARY: The government's repeatedly promised "green Brexit" and new strong environmental protection measures to replace EU laws have been questioned, as the changes of government powers behind it has allowed ministers to alter and lower the standards of protected areas. So environmental law firm ClientEarth, the Marine Conservation Society (MCS) and Leigh Day Solicitors are suing on the grounds that this may weaken the protection of wildlife and the seas.

IMPORTANCE FOR THE ENVIRONMENT IN UK: The new measures are considered "Henry VIII powers" because they give too much discretion to ministers to make new laws, with little scrutiny from Parliament, the public or civil society. This makes seals, otters and seabirds, and other animals, plants and previous sites likely to be threatened. British environmental experts and citizens have raised a lot of concerns about this and demanded that if EU protection measures are no longer taken, its oceans, countryside and wild animals and plants will not deteriorate.

DATE OF PUBLICATION: 21 June 2019

SOURCE: <https://www.independent.co.uk/environment/brexit-environment-laws-campaign-legal-challenge-marine-conservation-a8967596.html>



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Methodology | Phase 1

- Example of Scan Paper (Agriculture)

Five roles robot will play in the future of farming (Social, Technological and Legal)

SUMMARY: This article focuses on the technological improvements in the agricultural sector. The future of the UK in terms of legal concerns is questionable on the adaptation of a possible decrease in migrant workers due to Brexit. Innovations such as fruit pickers have been designed to efficiently pick fruit such as strawberries with minimal to none manual labour workers.

IMPORTANCE: Socially, jobs may be fewer to the currently employed or job seekers. Legally the UK farmers will be able to continue with farming businesses. Technologically, robots are most likely to be efficient in harvesting compared to manual labour which might result in less food loss and waste. This could mean, it is reduced carbon footprint.

LAUNCH: 5 to 10 years

DATE OF PUBLICATION: 30 September 2019

SOURCE: <https://www.smithsonianmag.com/innovation/five-roles-robots-will-play-future-farming-180973242/>

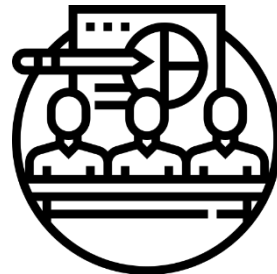


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OBJECTIVE 2

Methodology | Phase 1 continued

- **Workshop**
 - Themes and agricultural innovations
 - Strategic areas of development
 - Key research topics for short, medium and long-term.





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OBJECTIVE 3

Methodology | Phase 2

- Road map

Strategic area	Implementation time		
	5 years	10 years	15 years
Renewable energy e.g. solar	1 st implementation	2 nd implementation	3 rd implementation



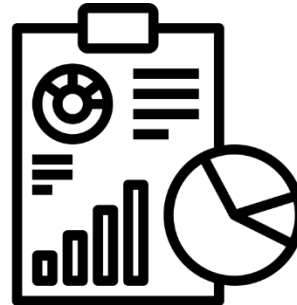
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Methodology | Phase 3

- **Synthesis**
 - Final report
 - Presentation to DBT and to Cranfield University

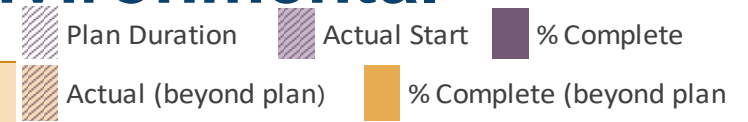
OBJECTIVE 4

OBJECTIVE 5





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Period Highlight: 2

Gantt Chart

		ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE	PERIODS (1 period -> 1 week)											
								1	2	3	4	5	6	7	8	9	10	11	12
Orientation	Setting Aim and Objectives		1	2	1	2	100%	█	█										
	Allocating Roles and Identifying Subteams		1	2	1	2	50%	█	█										
Phase 1	Reviewing Environmental and Agricultural Landscape		2	2	2		25%	█	█	█									
	Scan paper		4	1			0%			█									
Workshop	Choose Date, indentify potential stakeholders		3	1			0%			█									
	Plan Workshop activities		3	3			0%			█	█								
	Contact and Invite Stakeholders		4	1			0%			█									
	Deliver Workshop (date TBA)		6	1			0%					█							
Phase 2	Road map (short, medium and long term)		6	2			0%					█	█						
Phase 3	Infographics Creation		7	1			0%						█						
	Report for Cranfield Uni Submission and for DBT		4	5			0%			█	█	█	█	█					
Deadline dates	Presentation submission		9	1			0%									█			
	Report submission		9	1			0%									█			
	Conference		10	1			0%										█		



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Budget

- Workshop:
 - Food
 - Travelling costs for invitees
 - Stationary (posters or leaflets)
- Graphic design for the road map



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ANY QUESTIONS?

THANK YOU FOR YOUR ATTENTION