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The Meaning of the Place – A Socio-Spatial Analysis of Equine Yards

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Abstract

Climate change and biodiversity loss are interconnected global challenges that require urgent and transformative changes in land use and management. Equine yards have a unique potential to contribute positively to biodiversity while supporting equine welfare and providing economic and social value. This study explores the perspectives of equine yard owners in Germany and the Netherlands regarding the socio-spatial aspects they consider important when designing and managing equine yards that balance biodiversity, equine welfare, and operational needs. The research employed a qualitative socio-spatial analysis framework, drawing on semi-structured interviews with 17 equine yard owners. The findings reveal that a wide range of socio-spatial aspects—including land use, social infrastructure, accessibility, and the integration of biodiversity—play significant roles in yard design and management. Cultural differences were also observed, with German yards generally emphasizing safety and seclusion, while Dutch yards focused on controlled access and integration into the local community. The study highlights the challenges of balancing equine welfare, biodiversity, and community needs, particularly in relation to land availability, accessibility, and cultural contexts. Despite the focus on a limited number of yards in Germany and the Netherlands, the findings provide valuable insights into the socio-spatial factors that shape equine yard management. A set of preliminary guidelines for yard design is proposed, emphasizing the integration of equine welfare, biodiversity, community engagement, and sustainable business practices to enhance the contribution of equine yards to the agroecological transition.

Keywords

Socio-spatial analysis; biodiversity; equine welfare; financial sustainability; agroecological transition

1. Introduction

Climate change and biodiversity loss are interconnected global challenges of unprecedented scale. Over the past 150 years, global temperatures have risen by 1.1°C, leading to widespread species extinctions and significant ecosystem disruptions **[1]**. Approximately 30% of known species have become endangered or extinct since 1500, with ongoing biodiversity loss threatening ecosystem services vital to human survival, such as food security, water regulation, and climate stabilization **[2]**. Addressing these issues sustainably requires urgent and transformative changes, particularly in land use and management **[3]**.

Agriculture is a primary driver of biodiversity loss, impacting 86% of species at risk of extinction **[4,5]**. However, with 50% of European Union (EU) species relying on agricultural habitats, increasing the role of the agricultural industry in conservation efforts is one of the core objectives of the European Green Deal **[6]**.

With approximately 6 million equids occupying at least 6 million hectares of permanent grassland in the EU, the equine sector is traditionally considered part of the agricultural sector **[7,8]**. However, as equine yards often fall outside typical agricultural statistics, figures relating to their numbers and impact are generally underestimated **[8,9]**. As a result, the equine sector has been largely excluded

from discussions on the agroecological transformation [10]. This exclusion has resulted in substantial areas of land being overlooked in coordinated efforts to improve biodiversity and nature inclusivity in rural and peri-urban landscapes. Moreover, the continued marginalization of equine yards means that their "biodiversity potential" remains underappreciated and largely untapped [11–13].

Since the mid-20th century, equine yards have taken on increasingly multifunctional roles, spanning agricultural production, ecological regulation, and community functions [9]. Wilton [14] suggests that equine yards sit at the "interaction of a productivist agricultural landscape and a post-productivist social and aesthetic landscape." Economically, the European equine sector contributes an estimated €100 billion annually and supports over 500,000 direct and indirect jobs [15,16]. Though smaller than the agricultural industry, valued at €537.1 billion [17], the equine sector contributes significantly, up to one-fifth of its economic value. Germany and the Netherlands, two of Europe's leading equestrian nations, are key contributors, with economic impacts of approximately €7 billion and €1.5–2 billion, respectively. Both nations have dense equestrian facilities, with around 1.2 million and 450,000 horses, respectively [18,19].

Beyond economic value, the social contributions of equine yards are notable [11,14]. Interaction with horses enhances social, psychological, and motor skills while also promoting physical and mental well-being [20–22]. Lastly, from an ecological perspective, equine yards may be able to contribute in diverse ways. Horses, evolved as mixed grazers, feed on grasses and browse on shrubs, supporting landscape biodiversity [23–25]. Unlike ruminants, horses excel at grazing low-lying plants, enabling them to thrive even in sparse pastures, making them suitable for restoring various landscapes [26,27].

Furthermore, equine yards often host diverse small landscape features, such as hedges, woody strips, and flower strips [13,28]. These features support blue-green infrastructure, provide habitats, contribute to carbon sequestration, and aid in soil and water management [29]. When strategically designed, equine yards could serve as ecological corridors, reconnecting fragmented habitats and enhancing landscape connectivity across Europe [30,31]. However, without comprehensive data on the ecological roles of equine yards, policymakers may continue to overlook this sector, thus forgoing potentially significant contributions to biodiversity and nature-inclusive land management.

Yet, despite the equine sector's potential in multifunctional rural land use, empirical data is limited on how to design modern equine yards to optimize biodiversity, equine welfare, and social and economic benefits. Without clear guidelines on the socio-spatial elements most relevant to European equine yards, this sector is likely to continue being overlooked in the broader agroecological transformation.

Therefore, as a first step, the current study aims to explore equine yard owners' perspectives on the socio-spatial aspects they find essential for designing yards that balance equine welfare, biodiversity, and operational needs, with a focus on Germany and the Netherlands.

2. Methodology

This study employed a qualitative research design, drawing on semi-structured interviews with equine yard owners in Germany and the Netherlands. The research was guided by a socio-spatial analysis framework to explore the integration of biodiversity and equine welfare into yard design, with a focus on the perspectives of the yard owners.

2.1. Participants

A total of 17 equine yards, selected through convenience sampling, were invited to participate in the study, with eight (N = 8) located in Germany and nine (N = 9) in the Netherlands. Participants included yard owners from a variety of yard types, such as riding schools and livery yards, to capture a broad spectrum of perspectives on yard design, biodiversity, and equine welfare.

Prior to participation, all yard owners were informed of the study's aims, signed an informed consent form, and were made aware of their right to withdraw from the study at any time without negative consequences. To ensure the anonymity of yard owners, aspects such as the size of the yard and the number of horses were not included in the data collection.

2.2. Socio-Spatial Analysis Framework

Semi-structured interviews were held with all yard owners, loosely organized around the socio-spatial framework by van Goorbergh [32], which contains nine aspects of open space: Location, Function/Social Impact, Anchoring, Accessibility, Routes, Ambiance, Uses and Activities, Gregariousness, and Biodiversity (adapted for this research). The aspect of Uniqueness assesses competition from adjacent areas. Considering the use of equine yards is very specific, Uniqueness was not considered applicable and thus excluded from the model. Biodiversity, on the other hand, was added to better capture the ecological dimension relevant to equine yards.

See **Table 1** for a brief definition of each of the factors, based on the model by van Goorbergh [32].

2.3. Data Collection

Data collection took place in person at participating yards. Each visit lasted between 2 and 3 hours and consisted of a tour of the premises and an interview. Interviews were conducted in the participants' native languages: Dutch (second author) and German (third author). See **supplementary materials** for the interview questions. All interviews were recorded on a smartphone and subsequently transcribed verbatim for detailed analysis.

GIS mapping was employed to provide additional context, offering visual and spatial data that complemented the qualitative findings. GIS maps were generated to visualize the physical layout of each yard, its integration with the surrounding landscape, and the spatial distribution of biodiversity features, adding additional context with regard to the environmental and geographic factors influencing yard design. The GIS analysis drew on ArcGIS Pro version 3.2.2, with all data processed in the RD New coordinate system. The GIS layer Natura 2000 (WMS) [33] was used to identify the proximity of equine yards to protected Natura 2000 sites; the layer entitled Bestand Bodemgebruik

[34] (land use) to determine zoning areas; and the layer Bodemkaart [35] (soil map), for detailed information on types of soil.

2.4. Data Processing and Analysis

Following verbatim transcription, the interview data were imported into Microsoft Excel and analyzed using thematic analysis [36]. The first stage involved immersion in the data. To ensure that all nuances and meanings expressed by participants were accurately captured, the second and third authors read the native language transcripts (in German and Dutch) multiple times.

The data were analyzed line-by-line, according to the participants' responses to each socio-spatial theme. Words or phrases carrying similar meanings were tagged and grouped into thematic categories. Categories considered conceptually related were clustered into lower-order themes. Relevant lower-order themes were subsequently combined into higher-order themes. This iterative process involved constant comparison between the categories, themes, and data. The thematic analysis generally followed a deductive approach, using the factors of the socio-spatial analysis as a framework to structure the higher-order themes **(Table 1)**. Whenever themes emerged that did not fit the socio-spatial framework, an inductive approach was followed.

The first author, who is trilingual, reviewed the coded data throughout the process in the original native language. Any discrepancies identified during this process were discussed until consensus was reached. Before translating the codes and themes into English, the second and third authors compared meanings to ensure that translations across languages accurately reflected all intended meanings. The first author then reviewed all codes and themes again to ensure coherence and distinctiveness in the data set. Care was taken to ensure the authenticity of the responses and minimize the risk of misinterpretation during the coding process while accounting for linguistic and cultural nuances.

The thematic analysis was complemented by geographical data derived from the GIS maps. Descriptive and qualitative data were documented in a structured overview, enabling direct comparisons between the different yards and countries for the different aspects of the Socio-Spatial Analysis Framework.

While some quantitative comparisons were drawn from the thematic categories, the primary focus was on identifying patterns, meanings, and emerging themes related to the socio-spatial aspects of yard design, biodiversity, and equine welfare. This ensured that the qualitative depth of the study remained central while allowing for meaningful comparisons between yards.

Table 1: The nine aspects of the Socio-Spatial Analysis Framework [32] adapted for the current study.

Aspect	Definition
Location	This aspect was adapted to focus on the geographical positioning of the yard in relation to its surrounding area, based on yard owners' perceptions of their location, the surrounding environment (rural, suburban, etc.), and the general level of activity (e.g., traffic, pedestrians). It explored how yard owners view the potential audience their location serves.
Function/ Social Impact	This factor examined the functions offered at the yard and how they influence the yard's social role. Interviews explored whether the yard serves not only equestrians but also potentially non-equestrians, and how yard design might support daily operations and social impact.
Anchoring	Anchoring referred to how well the yard integrates into its surrounding territory. Yard owners were asked whether they felt their yard fits into the local environment and if they considered the surroundings during the yard's design process, with a focus on both social and traffic safety.
Accessibility	Yard owners discussed how easy the yard is to reach for both visitors and clients, considering aspects such as transportation options, parking, and whether the yard is easy to find and navigate.
Routes	This aspect examined the yard's position relative to passers-by and how accessible or restricted it is for those who are not direct users of the yard. Owners discussed whether people are welcome to pass through the yard and how they feel about such interactions.
Ambiance	Yard owners were asked to describe the atmosphere of the yard, focusing on how elements like beauty, psychological safety, and the overall aesthetic appeal influence the user experience and the feeling of comfort and care.
Uses and Activities	This factor explored the range of activities and facilities at the yard, including whether facilities are multifunctional and how users actively engage with the space.
Gregariousness	Yard owners discussed aspects that encourage social interaction, such as seating areas, places for visitors to gather, and whether Gregariousness was considered during yard design.
Biodiversity	Yard owners were asked about the level of biodiversity in their yards and whether they considered biodiversity important. They also discussed how they might integrate more ecological considerations into their yard management.

3. Results

3.1. Location

German yards were located in the regions of Nordrhein-Westfalen, Hessen, Niedersachsen, and Rheinland-Pfalz and engaged in a variety of equestrian activities, such as riding schools, livery services, and therapeutic riding, with a minority offering additional services, such as hotel accommodations. The proximity to Natura 2000 sites varied across the yards, with distances ranging from 21 meters to over 6 kilometers. Land use appeared relatively uniform, with most yards registered as pastures or urban fabric, and soil types predominantly comprising clay slurries and silt. Exceptions included one yard located on pure sand and another on moorland.

In contrast, Dutch yards, located in the provinces of Utrecht, Gelderland, Limburg, Overijssel, and Zuid Holland, displayed greater diversity in both business activities and land use. They employed a broader range of operations, including breeding, event hosting, and training centers, in addition to the more traditional livery and riding school services. Their proximity to Natura 2000 sites also varied, with some as close as 35 meters and others nearly 9 kilometers away. The diversity of land use in Dutch yards was reflected in their classification, ranging from agricultural and sociocultural facilities to sports grounds and business sites. Soil types were similarly diverse, including manured soils, humus podzolic soils, and peatlands, in contrast to the more homogeneous soil compositions seen in Germany **(Table 2)**.

Table 2: Overview of key themes and descriptive categories for location in German and Dutch equine yards.

Yard	Country	Province (GIS)	Main business	Distance to nearest Natura 2000 (GIS) in m	Specification of land use (GIS)	Soil type (GIS)
1	GER	Nordrhein-Westfalen	Riding school, livery, & hotel	3280	Pastures	Clay slurries/ silt
2	GER	Hessen	Riding school, livery, & hotel	1838	Urban fabric/ discontinuous urban fabric	Clay slurries/ silt
3	GER	Nordrhein-Westfalen	Therapeutic riding & livery	980	Pastures	Pure sand
4	GER	Niedersachsen	Riding school & livery	21	Artificial, non-agricultural vegetated areas/sport, & leisure facilities	Clay slurries/ silt
5	GER	Rheinland-Pfalz	Therapeutic riding	2115	Urban fabric/discontinuous urban fabric	Clay slurries/ silt
6	GER	Nordrhein-Westfalen	Riding school & livery	264	Arable land/non-irrigated arable land	Moor/marsh
7	GER	Nordrhein-Westfalen	Riding school & livery	3733	Pastures	Clay slurries/ silt
8	GER	Nordrhein-Westfalen	Riding school & livery	6329	Pastures	Clay slurries/ silt
9	NL	Utrecht	Breeding	2994	Other agricultural use	Manured soil
10	NL	Gelderland	Hotel & training school	261	Sociocultural facilities	Humus podzolic soils
11	NL	Utrecht	Riding school & livery	9123	Sport and recreation	Calcareous sandy soils
12	NL	Limburg	Training	745	Other agricultural use	Loamy soils
13	NL	Gelderland	Event	35	Sport and recreation	Humus podzolic soils
14	NL	Utrecht	Livery	6854	Business site	Calcareous sandy soils
15	NL	Overijssel	Livery	8769	Other agricultural use	Old clay soils
16	NL	Utrecht	Livery	4430	Other agricultural use	Peatlands
17	NL	Zuid Holland	Riding school	118	Sport and recreation	Diverse

3.2. Function/Social Impact

When discussing the social impact of yards, German yard owners placed a strong emphasis on the physical facilities and additional services they could provide. A common theme was the importance of offering diverse facilities, including indoor and outdoor riding arenas, pastures, and paddocks. Many also stressed the value of tailored services to meet clients' specific needs, such as vacation stays and customized offerings. These services were viewed as essential to maintaining the yard's social relevance and attracting clientele.

Dutch yard owners, in contrast, highlighted the broader social function of their yards. Many viewed the yard as a hub for community engagement, emphasizing cooperation with stakeholders and the creation of a social environment where equestrians and non-equestrians alike could benefit. Governmental policies were also a significant factor in shaping this social impact, with yard owners divided over whether they viewed such policies as positive or negative. This ambivalence suggests that Dutch yard owners are navigating both the benefits and challenges posed by government involvement in their operations **(Table 3)**.

3.3. Anchoring

In terms of how yards are integrated into their environment, the type of surroundings, landscape integration, and safety emerged as important themes for both German and Dutch yard owners. The majority of German yards described themselves as being situated in rural areas. Half of the participants indicated that the neighborhood was lively and busy, while the other half emphasized the quietness of the areas. Yard owners also commented on different aspects of yard integration into the landscape. While some yards developed organically over time to meet the needs of clients, others encountered logistical challenges, such as the distance between essential grazing pastures or a lack of deliberate design. These differences highlight a mix of purposeful planning and adaptations driven by practical needs.

Safety was a major concern for German yards. Yard owners often stressed the importance of ensuring that children could reach the yard safely, though not all had achieved this goal. Some yards implemented additional safety measures, such as secure terrain and the use of monitoring systems like cameras, to address these concerns.

Table 3: Overview of key themes and descriptive categories for function/social impact in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
GER	Additional offers	Hotel/vacation	Opportunity to offer vacation stays at the yard.	25
GER	Additional offers	Customized service	Provision of specialized or tailored services to clients.	62.5
GER	Facilities available	Hacking area	Surrounding terrain suitable for outdoor riding (hacking).	62.5
GER	Facilities available	Indoor riding arena	Enclosed indoor arena for equestrian activities, particularly dressage.	75
GER	Facilities available	Other facilities	Additional facilities that do not fall into standard categories (e.g., oval track, solarium).	37.5
GER	Facilities available	Outdoor riding arena	Open-air arena designed for equestrian sports, such as dressage.	100
GER	Facilities available	Paddocks	Enclosed areas where horses can move freely and engage in social interactions.	50
GER	Facilities available	Pastures	Grassland areas for horses to graze and roam freely.	75
GER	Facilities available	Round pen/lunging circle	Circular arena used for groundwork and lunging exercises.	50
NL	Impact government	Negative governmental influence	Perceived negative impact of governmental policies on yard management.	44
NL	Impact government	Positive governmental influence	Perceived positive impact of governmental policies on yard management.	44
NL	Social function	Cooperation	Recognition of the importance of collaboration among stakeholders.	33
NL	Social function	Community engagement	Providing equestrian services that benefit the broader community.	67
NL	Social function	Transparency	Building confidence and trust by demonstrating activities and processes visibly.	22

In the Netherlands, while many yard owners preferred that their yards remain out of sight, they also prioritized safety and controlled access. Common safety measures included gated entrances, provisions to protect both clients and animals, and concerns over strangers entering the premises. Some yards even considered continuous monitoring with cameras as part of their safety strategy. Dutch yards tended to be closely linked to natural landscapes, with many situated near nature habitats despite being in busier, more populated regions **(Table 4)**.

Table 4: Overview of key themes and descriptive categories for anchoring in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
GER	Landscape Integration	Integrated design	During construction, yard owners considered how to integrate their yard into the surrounding landscape.	50
GER	Landscape Integration	Organic expansion of yard	The yard has grown slowly and in response to needs over several years.	50
GER	Landscape Integration	Previously different purpose	The yard was previously used for different activities before becoming an equine yard (e.g., a dairy yard).	50
GER	Landscape Integration	Problems with pastures	The yard does not have pastures connected to the property, or the pastures are too few or too far away.	37.5
GER	Landscape Integration	Not consciously designed	The yard and the property it is on were not consciously or purposefully designed.	25
GER	Landscape Integration	Yard fits in with surrounding landscape	The yard and its infrastructure integrate well with the surrounding landscape.	50
GER	Safety	Not safely reachable	Children cannot reach the yard safely on their own.	37.5
GER	Safety	Safe terrain	The yard is considered safe and/or monitored by cameras.	50
GER	Safety	Safe to reach	Importance of children being able to reach the yard safely on their own.	87.5
GER	Surroundings	Busy neighborhood	There is a lot of traffic (cars, people, bicycles, etc.) in the yard's immediate surroundings.	50
GER	Surroundings	Quiet neighborhood	There is little to no traffic (cars, people, bicycles, etc.) in the yard's immediate surroundings.	50
GER	Surroundings	Nature close by	The yard is in proximity to nature	50
GER	Surroundings	Few immediate neighbors	No or hardly any neighbors in immediate proximity to the yard.	62.5
GER	Surroundings	Rural	An area outside of the city/urban center, characterized by a low population density, open spaces, a focus on agriculture, small communities, and natural landscapes.	87.5
GER	Surroundings	Suburban location	A location at the outskirts of a city/urban center, is often characterized by residential neighborhoods with a lower population density.	75
NL	Landscape Integration	Flowing lines	Yard owners expressed a preference for flowing, organic lines in the yard's design.	22
NL	Landscape Integration	Preferable remains hidden	Yard owners prefer that the yard is not easily visible from the outside.	44
NL	Landscape Integration	Yard fits in with surrounding landscape	The yard and its infrastructure integrate well with the surrounding landscape.	33
NL	Safety	(Automatic) gate	The yard has a gate at the entrance, with only two having non-automatic gates.	56
NL	Safety	Safe space	Yard owners expressed the importance of providing a safe space for clients.	44
NL	Safety	Human-animal safety considerations	Yard owners emphasized the importance of safety considerations for both humans and animals.	44
NL	Safety	Monitoring	Yard owners expressed a desire to monitor the yard with cameras.	22

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
NL	Safety	Stranger safety concerns	Yard owners expressed feeling less safe when strangers are on the yard.	44
NL	Safety	Work delayed opening	The yard's opening is delayed to ensure safety during work.	33
NL	Surroundings	Busy neighborhood	There is a lot of traffic (cars, people, bicycles, etc.) in the yard's immediate surroundings.	56
NL	Surroundings	Nature close by	The yard is in proximity to nature.	78
NL	Surroundings	Quiet neighborhood	There is little to no traffic (cars, people, bicycles, etc.) in the yard's immediate surroundings.	44
NL	Type of Landscape	Forest landscape	The yard is surrounded by a forest.	22
NL	Type of Landscape	Industrial landscape	The yard is located in an industrial area.	11
NL	Type of Landscape	Rural landscape	The yard is situated in a rural landscape.	44

3.4. Accessibility

Accessibility presented challenges for both German and Dutch yards, though the specific concerns varied. In Germany, all yards reported difficulties with public transport access, making it difficult for clients to reach the yards by anything other than a car, bike, or on foot. Many yards also noted the functional limitations of their infrastructure, with several reporting that their layout did not fully meet operational needs. Additionally, some yards described their secluded locations, which, while providing privacy, also limited their visibility and ease of access for new visitors. Despite these challenges, German yard owners emphasized the importance of maintaining a user-friendly layout for clients, with most yards highlighting the smooth flow of clients and visitors as a key priority.

Dutch yards reported a more varied experience with accessibility. While some yards faced challenges with public transport, others noted that they were accessible by multiple means of transport, including cars and bicycles. Dutch yard owners, like their German counterparts, stressed the importance of user-friendly layouts, aiming to facilitate easy navigation around the property. Additionally, parking infrastructure emerged as an important aspect for Dutch yards, with most yards offering ample parking spaces for cars and trailers. Interestingly, some Dutch yards expressed a preference for unpaved parking, suggesting different priorities regarding aesthetic or practical considerations.

One key difference between the two countries was the emphasis on controlled access. While several German yards indicated that they benefited from their more secluded locations, all Dutch yards highlighted the importance of having a single, controlled entrance. This suggests a focus on ensuring security and maintaining oversight of who can enter the property, which may reflect differences in population density and proximity to urban areas between the two countries **(Table 5)**.

3.5. Routes

The level of access for passers-by, or those not directly connected to the yard, emerged as a complex issue for German yard owners. While the majority of German yards indicated that public access was neither possible nor desirable, a significant proportion of them reported that the public did enter the yard or that they would be open to non-equestrians visiting the yard upon request. This apparent contradiction may reflect the tension between the desire for privacy and the practical reality that some level of public access is inevitable. Yard owners in Germany were concerned with third-party traffic in the vicinity and emphasized the need to control access to maintain safety, privacy, and the well-being of their horses.

In contrast, fewer Dutch yards reported significant third-party traffic in the vicinity. Only a minority of yard owners indicated that public access would be possible, while not quite half of the yards reported that they were open to strangers upon request. Interestingly, their primary focus tended to be on maintaining a consistent and familiar clientele. These findings mirror those in earlier themes, which indicate the pronounced need for privacy and creating a secure and consistent environment within the yard **(Table 6)**.

Table 5: Overview of key themes and descriptive categories for accessibility in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Definitions	% of yards mentioning theme
GER	Transport	Poor public transport	Reaching the yard by public transport is difficult and/or not the best option.	100
GER	Transport	Non-motorized accessibility	The yard can be reached by bicycle and/or on foot.	100
GER	Transport	Good connectivity	The yard is relatively close to a city, motorway, or is easily reachable from different places.	75
GER	Transport	Motorized accessibility	The majority of clients require a car to reach the yard.	50
GER	Location	Easy to find	The yard can be easily found.	50
GER	Location	Secluded	The yard is hidden within its surroundings and thus not easily visible or accessible to strangers.	50
GER	Functional challenges	Limited constructional changes	The yard's facilities cannot easily be changed or repurposed.	50
GER	Functional challenges	Suboptimal infrastructure	The yard's infrastructure does not optimally serve its purpose.	37.5
GER	Functional infrastructure	Functional accessibility	The yard's facilities can be accessed with machines for work purposes.	62.5
GER	Functional infrastructure	Importance functional infrastructure	Infrastructure is serving the yard's purpose.	62.5
GER	Functional infrastructure	Paved infrastructure	All necessary paths are paved in some manner.	50
GER	Functional infrastructure	Yard size essential	The yard's size is essential and cannot be changed for the viability of its operations.	37.5
GER	Functional infrastructure	Parking	Having parking spaces available for cars (and trailers).	62.5
GER	Operational client flow	User-friendly layout	Ease of navigation around the yard.	87.5
GER	Operational client flow	Busy yard	The yard is usually busy with a number of clients.	62.5
NL	Transport	Multiple means of transport	The yard is accessible by car, bike, and public transport.	44
NL	Transport	Poor public transport	Reaching the yard by public transport is difficult and/or not the best option.	44
NL	Location	Easy to find	The yard can be easily found.	56
NL	Functional infrastructure	Importance functional infrastructure	Infrastructure is serving the yard's purpose.	67
NL	Functional infrastructure	Parking	Having parking spaces available for cars (and trailers).	89
NL	Functional infrastructure	Unpaved parking	Yard owners expressed an interest in unpaved parking.	22
NL	Limited points of entry	One entrance	Yard owners expressed the benefits of having only one entrance to the property.	100
NL	Operational client flow	User-friendly layout	Ease of navigation around the yard.	78

Table 6: Overview of key themes and descriptive categories for routes in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
GER	Level of public accessibility	Public access not possible or desired	It is not possible/desirable for strangers to enter or pass through the yard.	87.5
GER	Level of public accessibility	Third-party traffic in the vicinity	The presence of people unrelated to the yard within its surroundings (e.g., cyclists, people walking, etc.).	75
GER	Level of public accessibility	Open to non-equestrians	Open to strangers upon request.	62.5
GER	Level of public accessibility	Public access possible	The public can and does enter the yard.	50
GER	Level of public accessibility	No/hardly any third-party traffic on yard	Little to no presence of strangers unrelated to the yard within its surroundings (e.g., cyclists, people walking, etc.).	50
GER	Access for clientele	Exclusively for equestrians	The yard is solely open to clients and other equestrians.	25
GER	Restricted access	Fear of incidents	Access is restricted due to specific reasons, such as strangers feeding the horses, destroying private property, or jeopardizing the horses' safety in any way.	25
GER	Restricted access	Protection of privacy	Owners living in their yards wish to maintain a certain level of privacy.	25
NL	Level of public accessibility	Third-party traffic in the vicinity	The presence of people unrelated to the yard within its surroundings (e.g., cyclists, people walking, etc.).	33
NL	Level of public accessibility	No/hardly any third-party traffic on yard	Little to no presence of strangers unrelated to the yard within its surroundings (e.g., cyclists, people walking, etc.).	56
NL	Level of public accessibility	Public access possible	The public can and does enter the yard.	22
NL	Access for clientele	Always open house	Always open to clients during designated hours.	33
NL	Level of public accessibility	Open to non-equestrians	Open to strangers upon request.	44
NL	Access for clientele	Usual clientele	The same customers visit the yard.	89

3.6. Ambiance

The emotional value of yards and their overall ambiance emerged as a key theme in both Germany and the Netherlands. However, distinct differences between the two countries became apparent, particularly in how yard owners view the yard's emotional importance and the impact of interpersonal relationships on the overall atmosphere.

In Germany, a strong emphasis emerged on creating a positive impression and maintaining close relations with third parties, such as clients, neighbors, and the broader community. Yard owners often viewed their yards as the realization of their life's dream, viewing them as central to their lives. Clients were also thought to place significant emotional value on the yard, with closeness to nature considered a highlight. The desire to cultivate a tranquil and comforting atmosphere emerged as a clear priority, reflected in the importance yard owners place on creating a comfortable and calm environment. This commitment to ambiance was further emphasized by the role of interpersonal relationships, with yard owners stressing that the atmosphere is shaped by interactions between clients and owners. Friendly and familiar interactions were seen as essential for maintaining social cohesion and a positive atmosphere.

Dutch yards showed a similar concern for emotional value but with a more practical focus on managing interpersonal relations. Yard owners emphasized transparency and trust in their interactions with clients, seeing these values as central to maintaining a harmonious environment. Managing clientele was considered a key strategy for maintaining a positive ambiance, as yard owners took a more deliberate approach to fostering harmony within the yard. While the ambiance was frequently described as calm, some yard owners also highlighted the role of regular management routines in maintaining a peaceful atmosphere, reinforcing the structured nature of yard management in the Netherlands **(Table 7)**.

Table 7: Overview of key themes and descriptive categories for ambiance in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
GER	Desired portrayal of yard	Good impression	The yard's positive impression and good relations with third parties, like parents or neighbors, are important for maintaining a good image.	87.5
GER	Desired portrayal of yard	A place for horses, nature, & people	The yard should be a place where horses can live comfortably, and humans can feel at ease in nature—a place that integrates all these elements harmoniously.	50
GER	Emotional value for clients	Closeness to nature	Clients value the feeling of being close to and in harmony with nature.	75
GER	Emotional value for clients	Vacation vibes	Clients made to feel like they are on vacation or enjoy a brief escape from daily life when at the yard.	62.5
GER	Emotional value for clients	Home from home	Clients feel that both they and their horses are made to feel at home.	50
GER	Emotional value for owners	Life's dream	The yard is the realization of the owner's life dream or ambition, and it often centers around their entire life.	87.5
GER	Emotional value for owners	Love-hate relationship	The yard means everything to the owner, although they sometimes feel exhausted by it.	62.5
GER	Emotional value for owners	Home	The yard is the owner's home.	37.5
GER	Interpersonal relations	Impact on atmosphere	The interpersonal relationships between clients, and between clients and owners, greatly impact the yard's atmosphere.	87.5
GER	Interpersonal relations	Friendly interactions	Interactions between owners and clients, and among clients themselves, are familiar and friendly.	75
GER	Interpersonal relations	Importance of perception	How clients perceive others at the yard is considered significant.	37.5
GER	Perceived atmosphere	Comfort	The yard is perceived as a comfortable and comforting place.	87.5
GER	Perceived atmosphere	Calm	The overall ambiance of the yard is perceived as peaceful, quiet, or calm.	75
NL	Emotional value for clients	Connectivity	It is very important that clients feel connected, happy, and loved.	44
NL	Emotional value for clients	Home from home	Clients feel that they and their horses are made to feel at home.	78
NL	Emotional value for owner	Respectfulness	It is important for the owner to show respect to both people and animals.	33
NL	Emotional value for clients	Personal experience	Yard owners stress the importance of providing a personal experience for clients.	33
NL	Interpersonal relations	Transparency	Yard owners emphasized the importance of transparency and trust.	56
NL	Interpersonal relations	Managing clientele	Yard owners expressed the need to carefully manage who comes to and stays at the yard to maintain a positive overall ambiance.	56
NL	Perceived atmosphere	Calm	The overall ambiance of the yard is perceived as peaceful, quiet, or calm.	56
NL	Perceived atmosphere	Routine	The regularity and routine of yard management are considered an important part of maintaining a positive ambiance.	33
NL	Infrastructure impact	Facilities influence ambiance	Yard owners highlighted the influence that facilities can have on the yard's ambiance.	22

3.7. Uses & Activities

Both German and Dutch yards place a significant emphasis on equine-related activities, but the specific types and balance between equine and non-equine activities differ between the two countries.

German yards reported a strong focus on specialized equine services, with three-quarters of yards offering riding lessons, leisure riding, and other horse-related activities, such as clinics and courses. Non-equine activities are also relatively common, with more than half of the German yards offering events and festivities, and half offering additional leisure activities. However, German yards largely appear content with their current offerings, as indicated by a majority stating that they do not plan to introduce non-horse activities.

Dutch yards, on the other hand, show a broader range of equine-related activities, including practice competitions, clinics, and different equestrian sports events. Leisure riding also plays a central role, with the majority of Dutch yards offering this service. Although non-equine activities, such as hosting events and providing accommodations, are less prominent, they are still offered by a significant number of Dutch yards, indicating a more diversified use of yard space compared to Germany **(Table 8)**.

3.8. Gregariousness

German yard owners emphasized the importance of social infrastructure, with all yards highlighting the significance of common rooms for people to meet, gather, and socialize. Outdoor seating was also commonly mentioned as an important feature, creating spaces for interaction. Many yards consciously foster a strong sense of community, with efforts made to build relationships among clients. Some yards adapted their infrastructure specifically for equestrian use, though in a few cases, the placement of social areas was not structurally considered during the yard's design.

Dutch yard owners similarly valued social infrastructure, frequently mentioning the presence of common rooms and seating alongside arenas. There is a focus on creating spaces for clients to gather, with yard owners often stressing the importance of seating areas with views of the arenas. Transparency and communication with the community were also highlighted, with yard owners recognizing the importance of sharing information to foster trust and a sense of openness **(Table 9)**.

Table 8: Overview of key themes and descriptive categories for uses/activities in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
GER	Equine-related activities	Specialized offers	Unique equine services tailored to specific needs, such as dressage or jumping.	75
GER	Equine-related activities	Riding lessons	Formal lessons focused on teaching clients riding skills and techniques.	75
GER	Equine-related activities	Leisure riding	Horseback riding for recreational purposes without a competitive focus.	75
GER	Equine-related activities	Other activities with horses	Activities involving horses other than riding, such as groundwork or lunging.	62.5
GER	Equine-related activities	Clinics/courses	Workshops or courses that provide specialized equine training or education.	62.5
GER	Equine-related activities	Equestrian sport	Participation in competitive equestrian sports, such as showjumping or dressage.	25
GER	Non-equine activities	Festivities/events	Organizing social events, such as open days or holiday celebrations, on the yard.	62.5
GER	Non-equine activities	Other leisure activities	Recreational activities not related to horses, like hiking or picnics.	50
GER	Non-equine activities	Holidays	Offering holiday accommodations, such as equestrian vacation stays.	25
GER	Expansion of activities	No non-horse activities	Yard owners have decided not to offer any non-horse-related activities.	62.5
GER	Expansion of activities	Currently (almost) at capacity	Yard is currently operating at or near full capacity, limiting expansion options.	37.5
GER	Expansion of activities	Interest in non-horse activities	Yard owners have expressed interest in introducing non-horse-related activities.	25
GER	Expansion of activities	No interest in non-horse activities	Yard owners have no desire to expand to non-horse-related activities.	25

Country	Lower-order theme	Descriptive code	Definition	% of yards mentioning theme
GER	Equine husbandry	Breeding	Breeding horses, either as a primary business activity or to supplement yard services.	37.5
NL	Equine-related activities	(Practice)competitions	Hosting practice competitions for riders to simulate competitive environments.	44.4
NL	Equine-related activities	Clinics/courses	Workshops or courses that provide specialized equine training or education.	55.6
NL	Equine-related activities	Equestrian sport	Participation in or hosting competitive equestrian sports, such as showjumping or dressage.	55.6
NL	Equine-related activities	Breeding	Breeding horses, either as a primary business activity or to supplement yard services.	22.2
NL	Equine-related activities	Leisure riding	Riding for recreational purposes without a competitive focus.	66.7
NL	Equine-related activities	Riding lessons	Formal lessons focused on teaching clients riding skills and techniques.	22.2
NL	Equine-related activities	Training for others	Training horses on behalf of clients, which may include breaking, schooling, or advanced training.	33.3
NL	Equine-related activities	Therapeutic riding	Riding activities focused on therapeutic benefits for individuals with physical or psychological needs.	11.1
NL	Non-equine activities	Holidays	Offering holiday accommodations, such as equestrian vacation stays.	22.2
NL	Non-equine activities	Festivities/events	Organizing social events, such as open days or holiday celebrations, on the yard.	33.3
NL	Extra activities	Accommodation	Providing facilities for overnight stays, either for clients or as an additional business.	22.2
NL	Extra activities	Non-horse activities	Providing activities that do not involve horses, such as nature walks or workshops unrelated to equestrianism.	33.3

Table 9: Overview of key themes and descriptive categories for gregariousness in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Descriptions	% of yards mentioning theme
GER	Social infrastructure	Common rooms	Places indoors and/or outdoors for people to meet, gather, sit down, and socialize.	100
GER	Social infrastructure	Outdoor seating	Benches and other outdoor seating on the yard.	75
GER	Social infrastructure	Restructured for equestrian use	The yard's infrastructure was adjusted to meet the needs of equestrianism.	50
GER	Social infrastructure	Additional outdoor meeting points	Areas other than outdoor seating for people to meet.	37.5
GER	Social infrastructure	Integration not structurally considered	During construction, the placement of social areas was not a primary concern.	25
GER	Social infrastructure	More indoor places to stay	The desire to create more indoor social spaces in various forms.	25
GER	Social community	Sense of community	Valuing a strong community is perceived as important.	100
GER	Social community	Good yard community	The yard has a well-functioning community.	75
GER	Social community	Active community building	Efforts are consciously made to foster interpersonal relationships.	75
GER	Amenities	Drinks/snacks available	Drinks and/or snacks are available at the yard.	37.5

Country	Lower-order theme	Descriptive code	Descriptions	% of yards mentioning theme
NL	Social infrastructure	Common room	Places indoors and/or outdoors for people to meet, gather, sit down, and socialize.	78
NL	Social infrastructure	Seating alongside arena	Seating with a view of the arena.	67
NL	Social infrastructure	Outdoor seating	Benches and other outdoor seating on the yard.	67
NL	Amenities	Drinks snacks available	Providing basic drinks and/or snacks for clients.	56
NL	Amenities	Smoke area	A secluded area designated for smoking.	11
NL	Amenities	Changing room	Providing a place to easily change clothes.	11
NL	Social community	Sense of community	Valuing a strong community is perceived as important.	56
NL	Social community	Transparency with community	Yard owners emphasized the importance of sharing what they are doing with surroundings/customers.	44

3.9. Biodiversity

In Germany, attitudes toward biodiversity were generally positive, with yard owners emphasizing the importance of respecting nature and expressing openness to further integrating biodiversity. Many yard owners mentioned that they actively managed their grasslands and considered habitat conservation as part of their management strategies. However, there were challenges in specific areas, such as sustainable manure disposal, which was only being practiced by a smaller number of yards.

Yard owners reported the presence of small landscape elements, such as trees and hedges, but indicated that bird life and blue landscape features, like ponds or streams, were less common. Some participants expressed concerns about the conflict between nature conservation efforts and equine welfare regulations, noting that these regulations sometimes made it difficult to strike a balance. A portion of the yard owners also voiced skepticism toward the benefits of integrating more biodiversity, indicating potential barriers to further adoption of biodiversity practices.

In the Netherlands, yard owners had similarly positive attitudes toward biodiversity, with many seeing it as a key factor in improving both equine welfare and water management. Dutch yards often focused on the practical benefits of biodiversity, such as improving grassland quality and managing wet landscape features for better water quality. Yard owners expressed strong confidence in their current biodiversity practices, with several considering their efforts to be adequate or optimal.

Despite this, some Dutch yard owners pointed out practical concerns, such as managing bird waste and the potential negative impact of biodiversity on the tidiness of the yard. This suggests that while Dutch yards have embraced biodiversity, there are still challenges to address in maintaining a balance between aesthetics, functionality, and natural integration **(Table 10)**.

3.10. Equine Welfare

During data analysis, equine welfare emerged as an additional topic, with yard owners discussing the importance of forage, freedom of movement, social contact, and housing conditions in maintaining equine well-being.

In Germany, equine welfare practices were found to revolve around forage management and providing freedom of movement. Most yards emphasized the importance of allowing horses to graze during the summer and providing high-quality roughage. Innovative feeding systems, such as automatic hay racks and spread-out feeding stations, were also in place in some yards, although less widespread.

Many yards highlighted the need for spacious housing conditions that allow horses to move freely. Group housing systems were also common, indicating a strong emphasis on fostering social interactions. However, while some yards were focused on improving housing conditions and creating more space for free movement, others felt they had already optimized their facilities with no further room for improvement. While a majority of yards considered welfare their key priority, many also pointed out the difficulty of balancing equine needs with external circumstances, such as client demands, nature conservation regulations, or structural conditions.

Dutch yard owners also emphasized the importance of equine welfare, with a strong focus on social contact and turnout. The majority of yards ensured that horses have regular access to outdoor spaces and opportunities for interaction with conspecifics.

Housing considerations, such as managing natural light and sufficiently spacious stables, were also mentioned by a number of yards as playing a role in creating comfortable environments for horses. Similar to Germany, Dutch yard owners also raised the difficulty of balancing welfare with external demands, including local government restrictions, client demands, and the threat of wolves in some regions **(Table 11)**.

Table 10: Overview of key themes and descriptive categories for biodiversity in German and Dutch equine yards.

Country	Lower-order theme	Descriptive code	Descriptions	% of yards mentioning theme
GER	Attitude toward biodiversity	Respect for nature	Yard owners perceive respectful and sustainable treatment of nature as important.	75
GER	Attitude toward biodiversity	Open for further integration	Yard owners express their willingness to learn more about and further integrate biodiversity.	62.5
GER	Attitude toward biodiversity	Close to nature	Yard owners believe themselves to be closely connected to nature.	50
GER	Attitude toward biodiversity	Aesthetic value of plants	Yard owners and clients perceive green landscape elements as aesthetically pleasing.	50
GER	Attitude toward biodiversity	Unavoidable biodiversity integration	Yard owners consider further integration of biodiversity on yards as unavoidable.	25
GER	Current actions	Own grassland management	Yards managing their own grassland.	75
GER	Current actions	Considerations of habitat conservation	Conscious consideration of habitats on the yard.	62.5
GER	Current actions	Own roughage production	Yards producing their own roughage.	37.5
GER	Current actions	No chemical pesticides	No use of chemical pesticides in land and forage management.	37.5
GER	Current actions	Sustainable manure disposal	Yards with a sustainable method for disposing of manure, such as using biogas plants.	37.5
GER	Current actions	No roughage production	Yards without their own roughage production.	25
GER	Own biodiversity rating	Unfamiliarity with assessing own yard	Biodiversity has never been discussed or considered, and/or the yard's current biodiversity level cannot be assessed.	62.5
GER	Own biodiversity rating	Green yard	Yard owners assessing their yard as quite biodiverse.	37.5
GER	Perceived biodiversity indicators on site	Green landscape elements	Presence of green landscape elements like trees, bushes, hedges, etc., on the yard.	87.5
GER	Perceived biodiversity indicators on site	Bird life	Large presence of birds at the yard.	37.5
GER	Perceived biodiversity indicators on site	Blue landscape elements	Presence of blue landscape elements like ponds, streams, etc., on the yard.	25
GER	Perceived biodiversity indicators on site	Other domestic animals	Presence of domestic animals like cats, dogs, etc.	25
GER	Perceived challenges	Conflict between nature conservation and animal welfare	The conflict of contradicting nature conservation and animal welfare regulations experienced by yard owners.	50
GER	Perceived challenges	Manure disposal	Issues with rule-conforming and practical manure disposal.	37.5
GER	Perceived challenges	Soil quality	The unfitness of the soil for equestrianism at a yard.	37.5
GER	Perceived challenges	No perceived advantages	Yard owners expressing that they do not see any advantages in further integrating biodiversity and feel skeptical toward it.	37.5
GER	Perceived challenges	Unwilling to integrate more biodiversity	Yard owners expressing their unwillingness to further integrate biodiversity at this moment.	37.5

Country	Lower-order theme	Descriptive code	Descriptions	% of yards mentioning theme
GER	Perceived challenges	Conflict between poisonous plants and biodiversity	Plants that are poisonous for horses are negatively associated with biodiversity by yard owners.	25
GER	Policy requirements	Compensatory planting	Planting landscape elements as compensation for nature lost, e.g., due to construction.	62.5
NL	Biodiversity awareness and attitudes	Biodiversity impact on image	Respondents stated that biodiversity influences the yard's image.	33
NL	Biodiversity awareness and attitudes	Biodiversity vs. business priorities	Respondents expressed the need to balance biodiversity efforts with the practicalities of running a business.	44
NL	Biodiversity awareness and attitudes	Preserving natural habitat	Providing space for and being careful with nature.	56
NL	Biodiversity benefits	Biodiversity for equine welfare	Yards that expressed the use of biodiversity to improve equine welfare.	56
NL	Biodiversity benefits	Biodiversity for functional benefits	Yards expressed ideas for utilizing biodiversity for material and functional benefits.	44
NL	Biodiversity benefits	Biodiversity to improve water quality	Yards that would like to or are using wet landscape features to improve water management.	56
NL	Biodiversity benefits	Grassland quality	Biodiverse grassland is considered better than monoculture grassland.	44
NL	Biodiversity self-evaluation	Perceived insufficient biodiversity	Self-evaluated as having insufficient biodiversity.	22
NL	Biodiversity self-evaluation	Perceived adequate biodiversity	Self-evaluated as having sufficient biodiversity.	67
NL	Biodiversity self-evaluation	Perceived perfect biodiversity	Self-evaluated as having an optimal integration of biodiversity.	67
NL	Perceived biodiversity indicators on site	Bird life	Large presence of birds at the yard.	56
NL	Perceived biodiversity indicators on site	Land-based animals	Wild land-based animals on the yard.	56
NL	Perceived challenges	Managing bird waste	Utilizing shelves to minimize bird mess.	22
NL	Perceived challenges	Negative impact on tidiness	Yard owners commented that it takes more work to maintain a neat appearance of the yard.	44

3.11. Financial Viability

Financial viability also emerged as an additional topic during the interviews, with yard owners highlighting the importance of infrastructure, customer satisfaction, and diverse income streams.

German yards emphasized the importance of structural requirements, with a strong focus on ensuring that the physical infrastructure of the yard supported financial stability. Financial sustainability was often linked to having a sufficient number of satisfied customers, maintaining a balance between economic viability and yard improvements, and having diversified sources of income.

German yard owners also indicated facing significant barriers to financial stability, including a lack of external resources and skilled personnel. Additionally, some yards expressed concerns about non-profitable aspects, such as owning too many horses that do not generate income, highlighting the financial pressures of maintaining the yard.

In the Netherlands, a number of yard owners expressed a need for governmental financial assistance, particularly if it serves a useful purpose or supports biodiversity.

Dutch yards also adopted more collaborative and customer-centric strategies, with many emphasizing the importance of working together with other yard owners to reduce costs and passing extra expenses on to clients. They also indicated prioritizing the reuse of materials or manufacturing their own. Diversification of income remained important, but Dutch yards appeared more willing to adapt and collaborate to achieve financial sustainability **(Table 12)**.

Table 11: Overview of key themes and descriptive categories for equine welfare in German and Dutch equine yards.

Country	Lower-order theme	Descriptive category	Descriptions	% of yards mentioning theme
GER	Forage	Grazing in summer	Emphasized the importance of allowing horses to graze on pastures during the summer.	75
GER	Forage	Good-quality roughage	Highlighted the need to provide good-quality roughage.	62.5
GER	Forage	Innovative feeding methods	Yards employing innovative feeding methods, such as automatic hay racks or multiple feeding stations spread across the enclosure.	37.5
GER	Freedom	Freedom of movement	Emphasized the importance of providing housing conditions spacious enough to allow free movement.	75
GER	Friends	Group housing	Yards implementing group housing systems.	62.5
GER	Future ambitions	More space for free movement	Emphasized the need for larger enclosures to allow horses to move freely.	50
GER	Future ambitions	Improving housing conditions	Improving individual stables or adding paddocks to individual stalls.	50
GER	Future ambitions	Room for improvement	Many opportunities were identified for improving the yard to better promote equine welfare.	25
GER	Future ambitions	No room for improvement	No further opportunities are available to improve the yard to promote equine welfare.	25
GER	Future ambitions	Improving riding arenas	Improving arenas to provide better training conditions.	25
GER	Housing	Species-appropriate housing	Yard owners emphasized the importance of providing species-appropriate housing conditions to ensure welfare.	75
GER	Housing	Shelter & lying areas	Yard owners highlighted the presence of shelter and lying areas.	37.5
GER	Housing	Safety	Consideration of safety in horses' outdoor areas, including safe constructions and protection from poisonous plants.	25
GER	Welfare aspects	Additional exercise	Emphasized the importance of providing enough additional exercise to maintain the horses' health.	37.5
GER	Welfare challenges	Feed management	The challenge of satisfying individual roughage needs in group housing systems.	37.5
GER	Welfare challenges	Conflict between nature conservation & equine welfare regulations	The challenge of complying with both nature conservation and equine welfare regulations.	25
GER	Welfare challenges	Conflict between human- & equine welfare	Conflict noted between human clients' needs/desires and equine welfare requirements.	25
GER	Welfare challenges	Restrictions due to lack of resources/ structures	Implementation of measures to enhance equine welfare is restricted by limited monetary resources and/or structural conditions.	25
GER	Welfare challenges	Suitable herd dynamics	The challenge of creating harmonious herds in group housing systems.	25
GER	Welfare priority	Equine welfare = No. 1 priority	Equine welfare is considered the top priority by yard owners.	62.5
NL	Feed management	Feed management	Emphasized the importance of effective feed management.	44
NL	Freedom	Turnout	Emphasized the importance of turnout	67
NL	Friends	Social contact	Highlighted the importance of social contact among horses.	67

Country	Lower-order theme	Descriptive category	Descriptions	% of yards mentioning theme
NL	Housing	Light management	Emphasized that stables should be naturally well-lit.	33
NL	Housing	Size stables	Stressed the importance of having sufficiently large boxes.	33
NL	Welfare challenges	Local government restrictions	Yard owners aiming to improve certain welfare aspects but are hindered by local government regulations.	44
NL	Welfare challenges	Conflict between human- & equine welfare	Conflict noted between the needs/desires of human clients and the requirements for equine welfare.	44
NL	Welfare priority	Basic/natural needs	Emphasized the importance of tending to the horses' natural needs, often expressed as "let a horse be a horse."	67
NL	Wolf threat solution	Wolf solution: horses indoors	Keeping horses indoors as a solution to ensure safety from wolves.	33
NL	Wolf threat solution	Wolf solution: fence	Installing special fencing to keep out wolves.	33

Table 12: Overview of key themes and descriptive categories for financial viability in German and Dutch equine yards.

Country	Lower-order theme	Descriptive category	Descriptions	% of yards mentioning theme
GER	Structural requirements	Sufficient yard infrastructure	The necessity of having appropriate, yard-specific infrastructure.	75%
GER	Financial sustainability strategies	Enough satisfied customers	Yards need enough satisfied customers to remain viable.	62.50%
GER	Financial sustainability strategies	Balance between economic viability & ideas for improvement	The importance of maintaining a balance between income and expenses when making improvements.	50%
GER	Financial sustainability strategies	Several sources of income	Diversifying yard activities to have multiple sources of income, such as combining a riding school with a livery yard or other aspects.	50%
GER	Financial sustainability strategies	Attractive & affordable offers	The need to offer attractive and affordable services to remain competitive.	25%
GER	Financial sustainability strategies	Voluntary support	The need for voluntary support to help run the yard.	25%
GER	Barriers to financial stability	Lack of external resources	Any improvements would require a combination of new regulations (nature- or welfare-related), additional funding, or increased labor input, making it a complex challenge.	62.50%
GER	Barriers to financial stability	Lack of skilled personnel	The severe shortage of skilled staff is currently faced by the yards.	37.50%
GER	Barriers to financial stability	Non-profitable aspects	Yards expressing concerns about non-profitable aspects, such as owning too many horses that do not generate income.	25%
GER	Structural requirements	Functional stable design	Yards that have consciously designed their stables to require minimal labor input.	25%
NL	Financial support	Pro-governmental financial help	Would like or need governmental financial support.	56%
NL	Financial support	Governmental financial help only for bio/purposeful	Specifically expressed a preference for governmental financial support only if it serves a useful purpose or supports biodiversity.	44%

Country	Lower-order theme	Descriptive category	Descriptions	% of yards mentioning theme
NL	Financial sustainability strategies	Reuse/produce own materials	When materials that would normally need to be purchased can now be reused or produced by the yard.	44%
NL	Financial sustainability strategies	Quality over cost	When quality is prioritized as being more important than cost.	33%
NL	Financial sustainability strategies	Work together	Reducing costs by working together with other yard owners.	56%
NL	Financial sustainability strategies	Diversification of income	Diversifying yard activities to have multiple sources of income, such as combining a riding school with a livery yard or other aspects.	44%
NL	Financial sustainability strategies	Customer-centric financial strategy	Passing extra expenses on to customers and adapting to changes over time.	56%

4. Discussion

The aim of this study was to investigate equine yard owners' perceptions of what they consider important when designing biodiverse, functional yards. The findings demonstrate that a variety of aspects—ranging from land use and social interactions to accessibility and biodiversity—play a significant role in yard design and management. At the same time, certain cultural differences became apparent, even between countries as geographically close as Germany and the Netherlands. Previous research has shown that differences in historical and cultural influences shape the way individuals prioritize and balance environmental, social, and economic factors, including landscape features **[37–39]**.

The results show that designing equine yards requires balancing the needs of horses with the broader social and ecological requirements of the yard, reflecting the idea that equine yards exist at the intersection of functional agricultural landscapes and socially meaningful spaces **[14,22,40]**. Yard owners in both countries emphasized the significance of equine welfare, particularly through the 3Fs—Freedom, Forage, and Friends. These principles underline the importance of natural behavior, such as grazing and social interactions, which directly influence the layout of yards. Group housing and extensive pasture space were prioritized to support equine well-being, reflecting practices that encourage biodiversity and ecological management **[23,24]**.

However, the practical integration of these welfare measures with biodiversity goals varied somewhat between Germany and the Netherlands, due in part to differences in available land and cultural attitudes toward ecological integration. Dutch yards demonstrated a more diverse approach to multifunctional land use, frequently incorporating blue and green landscape elements for both functional and ecological purposes. These findings align with previous research by Wolframm *et al.* **[13]** and lend additional weight to the role the equine industry can play in enhancing agriculture's contribution to biodiversity **[41]**. Conversely, German yards, while often open to the idea of enhancing biodiversity, reported challenges in harmonizing biodiversity with equine welfare, such as dealing with poisonous plants that posed risks to equine health **[25,42]**.

While German and Dutch yards share similar goals related to welfare and biodiversity, cultural differences tend to shape their approaches on how to incorporate these aspects into yard design and management. Dutch yards showed a higher degree of multifunctionality, leveraging blue and green infrastructure for ecosystem services like water management, while simultaneously enhancing the landscape's aesthetic and functional value. These findings align with Hedenborg *et al.* **[43]**, who argued that equine yards have responsibilities that extend beyond their core functions, contributing to ecological connectivity and engaging with the wider community.

German yards, on the other hand, appeared more homogeneous in their use of land, focusing largely on equestrian functions. This emphasis on facilities and specialized activities, such as riding schools and therapeutic riding, reflects a narrower yet potentially more stable operational model where equine welfare and infrastructure are more rigidly defined. Cultural differences in land availability and government policies likely contribute to these distinctions, as the limited land in the Netherlands requires more diverse land-use strategies **[44]**.

Current findings suggest that, at present, Dutch yard owners prefer for their yards to remain out of sight, with controlled access to strangers through gates and restricted entry points. As Dutch yard owners are generally faced with greater population density and greater proximity to urban areas, these measures likely reflect genuine concerns about safety and protecting both horses and clients. However, such an emphasis on privacy and limiting public interaction carries the risk of being perceived as isolated and relevant only to an exclusive group of users. Given the high population density and the need for multifunctional land use in the Netherlands, a more proactive approach to interacting with members of the public could facilitate the integration of equine yards into the local community and

their contribution toward the collective action required in the agroecological transition [2,3,45].

Interestingly, for German yard owners, the underlying sentiment of how to balance community engagement and yard safety seemed very similar to that of their Dutch counterparts, yet they also demonstrated a different approach on how to deal with it. While German yard owners did indicate the desire to remain secluded, they also acknowledged the need to allow access to non-equestrians more readily. Germany, of course, is a much larger country, with greater levels of seclusion, particularly in the countryside. As a result, yard owners may be much more aware of the importance of encouraging community engagement despite their personal preferences for keeping the yard—and its inhabitants—shielded from too much outside interference.

After all, equine yards are not merely functional agricultural units; they are also social spaces that need to cater to and accommodate the needs of both equine and human users [22]. People-centered approaches have been increasingly used in open-space design, emphasizing the importance of incorporating the perspectives of individuals directly affected by the design [46,47]. According to [48], spaces that consider human needs beyond physical requirements are likely to be more functional, beautiful, and meaningful. In practice, this means designing yards that incorporate areas for social gatherings, such as common rooms or seating with views of riding arenas, where clients and visitors can interact in a welcoming and inclusive setting. Both Dutch and German yards highlighted the importance of social spaces and fostering close relationships within the equestrian community. This reflects a desire to build social cohesion within the regular clientele as well as visitors. Considering the increasing pressure to demonstrate the broader societal (and ecological) value of equine yards to the broader community, such an approach becomes increasingly important in maintaining the social, economic, and ecological validity of equine yards [49].

Current findings also showed that financial viability is a core consideration for yard owners, influencing their ability to implement welfare or biodiversity measures. Both German and Dutch yards adopted strategies to diversify income, such as hosting non-equine activities or offering accommodations, to enhance their financial sustainability [29]. The Dutch preference for governmental financial support, especially in support of biodiversity, indicates a greater reliance on external funding mechanisms to maintain operations. This reliance aligns with the European Green Deal's focus on incentivizing ecological contributions through financial support [6]. However, it also demonstrates the importance of creating the conditions necessary to implement changes [13,50,51]. This means that to realize the significant potential of equine yards for enhancing biodiversity and fulfilling multifunctional roles in rural landscapes, their role and contribution need to be acknowledged in agricultural and ecological policy frameworks. To that end, accessible, actionable guidelines are required to help both yard owners and policymakers design and manage spaces that support both biodiversity and equine welfare while ensuring economic viability. Based on current findings, a number of preliminary design guidelines were drawn up with these aims in mind. Future research should aim to expand and define these guidelines.

5. Preliminary Design Recommendations

5.1. Equine Welfare

Design for the 3Fs: Ensure yard layouts support free movement of horses ("freedom"), access to high-quality forage, and social interactions with conspecifics ("friends") to enhance equine welfare.

Green-blue corridors: Integrate hedgerows, ponds, and other green-blue elements into the yard design, for example, as natural barriers between fields, to enhance landscape connectivity and ecological function.

Natural shelter and shade: Plant trees and shrubs to provide shelter and shade, supporting both equine welfare and local biodiversity.

5.2. Biodiversity

Mixed habitats: Utilize mixed habitat designs featuring native shrubs, wildflowers, and pastures to stimulate natural grazing behavior in horses and increase ecological benefits.

Biodiversity zones: Establish specific biodiversity zones that are entirely or partially inaccessible to horses, maintaining a balance between conservation and welfare needs.

5.3. Social Function

Social hubs: Design common areas where clients and visitors can gather, enhancing the yard's role as a community hub and encouraging interaction beyond equine activities.

Public accessibility: Improve public transport and pedestrian access to make yards more inclusive, fostering community involvement and engagement in biodiversity initiatives.

Controlled access: Implement controlled entry points to manage visitor flow and ensure safety for horses, people, and sensitive ecological areas.

5.4. Financial Sustainability

Diversify business strategies: Develop separate income streams by incorporating non-equine activities such as workshops, accommodations, or eco-tours to support multifunctionality.

Collaborative resource management: Work with neighboring yards to share resources, thereby reducing costs and increasing financial resilience.

6. Limitations

Lastly, to ensure appropriate interpretation of current findings, a number of limitations to the current study need to be borne in mind. The convenience sampling approach used to select participants may limit the generalizability of the results, as selected yards are likely not fully representative of all equine yards in Germany and the Netherlands [52]. Additionally, while the use of semi-structured interviews provided rich qualitative data, it may

have introduced biases based on the participants' subjective views and the interviewers' framing of questions [53].

The socio-spatial analysis framework applied in this study provided a structured approach to yard evaluation, but its adaptation meant the exclusion of certain original aspects, such as uniqueness, which could have contributed additional insights. By concentrating on Germany and the Netherlands, the findings may not be directly applicable to other European countries with different cultural, regulatory, or geographical contexts.

7. Conclusion

The comparison between Germany and the Netherlands across these themes reveals distinct priorities and approaches in managing equine yards. Germany tends to focus more on tangible infrastructure, internal resources, and optimizing existing facilities, while the Netherlands emphasizes social dynamics, collaboration, and adapting to external influences. Both countries show a strong commitment to equine welfare and biodiversity, but some of the strategies employed reflect their unique cultural and environmental contexts.

Current findings show that the integration of biodiversity into equine yards is a multifaceted approach that offers significant benefits for the environment, equine welfare, and the financial sustainability of equine businesses. In order to maximize the potential of equine yards to contribute toward the agroecological transition, concrete, effective guidelines are required for yard owners and policymakers. After all, the success of the agroecological transition hinges in no small part on the practical implementation of biodiversity and equine-related measures in the social, ecological, and economic context of each yard.

The future of equine yard management lies in the adoption of sustainable practices that balance the needs of the environment, animals, and people. As the equine sector continues to evolve, it has the potential to become a leader in biodiversity conservation and sustainable land management, contributing to a more resilient and ecologically diverse landscape.

Supplementary Materials

Supplementary materials include the full list of semi-structured interview questions used in the study.

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Authors' Contribution

Conceptualization, I.W.; methodology, I.W.; formal analysis, L.L., T.S., and I.W. Writing—original draft preparation, L.L., T.S., I.W., and S.R.; writing—reviewing and editing, I.W.; supervision, I.W. and S.R.; All authors have read and agreed to the published version of the manuscript.

Data Availability

Data storage was conducted according to the Research Data Management policy framework of the University of Applied Sciences Van Hall Larenstein. Data management will adhere to the principles of Open Science, and data is accessible upon request.

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Conflicts of Interest

The authors declare that there are no conflicts of interest.

Ethical Approval

The study was conducted according to the Netherlands Code of Conduct for Research Integrity and followed the guidelines of the Declaration of Helsinki.

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