

Understanding public values of land: A developing typology

Summary of key findings



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Context

The Scottish Government Rural and Environment Science and Analytical Services (RESAS) division funds the [Strategic Research Programme 2022 to 2027](#) to advance the evidence base in the development of rural affairs, food and environment policies. One of the themes (Theme E) of the Strategic Research Programme 2022 to 2027 is on **Rural Futures**. This theme has three research topics: rural communities, rural economy, and land reform. There are two projects within each topic, led by the James Hutton Institute (JHI) and Scotland's Rural College (SRUC). This publication is one of a series of publications from this theme.

Within the land reform topic, the two projects are:

1. [Scotland's Land Reform Futures](#)
2. Impacts of Land-Based Financial Support Mechanisms on Land Values, Landownership Diversification and Land Use Outcomes

The current research is part of the first project, and it aims to provide a better understanding of:

- What public values are associated with land.
- How these values are affected by land tenure regimes.

Previous publications from the Scotland's Land Reform Futures project are:

- [Understanding community access to land data](#)
- [Alternative Land Tenure Models: International Case Studies and Lessons for Scotland](#)

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Highlights

What were we trying to find out?

The initial phase of this research was dedicated to undertaking a comprehensive literature review exploring different public values associated with land beyond its market price and identifying case studies encompassing both successful and unsuccessful attempts to acquire community land. The review focused on diverse approaches to quantifying and monetizing the economic, environmental, social, and cultural benefits associated with land. The aim was to provide a robust foundation to develop a survey tool for the second phase of this study, commencing in April 2024. The survey will focus on measuring the impact of changes in land tenure regimes on values associated with land.

What did we do?

We reviewed academic and grey literature, including websites and policy reports. The findings of this review were discussed with the Scotland's Land Reform Futures Project Stakeholder Advisory Group. Subsequently, we categorised the public land values using existing valuation conceptual frameworks. Furthermore, we identified a list of successful and unsuccessful cases of community land acquisition in Scotland for investigation in Phase 2.

What did we learn?

A large share of the relevant economics literature focusses on land value in relation to its market value. Studies encompassing non-market values associated with land are scarcer, with a large literature focusing on values associated with ecosystem services. We have identified and adapted existing conceptual frameworks (i.e., Ecosystem Services, The Four Capitals approach and the Total Economic Value framework) to develop a typology of values associated with land. This typology will categorise public values across social, cultural, ecological, and economic dimensions, enabling us to assess and compare how different land tenure changes affect the various categories of public values. In turn, we can identify and prioritise those most relevant to our case studies.

What happens now?

Based on the literature review findings, in the next phase of this project we are preparing a questionnaire to measure the impact of land tenure regimes on values associated with land.



Executive summary

This report is part of research ongoing in Work Package 2 in the Scotland's Land Reform Futures project contributing to the Scottish Government's Strategic Research Programme (2022-2027). The wider project will generate new knowledge regarding land reform, community land ownership, and engagement in land use decision-making, as well as enhance understanding of the role of land ownership and land reform in achieving net zero emissions and reversing biodiversity decline in Scotland.

The overall objective of the research reported here is to assess the difference in values associated with land that can be explained by differences in land tenure regimes, thereby deepening our understanding of how land reform impacts values of land. Therefore, this research aims to facilitate comprehension of how land reform policies can achieve more equitable and effective changes in land use practices. To this end, we conducted a literature review to identify public values associated with land and to search for a suitable conceptual framework for categorising these values. This framework will guide the construction of a data collection instrument in Year 2 of the project.

Our goal in this first phase was to develop a typology of values that captures all potential types of values affected by land tenure regimes. This will guide the selection of questions we ask of participants in the survey developed in Year 2. However, this report focuses on documenting our reasoning behind the typology and does not exhaustively summarise all the papers we reviewed during the literature review.

Understanding public values of land: A developing typology

1. Introduction

1.1 Background

French physiocrats¹ in the mid-18th century pioneered the idea of land value being largely determined by its agricultural potential, as noted by Vejchodská et al. (2022). However, David Ricardo (1773-1823), a key figure in classical economics, formally defined land rent theory. He described rent as the compensation paid to the landlord for the original and indestructible powers of the soil. This definition solidified the view of land as primarily a private commodity valued for its income-generating potential (El-Barmelgy et al., 2014; Vejchodská et al., 2022). However, land holds values that also encompass a range of environmental, social, and cultural benefits, contributing to the well-being of communities (McMorran et al., 2020).

Public values associated with land are an important dimension of land value, and analysing how different aspects of land reform, such as changes in ownership or access, might influence public values is a key part of policy evaluation. Before being able to assess the impact of land reforms on public values associated with land, the first step is to define what values are associated with land by society.

1.2 Approach Taken

An initial key word search using ScienceDirect led us to make two main decisions to refine the scope of our literature review, and therefore of our research questions:

- (i) To focus on land located in rural areas.
- (ii) To assess values associated with land, aiming to disentangle these from values associated with built properties.

We then focused on identifying relevant economics literature produced since 2010 with the keywords “Land value” and “rural” (locating 475 papers). A review of abstracts led us to identify the need to further refine our literature search, through a better definition of the concept of “value”. Indeed, most of the literature identified assumed an equivalence between land price and land value which did not fit the purpose of this project.

Given the purpose of the project to identify “public values” associated with land, we decided to take an anthropocentric stand and only focus on **instrumental and relational values** associated with land, leaving out its intrinsic value (Subrammanian et al. 2019).

¹ The Physiocrats were a group of eighteenth-century French economists who believed that the land is the ultimate source of all wealth, and also in free trade in grain (Oxford Reference, 2023).



This led us to select about 20 papers from the initial search, which were identified as relevant to the development of a useful conceptual framework and typology of values. We evaluated the papers based on their ability to provide complementary conceptual frameworks and address different but complementary aspects of additional market and non-market land values. This selection was complemented through snowballing (i.e. looking at references cited by these papers), and locating other reports and papers recommended by other members of the research team.

A draft typology was proposed to the Stakeholder Advisory Group (SAG) and discussed during a meeting in March 2023. We employed the Q-methodology to analyse how participants sorted and ranked the land-related values. The Q-methodology helps to explore the perspectives of individuals or groups on a particular topic. Then, the typology was revised and finalised based on the SAG's feedback.

1.3 Structure of the report

The structure of the report is presented as follows.

- a. Key Findings: This section is divided into four subsections:
 - i. Types of values collected from the literature review.
 - ii. Feedback from the Stakeholder Advisory Group.
 - iii. Notes on the 'Q'-methodology used for exploring the values.
 - iv. The final typology of public values of land.
- b. Next Steps: The final section will explain the steps that will be taken in the next phases.



2. Key findings

2.1 Literature review

The concept of value can be ambiguous and market prices often fail to reflect all values associated with land (Olajide et al., 2016). However, the main body of literature that we identified that analyses values associated with land beyond its market price relies on the Ecosystem Services (ES) framework, which evolved to become Nature's Contribution to People (NCP) Framework in the latest IPBES report (2019). In this context, the value of land comes from its ability to provide Ecosystem Services, conditioned on land use.

Under this framework, ES provide a range of benefits which are valued by people. Regulating services are related to the benefits obtained from the regulation of ecosystem processes (e.g., climate regulation, flood prevention, water quality, etc.). The non-material benefits obtained from ecosystems encompass recreation, educational services, sense of place and stress relief. Material benefits are the products obtained from ecosystems (e.g., energy, food, timber, medical herbs, fresh water, etc.).

We identified that a main challenge and gap in the literature is in terms of value associated with land itself (independently from its land use), and beyond the ES provided through this land use. To address this gap, we have extended the NCP framework with two additional conceptual frameworks:

- The Four Capitals approach (The Scottish Government Independent Advisory Group, 2020), as suggested by the project's Stakeholder Advisory Group; and,
- The Total Economic Value framework, as identified through the literature review.

Under the Four Capitals approach (Figure 1) land values can be categorised into Natural Capital values, Human Capital values, Social Capital values, and Economic Capital values. Nature's Contributions to People (NCP) from the IPBES report (IPBES, 2019), would primarily fall under Natural Capital, with some contributions to Social and Human Capital. Additionally, the Four Capitals approach considers how land values contribute to Financial and Physical capital, therefore including all assets sustained by land such as houses, buildings, and infrastructures (The Scottish Government Independent Advisory Group, 2020).



Figure 1. The Four Capitals Framework²

(Source: The Scottish Government Independent Advisory Group, 2020, p. 18)

Another framework, known as the Total Economic Value (TEV), has been used in existing literature. For example, Melvani et al. (2022) use the Total Economic Value (TEV) framework to investigate farmers' values for land in Sri Lanka. In the TEV framework (as utilised by Melvani and colleagues), land values are distributed in relation to their use and non-use values. The use values are then further categorized into direct use values, indirect use values and option values. They define two types of direct use values: (i) direct consumptive (or utility) values, such as the value of food, fuelwood, timber, medicine, income and profit that farming households gain or extract in the present or would in the future and (i) direct non-consumptive use values (such as aesthetic values, recreation, spiritual and cultural wellbeing). Indirect use values are the environmental regulation services provided by land (corresponding to the regulatory services within the NCP framework). Option-values cover the potential use values that could emerge in the future. Non-use values are the bequest value of land and its intrinsic value. This comprehensive breakdown aligns well with our focus on capturing the full spectrum of public values in the context of land tenure changes.

Building upon, we developed a draft typology encompassing ecological, social, cultural, and economic values of land, drawing upon insights from the conceptual frameworks. This typology was then discussed with the Scotland's Land Reform Futures project Stakeholder Advisory Group, whose valuable feedback is in the following section for its impact on refining the typology further.

² The Four Capitals approach is based on the four economic pillars of capital: natural capital, financial and physical capital, human capital, and social capital (The Scottish Government Independent Advisory Group, 2020).



2.2 Feedback from the Stakeholder Advisory Group

In this second stage, we aimed to identify potential gaps in the typology of values and gain an understanding of the most important values related to land. We summarised the values associated with land from the literature in a draft typology and presented them to the Stakeholder Advisory Group (SAG) during a meeting held in March 2023. The Q-methodology was employed to analyse how participants categorised and prioritised land-related values.

To implement the Q-methodology, the values were recorded on self-adhesive labels, and empty labels were also provided so that respondents could add any potential values they felt were missing from the provided list. The Stakeholder Advisory Group was divided into two groups to facilitate discussion. Each Advisory Group member was asked to rank the values on posters according to the importance they attributed to each value from Least Important, Slightly Important, Neutral (Moderately Important), Important to Most Important.

The label sorting procedure followed a specific pattern of allowable labels for each category, ensuring that participants did not exceed the designated number of labels per poster. This pattern adhered to a 3-4-5-4-3 distribution. This means that Advisory Group members were allowed to place three labels on each of the "Least Important" and "Most Important" posters, four labels on each of the "Slightly Important" and "Important" posters, and five labels on the "Neutral (Moderately Important)" poster. This structured approach ensured a balanced distribution of labels across the categories and facilitated a more meaningful analysis of the results. The values derived from the poster sorting exercise were compiled in Table 1, along with the frequency with which each value was placed in each category of importance.



Table 1: The values' ranking derived from the poster sorting exercise.

Value	Least important	Slightly important	Neutral (Moderately Important)	Important	Very important
Grounds for private infrastructure	2	3	2		
Spiritual/aesthetic	2	1	2	1	1
Financial	2	2	1		3
Bequest	3	2	1		2
Medicinal, biochemical and genetic resources	3	1	1	1	
Regulation of climate	3		1	1	3
Recreation	1	1	4	2	
Material	1	2	3	1	
Lifestyle value		3	1	4	1
Cultural identity/historic value		1	2	2	3
Social cohesion – community identity		1	2	2	3
Access		1			
Water quality		2	3		2
Grounds for public infrastructure	2	2	1	1	1
Food			2	3	3
Habitat creation and maintenance (wildlife)			2	3	3
Grounds for housing/shelter			3	4	2
Community asset provision			1		
Energy			5	1	
Flood/drought mitigation		3	1	2	
Education			1		
Creating business and commercially important opportunities				1	
Food as a business		1			
Knowledge and Learning			1		
Wellbeing				2	
Space				1	
Tourism				2	

Table 1 shows a broad spread of perceived importance attributed to a range of different values, which are subsequently described, while some key challenges associated with the approach are discussed in the next section. 'Food', 'Habitat creation and maintenance (wildlife)', and 'Grounds for housing/shelter', were the most likely to be ranked as important or most important, followed by 'Lifestyle value', 'Cultural identity/historic value', and 'Social cohesion – community identity'. 'Bequest', 'Grounds for private infrastructure', 'Financial', and 'Medicinal, biochemical and genetic resources', were the most likely to be ranked as slightly important or least important. The values, 'Energy' and 'Recreation' were most frequently ranked as neutral.

The missing values that participants added themselves were:

- Access.
- Community asset provision.



- Education.
- Creating business and commercially important opportunities.
- Food as a business.
- Knowledge and learning.
- Wellbeing.
- Space.
- Tourism.

Most of these additional values were ranked as important, although perhaps unsurprisingly, they were only ranked by those who suggested them. The exceptions were 'wellbeing' and 'tourism', where other group members also ranked them as important.

The notes from the group discussions during the Q-methodology shed light on the rationale behind some of the values that were added. 'Tourism' was added to distinguish this from 'recreation'. Participants also mentioned that the existing value of 'financial' might be supported by tourism. 'Wellbeing' was also added because it was considered distinct from 'recreation' and 'lifestyle', and particularly associated with people coming to the Scottish Highlands to enjoy the space and fresh air. 'Knowledge and learning' was also added based on an assumption that people such as botanists and ethnologists may value the land for knowledge and learning in their respective disciplines. Participants also suggested a difference between food as self-sufficiency and 'food as a business', and that water (availability of water as a resource) and 'water quality' might also be separated, though ultimately this was not represented in the Q-methodology outcomes. These are reflected in Table 2 (see below).

There was also some discussion about potential differences between 'cultural identity' and 'sense of place', in that some people may have an attachment to land by virtue of being from a particular place and having a cultural identity associated with that, whilst others may have an attachment to a place, even if they are not from there (for example if one got married in a particular location). This was acknowledged it as a multi-layered issue, and it was not reflected in the Q-methodology outcomes.

2.3 Notes on the 'Q'-methodology

The group discussions also revealed insights into the methodology used for exploring values in the meeting. One Advisory Group member questioned whether they should consider values for themselves as individuals or for wider groupings/interests to which they belong (e.g. local farmers, who they are advising/representing, might value certain things differently to themselves as individuals). Another suggested that people might express values differently if the methodology is conducted in the location of the land they are thinking about, compared with if they are thinking about it remotely). In general, people found it interesting to add missing values, but difficult to categorise them according to importance.

This feedback led the research team to consider alternative approaches (e.g., using



Likert scales to assess importance without forcing a ranking between the types of values) in the development of the protocol that is being developed to assess public values associated with land.

2.4 Final typology of public values of land

Table 2 presents the typology of values developed for the project. The values are categorised around the Four Capitals approach, and further categorised used NCP values. The typology was further enriched through the literature review and using the feedback from the Stakeholder Advisory Group (SAG), as described above.

Table 2: Typology of values based on literature review and incorporating SAG feedback

Contributing to:	Type of value	Specific value	Definition
Natural Capital	Material Provisioning	Food	Value derived from the food produced on land (commercial and self-consumption)
		Energy	Value derived from energy sourced available on land
		Material (e.g timber, gravel, stone, etc)	Value derived from Material (e.g. Timber) present / produced on land
		Medicinal, biochemical and genetic resources	Value derived from medicine produced out of fauna/flora present on land
	Regulating	Regulation of climate	Benefit provided to society from Ecosystem's ability to regulate climate / store GH gases
		Water quality	Benefit provided to society from ecosystem's ability to improve water quality (e.g. wetlands, peatlands, forests)
		Habitat creation and maintenance (wildlife)	Value of land as a support of habitats for wildlife
		Flood / drought mitigation (water flows regulation)	Benefit provided to society from ecosystem's ability to improve flood mitigation or water availability (e.g. wetlands, peatlands, forests)
Human Capital	Non-material	Recreation / tourism	Value derived from land as a space for recreation (e.g. hiking, biking, hunting grounds, etc) for residents and tourists
		Spiritual / aesthetic	Value derived from individual spiritual and experiential interaction with nature/land (examples: religious grounds, enjoyment of natural beauty, etc.)



Contributing to:	Type of value	Specific value	Definition
		Bequest value	Value associated with a piece of land that has been inherited and/or is planned to be passed on to future generations (legacy)
		Lifestyle value	Value associated with the lifestyle enabled by land (e.g. "farming lifestyle", "countryside lifestyle"...) / provision of a meaningful life
		Educational and scientific knowledge value	Value associated with use of land for knowledge and learning purposes.
Social Capital	Non-material	Social cohesion - community identity	Value of land as a creating a sense of community / supporting social cohesion
		Cultural identity / historic value	Historic or cultural value of a place (e.g. site of historic event-etc).
		Jobs, business and commercial opportunities (including opportunities from tourism)	Value of land in its capacity to sustain employment and support the local economy
		National security	Land valued for its contribution to national security (e.g. military grounds)
Physical and financial capital	Material	Grounds for housing / shelter	Value associated with ability to provide grounds for housing (excluding expected financial gains)
		Grounds for public/community infrastructures and assets	Value associated with ability to provide grounds for public and community infrastructures, including public paths / ways (excluding expected financial gains)
		Grounds for private infrastructures	Value associated with ability to provide grounds for private infrastructures, including private paths / ways (excluding expected financial gains)
	Financial	Financial value	Financial net gains generated by rights on land (e.g. subsidies, taxes, green finance credits etc.)



3. Next steps

In Year 2 of the Scotland's Land Reform Futures project (April 2023 – March 2024) we are preparing the protocol to measure the impact of land tenure regimes on values associated with land. Methods that provide a monetary value to intangible values are scarce and can be controversial (Sagoff, 2004). We will not seek to provide a monetary measure of each value associated with land but to qualify what these are and use indicators to measure their relative importance between types of value and between types of individuals, in particular in terms of the impact of land tenure.

The key decisions and progress to be made in Year 2 to prepare the protocol are:

- To define the case study areas and population to be surveyed, in particular to be able to assess values associated with land that are public values,
- To select the types of values we aim to focus on, in order to contribute to filling the knowledge gaps identified in the literature review,
- To prepare the survey instrument based on the typology of values, that will allow us to measure the effect of (changes in) land tenure regimes on values associated with land.

The data will be collected in Year 3 of the Scotland's Land Reform Futures project (April 2024 – March 2025).



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