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The role of shared space fostering cooperation towards sustainable wellbeing in urban communities: The representative case of the Genova community in Freiburg, Germany

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Publisher's Abstract:

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THE ROLE OF SHARED SPACE FOSTERING COOPERATION TOWARDS SUSTAINABLE WELLBEING IN URBAN COMMUNITIES: THE REPRESENTATIVE CASE OF THE GENOVA COMMUNITY IN FREIBURG, GERMANY

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ABSTRACT

The transition towards a sustainable society requires that sustainable forms of wellbeing – here understood as the set of practices that positively influence the social, emotional and physical state of individuals – are widely applied and experienced positively in daily life. Coming up with such scenarios requires cooperation. This explorative qualitative study identifies conditions that lead to successful production of sustainable wellbeing in the Genova community. The community is representative of Vauban, one of Germany's largest sustainable living districts with worldwide reputation. Drawing on common pool resource (CPR) theory, it is argued that a given shared space has the potential to become a valuable asset that encourages cooperation for long-term gains among its users when effective governance structures are established. The analysis shows that the green area, the common room and the roof terrace host a wide variety of social and emotional wellbeing-related activities, such as gatherings or sunbathing, and are greatly appreciated by the group. The different facilities and related activities need backing and give rise to different forms of cooperation. While incidental financial contribution is mainly associated with the creation of infrastructure, the organization for its use along with maintenance-related activities count for long-term cooperation. The functional community displays all elements established by the CPR theory. The paper supports evidence-informed societal transitions towards sustainability while making visible applied forms of wellbeing and conditions for success.

Keywords: cooperation, sustainable wellbeing, shared space, governance, communities, societal transition.

1 INTRODUCTION

Genova is a community founded in 1997 and settled in Freiburg, Germany. Residents are owners and tenants of their apartments at the same time, paying a relatively very low rent to live there. Like many other communities in the area, its construction involved active participation of the residents. Today, the residents (111 adults and 25 children in 2021) have access to roof terraces where they relax and enjoy the sunset. In the same way, they perform numerous social activities in the green area and common room. The next week, they will meet to organize the cleaning day.

Based on the idea that a transition to sustainability requires new configurations of social practices [1], this research identifies conditions for the successful production of different forms of everyday sustainable wellbeing. What types of sustainable wellbeing could be produced within urban communities and what are the conditions for long-term success? What is the role of the shared space and rules for success? The answer to these questions could help cope with the increasing number of people experiencing worry, sadness, anger or physical pain, which reached a new peak in 2018 [2], as well as with declines in biodiversity, seriously reducing nature's capacity to contribute to people's wellbeing [3].



In line with literature on social transition, we understand sustainable wellbeing as the set of practices that positively influence the social, emotional and physical state of individuals, beyond economic indicators [4]–[7]. Under this umbrella, sustainability and wellbeing are perceived as interlinked concepts, where human wellbeing depends on the vitality of the ecosystems [5]. Accordingly, we explore how individuals can live good lives while working towards their emotional and physical wellbeing.

Immediate living environments have a significant impact on personal quality of life and reflect a specific lifestyle of the inhabitants [8] thus representing an opportunity for the spread of sustainable wellbeing practices on a large scale. Community wellbeing has been evaluated from a number of different perspectives. For a conceptual review of community wellbeing, see Atkinson et al. [9]. While such analysis typically distinguishes between objective wellbeing (it can be measured and evaluated over time, e.g. income) and subjective dimensions of it (e.g. happiness), the sustainability dimension is not included. As a result, the evaluation of wellbeing is often made on the basis of a comprehensive list where indicators like – the availability of help from neighbours – are mixed with clearly non sustainable indicators, such as the availability of car parking spaces, adding confusion towards desirable outcomes. Furthermore, while much effort has been devoted to defining and measuring community wellbeing in a comprehensive manner [10]–[12] there has been little discussion about its production and maintenance.

Production and maintenance of wellbeing is about cooperation. For instance, before enjoying a beautiful view on the terrace, a terrace should be there. Building a terrace implies planning and mobilizing financial resources among other actions. Once it is ready, users have to keep it clean and in good condition. How to achieve collective action remains a puzzle. Furthermore, there is little empirical literature about the types of processes driven by civil society in the form of community-based initiatives and their effectiveness to enhance sustainability [13]. As a result, the transition towards sustainability is taking place with little practical knowledge, and forms of applied sustainable wellbeing are almost non-existent or non-visible.

Common pool resource (CPR) theory by Ostrom [14], Ostrom et al. [15] and Ostrom [16] is one of the most used frameworks to understand how individuals using a common-pool resource organize themselves to pursue their joint welfare. One of its main assumptions is that successful use of CPR is possible when the right governance structure is in place. While the theory typically deals with cases where participants realize their wellbeing via successful management of natural resources as forests [14], it has been also used to study the urban commons in form of open space, infrastructure, or culture [17]. Its relevance for the production of wellbeing in the housing sector, however, has gone mostly untapped. There might be a number of reasons for this, e.g. regulations prioritizing prohibition over action, building designs focused on privacy, and the lack of organizational forms facilitating neighbours to act together.

Drawing on CPR theory we examine the argument that a given shared space has the potential to foster cooperation for the production of long-term sustainable wellbeing when Ostrom's governance principles are established: Clearly defined boundaries; Congruent arrangements; Collective and adaptive arrangements; Monitoring; Gradual sanctions; Conflict management arena; Institutional awareness, and Nested systems. We use a mixed method approach to collect and analyse data from the German housing community of Genova in Freiburg, for this purpose. The community has particular characteristics that make it especially suitable for our study: it provides shared spaces for joint production, it is ruled by a common property regime, it has high levels of self-government, and it has a regulation that promotes high levels of involvement and action. It also meets the criteria by Forrester and Wiek



[13] when selecting communities to identify success factors in the transition towards sustainability: The minimum population is 50 and a significant number of members share environmental concerns: the residence area is geographically bounded and small enough that residents can interact under regular basis, the level of participation is noticeable and the community is at least 2 years old.

This study contributes to a better understanding of the production of sustainable wellbeing in urban housing communities in several ways. First, based on in-depth qualitative research, it shades light on the spaces where a wide range of daily life sustainable wellbeing-related activities are engaged. Second, it identifies the types of cooperation associated with the production and maintenance of the different forms of wellbeing as well as their link with the prevalent governance system. In doing that, we provide relevant information about the required spatial and social configurations towards success. Furthermore, Genova is typical of Vauban, one of the greatest sustainable districts in Germany and thus a model case for the spread of sustainable living practices at large scale.

First, we present the main assumptions of the CPR theory for successful cooperation. This is followed by the research design and data, which includes key characteristics of the studied community, and methodological choices. Then the analysis is presented along with the conclusions and discussion.

2 THEORETICAL FRAMEWORK

The failure of a large number of community projects to achieve their objectives shows how difficult it is to reach cooperation agreements for the common benefit. ‘The tragedy of the commons’ is a timeless statement that Hardin catapulted into the forefront of the cooperation problems in 1968. It describes a herdsman who – motivated by the idea of improving its personal wellbeing – increases his herd without limit in a pasture that is limited. The tragedy occurs when more herdsman behave in the same way and the grazing land is exhausted [18]. Hardin’s prediction assumes that all group members are inherently rational and selfish individuals trying to maximize individual gains. There is therefore little room for cooperation. The described situation can be equally applicable to housing environments. For instance, community members might be tempted to enjoy the benefits of a well-tended green area (play and picnic area, space to stretch and sunbathe, etc.). However, all the users might be tempted to expect other users to mow the grass. If nobody deals with gardening, the area is not suitable for further use, to the detriment of all the users. What characteristics of social organization enable small-scale, self-organized groups to sustain long-term cooperation when managing commons? CPR theory probably is the most advanced attempt to answer that question.

CPRs include natural and human constructed resources in which: (i) exclusion of beneficiaries through physical and institutional means is especially costly; and (ii) exploitation by one user reduces resource availability for others [15]. Without effective rules limiting access and defining rights and duties, Hardin’s prediction tends to occur.

Regarding the influence of participants’ characteristics on cooperation, Ostrom identified three types of individuals with interchanging roles. Consequently, the likelihood of cooperation of positive results increases. In this way, ‘rational egoist’ (acting only when it is suitable for them) share the stage with ‘conditional cooperators’ (cooperating as long as cooperation is reciprocal) and ‘willing punishers’ (sanctioning others when necessary, and never giving up). Conditional cooperators appear to be the largest group before kick-off and play a central role fostering success as many of them might interrupt or give up cooperation if others do not contribute.



Ostrom summarizes the conditions that support successful management of CPRs in the following eight governance principles, which address first order (credible commitment) and second order free-rider problems (monitoring and sanctioning others).

1. Clearly defined boundaries. To know who belongs to the group facilitates the fair allocation of rights and duties, as well as the emergence of trust, reciprocity and reputation among insiders. Group boundaries might be physical (e.g. individuals living in a particular setting) and/or symbolic (e.g. common beliefs).
2. Congruent arrangements. Benefits (or outputs) dealing with the questions *how much*, *when* and *how* should be made in accordance with required inputs (e.g. labour, material or money), providing participants with a sense of fairness.
3. Collective and adaptive arrangements. Collective decision-making processes facilitate the creation of *good* rules, that is, tailor-made rules to local circumstances that are modified when necessary and are perceived as fair. Fair rules facilitate compliance and so the enhancement of trustable relationships as a side effect.
4. Monitoring. To have *good* rules is not enough. Rule compliance must be granted. Trust and reciprocity help to enforce compliance with rules, but what is decisive is to appoint internal and or external monitors who monitor the resource and its users.
5. Gradual sanctions. Rule breakers should be penalized in order to avoid a domino effect on the lack of cooperation. Sanctions should be modulated as a function of the seriousness of the harm and context, and should be considered when making rules, reducing personal costs for 'willing punishers' and providing confidence in the achievement of common goals.
6. Conflict management arena. It is important to create mechanisms for rapid clarification of the expected actions, benefits, and non-compliances.
7. Institutional awareness. A successful long-term self-organized system requires the support from external local authorities that do not insist on imposing their own set of rules.
8. Nested system. When the commons belong to a larger system, it is necessary to create a nested set of management actions in order to address local conditions.

Ostrom also identified contextual conditions influencing cooperative behaviour. Face-to-face communication facilitates the built of trust, reciprocity and reputation, widely recognized as key pillars underpinning social agreements. It is through verbal communication that individuals convey information about the benefits of cooperation, make public commitment for action and increase their trust in the commitment of others, but also show support or irritation in response to success or failure. Migration process may change the configuration of the group, and therefore the outcomes. Group size and characteristics of the resource also matter. A relatively small group might facilitate learning processes through trial and error, while characteristics of the resource and the users affect the perceived costs and benefits. Here, the resource should be sufficient for everybody, long lasting, and good enough to motivate investment. Genova is a community that enjoys the benefits of collective action since more than 25 years ago. In the following sections, we introduce the community and analyse the reasons for success.

3 RESEARCH DESIGN AND DATA

To explore the conditions that led to the successful production of sustainable wellbeing requires data collection in successful settings.



3.1 The setting

We collected data from Genova, a community where a wide range of forms of sustainable wellbeing are experienced on a daily basis. The community is representative of Vauban, a sustainable urban district of about 5,200 residents and 2,388 dwellings in an area of approximately 42 hectares [19]. The district enjoys a worldwide reputation for integrating the topics of citizen participation and sustainable practices. For a comprehensive overview of Vauban's project, see Sperling [20]. The dimension of the project facilitated the diversity of housing types, tenure (cooperatives, rental units and social housing) and inhabitants. Scheurer and Newman [21] found that the main motivation to move into Vauban is to acquire a home in outright ownership, with social and ecological motivations on a secondary level. This suggests that – despite the importance of social and ecological issues – who lives there is someone beyond the typical inhabitant of sustainable communities and therefore provides an opportunity to move forward desirable living practices at higher level into a wider audience.

Founded in 1997, the Genova community is the largest project in Vauban with apartments for rent [22]. The community acts as a registered association according to the German Cooperative Societies Act [23], which defines the governance structure consisting of three main governing bodies made up of community members: executive board, supervisory board and general assembly. The type of tenure provides secure, long-term and affordable housing to the tenants in exchange of an initial investment in form of a share [24]. In line with the basic premises of the Vauban project, key issues of the community design include self-governed and democratic organization as well as participatory building's design with strong emphasis on social and ecological aspects. In 2020, the community comprised 111 adults – 88 of them younger than 60 years – and 25 children, and reported 493 shareholders in 2021. The community has 73 living units in total, 24 of which are owner-occupied apartments and 49 for rent. The project occurred in two stages. The first stage included two two four-storey buildings with 36 units, guestroom and common room. The second stage was built on neighbouring land and included two four-storey buildings with 37 apartments, guestroom, common room and three retail stores [25]. In both locations an elevator provides barrier-free access to apartments and verandas. Ecological infrastructure includes car-free households, energy efficient buildings constructed with non-toxic materials, solar water heaters, PV modules, and rainwater cisterns for use in the gardens. Shared facilities include bike shelters, laundry room, roof terraces and green areas in addition to guestroom and common room. It is worth pointing out that the two settings operate as one single unit. That means that inhabitants of one setting share equal rights and responsibilities with inhabitants of other setting. Inhabitants also have open access to facilities within the neighbourhood (e.g. playgrounds) and natural areas outside the neighbourhood (e.g. forest).

3.2 Research design and data collection

Genova is in the centre of a broader study on wellbeing. In the first part of the study, the authors undertook a journey across the city of Hamburg (HH), in Germany (present place of residence of both authors) in order to identify communities where sustainable wellbeing practices were evident. The Saarlandstrasse community in HH was the first setting included in the study. Several interviews with members of the community board helped researchers to sharpen the research design and related survey, which was later applied in the different settings included in the study, including Genova. Reasons for the selection of Genova were straightforward: performance of a wide range of sustainable wellbeing-related activities in



everyday life and compliance with CPRs' definition. Furthermore, one of the authors held the status of community member at the time of the study, facilitating data collection and providing valuable insights for data interpretation afterwards.

To understand conditions for the successful production of sustainable wellbeing we opted for a mixed methods approach, which allows more cohesive reasoning on the studied issues [26]. Survey, interview, and observational data were collected between February and November 2022. After the objectives were presented at the assembly, all community members received an invitation to complete the (online or printed) survey via the community board, with a request to submit one survey per household. 37 of 73 potential respondents answered the survey (rate of response 51%). From these, 19 (51%) are male, 29 (78%) are aged between 45 and 64 years, 24 (65%) have a university degree, 21 (57%) are in active employment, 26 (70%) are tenants, and 26 (70%) have been living in the community for over 20 years.

The survey was designed to get punctual information on the three main axis of the research: wellbeing, cooperation, and governance. Section 1 – Wellbeing (19 items) explores the participation on sustainable wellbeing-related activities and places where they are engaged. Physical wellbeing looked at health via the extent of engagement in sport activities, emotional wellbeing was evaluated in terms of opportunities for relaxation, while social wellbeing scouted strictly social contacts (emotional wellbeing implicit). Section 2 – Cooperation (12 items) identifies forms of cooperation necessary to ensure proper functioning of the shared spaces and facilities supporting the different forms of wellbeing-related activities. Section 3 – Governance (30 items) explores the degree to which CPR's governance principles are present within the community. Scales used in previous studies were used and/or supported the development of our own questions [27]–[30]. Most of the questions use a five-point (from 'strongly agree' to 'strongly disagree') and six-point (from 'every day' to 'never') Likert scale.

Text questions investigated further the relationship between spaces, wellbeing and cooperation (e.g. What is your favourite group activity and where do you practice it? Did you participate in the creation and/or maintenance of the common facilities? How?). The answers were classified on the basis of wellbeing and cooperation activities performed in shared spaces. The main objective of the analysis was to reconstruct local dynamics in order to identify key shared spaces hosting sustainable wellbeing-related activities as well as necessary cooperation activities to keep those spaces running. The data gathered was used to create a graphical report that is presented in the following section.

Subsequent to the completion of the survey, several (in situ and online) semi-structured interviews (1.5–3 hours) were conducted with an initiator of the project and current member of the supervisory board. Interviews provided background information about the earliest days of the community, but most of all, those talks helped authors to understand the complex internal governance system and its great influence on individual cooperative behaviour. Document information and observations in situ supported participant's accounts. Observations in situ were particularly useful to evaluate the 'urban commons' in terms of quality of shared spaces and common facilities. Participant observation took place in the form of attending meetings dealing with the founding of outsourced future communities.

4 ANALYSIS

We perform the analysis in three steps. First, we give insights for project success by showing evidence of a wide range of sustainable wellbeing-related activities performed on a daily basis. In parallel, we shed light on the spaces where those activities are engaged. Second, we identify forms of cooperation supporting success. Third, we examine to what extent the CPR



principles are in place. While the first two sections are mainly of a descriptive nature, the main goal of the third section is to understand the relevance of the governance framework towards success.

4.1 Shared space and sustainable wellbeing

When asking respondents about their favourite spaces within the setting and reasons for it we found out that the main reason for using a space is to perform sustainable wellbeing-related activities. The roof terrace hosts most of the emotional wellbeing-related activities as enjoying the sun and view, or feel free and relaxed. The common room is the place to meet people. It hosts a wide range of planned and spontaneous social-wellbeing related activities as celebrations (Easter, birthdays, breakfast, new year's drinks), talks, meetings with other seniors, English conversations or assemblies. The green area seems to be a particularly flexible space, providing opportunities for a wide variety of emotional wellbeing-related activities as enjoying the beauty of nature and quietness but also for social wellbeing-related activities like small talks, celebrating or playing with children. The 'outside the community' is the favourite place to perform both individual and group physical wellbeing-related activities. Here, 34 of 37 respondents feel healthy and use the surrounding forests, streams, hills, vineyards, meadows, and green communal spaces for hiking, biking, singing or doing yoga. For an overview on the most-liked spaces for people and related sustainable wellbeing activities, see Table 1. The table includes a graphical report of the results that is as close as possible to reality, highlighting in black the most popular wellbeing-related activities and the places where they are engaged. Physical wellbeing-related activities are performed outside the setting and therefore are not included in the table.

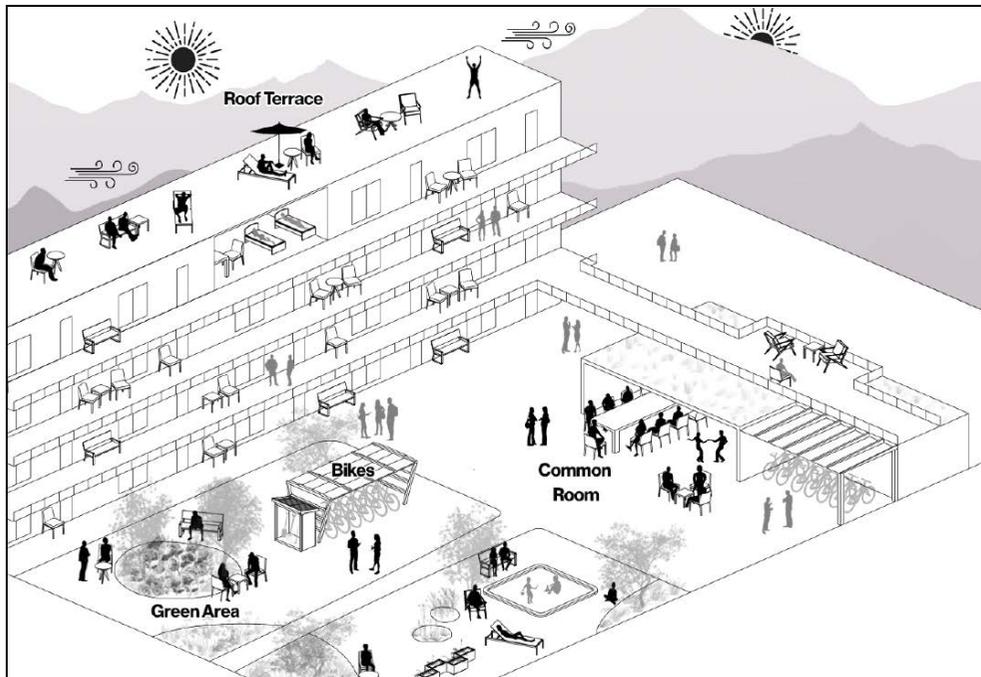
When asking about preferred group activities and places where they take place, the green area is the most favourite location to perform group social activities, placing the common room in the second position for the same purpose. The reason for this is that gardening was pointed out as the most beloved social group activity. Considerably fewer people mentioned 'other' spaces – such as apartments – as favourite locations for the performance of activities like eating, partying, celebrating, listening to music or playing board games. Half of the residents participate in activities within the community at least a couple of times a year, but almost never in regular group activities as choir or gymnastics, suggesting a distance with the group when it comes to private regular activities.

With regard to face-to-face conversations, the access verandas – which are full of chairs, benches, small tables and plants – are by far the most popular place for having talks with neighbours for more than 5 minutes. It is worth pointing out that only two participants reported the verandas as the most-liked space to meet others, suggesting that unavoidable close proximity in a relaxed environment is the reason behind those spontaneous and relatively long encounters. The courtyard, garden and laundry cellar were used for the same purpose to a lesser extent, followed by the stairs, terraces, street, letterbox, and services in the surroundings.

The residents underlined the opportunities for spontaneous meetings in the green areas, roof terrace, common room and access verandas, loving how easy it is to get together in those places. They also highlighted the great flexibility of use of the spaces. For example, the green area offers opportunities for spontaneous or planned encounters, but also for enjoying the beauty of nature. In the same way, in the four seasons common room can be performed a wide variety of activities that cannot take place in the private small apartment, ranging from spontaneous or planned encounters to accommodation for visitors. It is also there where



Table 1: Shared spaces and sustainable wellbeing. (Source: Drawing by Christopher Fehst under the supervision of the authors.)



Shared space	Activity	Wellbeing		Answers
Roof terrace		Emotional 19	Social 4	23
	To enjoy the sun and sunsets	7		
	To enjoy the view	5		
	To enjoy the feeling of freedom and excitement above the roof tops	4		
	To enjoy tranquillity and relaxation	2		
	To enjoy fresh air	1		
	To enjoy spontaneous meetings		4	
Green areas		Emotional 15	Social 8	23
	To enjoy the beauty of nature	4		
	To enjoy the peace and quiet	3		
	To enjoy the sun	3		
	To enjoy the shadow of the trees	2		
	To feel close to nature	2		
	To contemplate Nature and people	1		
	To meet people (talk, play, eat)		8	
Common room		Emotional 1	Social 12	13
	To meet people		7	
	To celebrate		5	
	To feel comfortable	1		

community assemblies take place. The respondents also appreciated the closeness and easy access to the different spaces.

4.2 Shared spaces and cooperation

The previous section showed the relevance of shared spaces in facilitating different forms of sustainable wellbeing. The success of the community project involves the creation, use and maintenance of those spaces in the long term. How do community members support success? To uncover the relationship between spaces and cooperation, we asked the respondents to indicate specific cooperation activities for each facility. We classified the responses in two main categories: incidental and sustained cooperation.

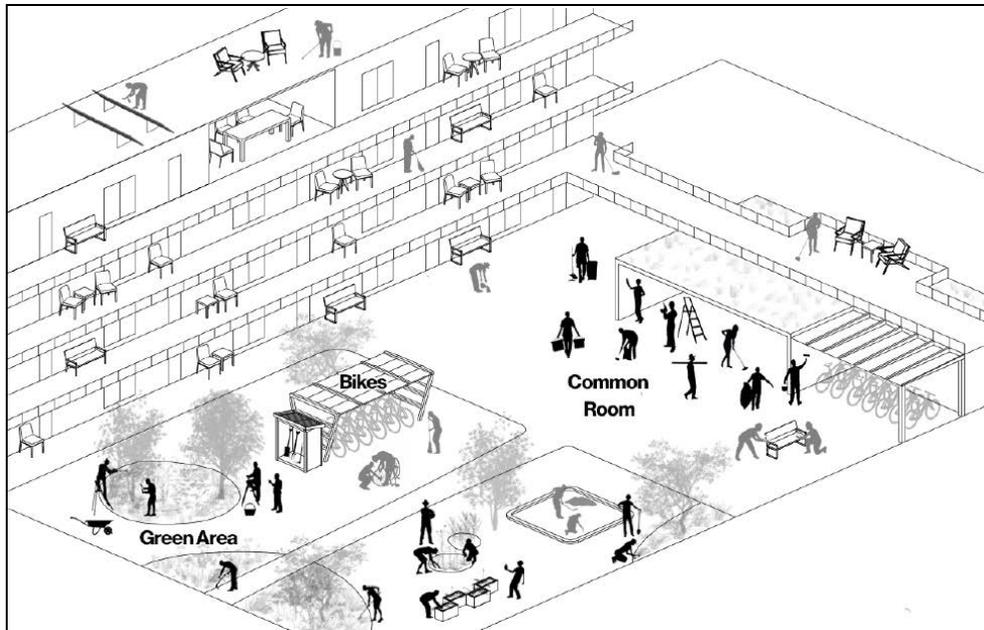
Incidental cooperation refers to activities that end when the goal is achieved, distinguishing between activities aimed at the creation of the different facilities and occasional financial contributions. Most respondents (26 of 37) are project initiators and therefore assisted enormously during the creation process. Activities ranged from collaboration with the city council and professionals for developing the master plan and architectural layout – learning from other communities – to elucidating member's aspirations. An example of occasional financial contribution is the construction of the roof terrace. This space was foreseen from the beginning of the project, but because of lack of funding its construction began 13 years later. A large part of the money needed for its construction was gained by the residents in private, while the cooperative as such contributed only 10% of the total.

Sustained cooperation comprises activities that are necessary to keep all the spaces in good condition and functioning. Here we distinguish among maintenance activities involving labour, and administration tasks. The common room and green areas are by far the spaces where the most maintenance activities take place, followed by playgrounds. Cooperation activities in the common room are mostly cleaning and tidying up but more demanding activities as floor maintenance, renovating or painting are also performed. Gardening activities are necessary to prevent living in jungle as the often warm and rainy weather in Freiburg favours rapid vegetation growth. For that purpose, volunteers take part in the gardening day arranged two times a year. It is noteworthy to mention that the house and yard cleaning together along with the winter services (e.g. shovelling the snow away from public areas) are the only mandatory tasks. The rest of the activities are voluntary. Periodical maintenance activities in the green areas include helping to plant and care trees, mowing the lawn, trimming hedges or harvesting. The playground and sandbox demand continuous sand replacement, places to sit and lie are associated with repair and painting activities, while paved areas, ramps and courts for games require regular cleaning and tidying up. The roof terrace – hosting a wide variety of emotional and social wellbeing-related activities – requires few and easy labours of maintenance such as sweeping and cleaning. Its spartan conditions (open space, floor of timber, and little – but enough – outdoor furniture) might play an important role facilitating its maintenance. Another form of sustained cooperation is the small monthly fee that each member has to provide no matter where she lives in order to keep her cooperative membership. Pooled resources are used for the common good. However, as described above, financial resources for the construction of new facilities might have very different sources.

Regarding administration activities, the common room and the bike shelters demand action. These concern the organization of residents meetings and bike shelter for each resident respectively (only in the section one of the community, where there is not enough



Table 2: Shared spaces and cooperation. (Source: Drawing by Christopher Fehst under the supervision of the authors.)



Shared space	Incidental		Sustained			Answers
	Creation	Financial	Maintenance –labour	Administration	Financial	
Common room*	✓		✓	✓	✓	31
Green areas*	✓		✓		✓	26
Bike shelters	✓		✓	✓	✓	25
Roof terrace	✓	✓	✓		✓	21
Places to sit/lie	✓		✓		✓	19
Paved areas	✓		✓		✓	14
Playgrounds	✓		✓		✓	9
Ramps	✓		✓		✓	8
Courts for ball games	✓		✓		✓	5

*Spaces with the greater number of maintenance-related cooperation activities.

space for the bikes). Table 2 provides an overview of the link between spaces and cooperation, highlighting in black the most popular maintenance activities and the places where they are engaged.

Additionally, the respondents reported cleaning, maintenance and repair work in stairs, hallways, laundry cellar, guestroom and solar energy system. Other forms of cooperation indirectly related with the maintenance of the commons include regular participation in assemblies and posting schedules on the information board.

The analysis shows a wide variety of forms of incidental and sustained forms of cooperation. What is the governance context in which those forms of cooperation emerge and prevail? If the main proposition of this paper holds, the CPR design principles should be in place.

4.3 Governance system

In the following lines, it will be shown that the governance principles are in place and elaborate on how they create a system where social norms (e.g. trust, reciprocity and reputation) and a sense of belonging, fairness, inclusion and cost-effectiveness motivates cooperation for the common good.

Principle 1. The central courtyard consists of a closed structure accessible by cooperative members only. The vast majority of the respondents feels like a member of a group and share common interests. For instance, all of them are interested in living in a car-free community. Clear physical and symbolic boundaries facilitate the emergence of social norms and prevent that outsiders misuse the commons.

Principle 2. Congruent arrangements were made between benefits and duties. For instance, to keep the common room neat and tidy is a personal responsibility, with the consequence that if someone uses it for personal purposes, it has to be cleaned. Another example is the gardening day. Here, the residents do maintenance work voluntarily. In exchange, pooled funds are used to cover food for that day as well as for supplying materials and tools. On top of this, the green areas provide the space for multiple leisure and wellbeing-related activities, which are highly valued by residents. Not by accident most of the residents agreed that is worthy all the effort invested in the setting.

Principle 3. Decisions dealing with the community are generally made in an assembly. The vast majority of participants agreed that there is an opportunity for everybody to shape decisions dealing with common facilities. Tinkering with rules, practices and actors is a common practice to find solutions. For instance, the payment methods to fund the roof terrace were adjusted to individual possibilities for financing: some members donated money, others participated with loans, others contributed with a monthly payment of 20 euros for ten years, and others formed a private civil corporation to get the money. The installation of solar panels developed differently: some community members formed a small company to obtain a bank loan while the assembly confined itself to casting a glance over the project. The solution for everyday situations as garbage issues usually starts with an idea that it is likely to be tested. As a result, the play book is more a thick book that no one knows in detail and just serves to keep a record than an internal regulation.

Principles 4 and 5. The closed structure as well as the relatively small scale of the setting facilitate real-time monitoring, which in turn facilitates the application of gradual sanctions. For instance, a neighbour talked with the parents of young people who celebrated on the roof terrace, leaving rubbish and traces of their party. That call created mutual understanding about the infraction, without major consequences for the offenders. While ‘willing punishers’ (sanctioning others absorbing personal costs) are usually the ones responsible for imposing consequences for similar everyday situations, complex issues will be addressed by one of the governing bodies, reducing the need of individual action. Most of the participants believe that it is very likely that someone is going to react if someone breaks the common rules and more than a half agree in the fact that there might be consequences for offenders.

Principle 6. Assemblies are celebrated in the common room at least once every two months and serve as a mechanism for rapid clarification of the always changing agenda and potential different interpretation of agreements. The issues covered in the assemblies range

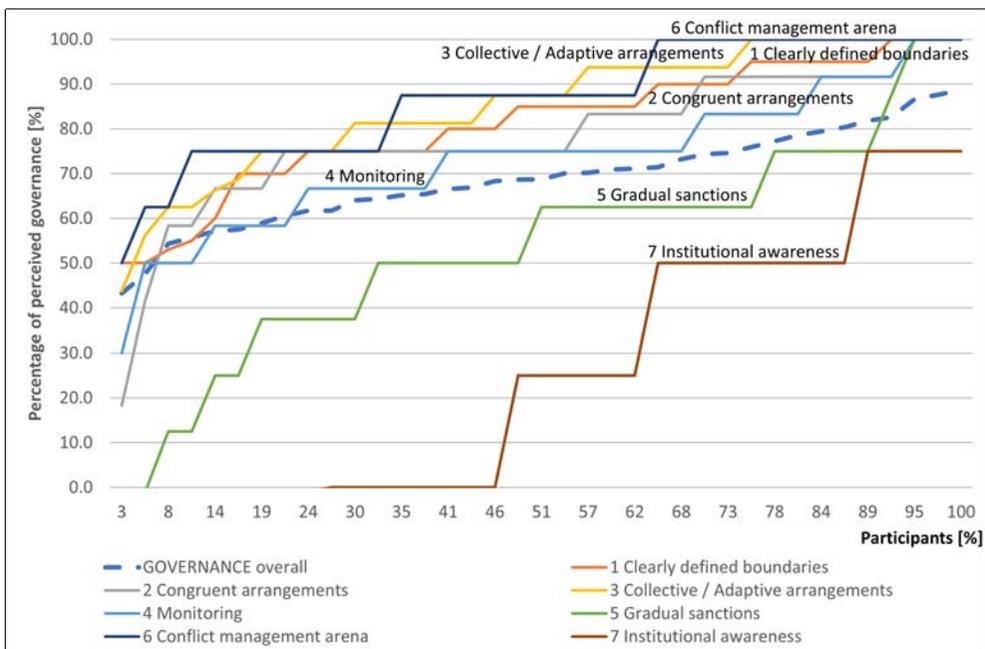


from garbage management to the presentation of new members and reports. All the participants agree on the fact that there is a clear opportunity to address neighbourhood affairs, and most of them said they are addressed.

Principle 7. During the construction phase existed strong cooperation between the city administration and community members. Nowadays there is less cooperation with the local authorities as the work lies with the three main internal governing bodies but the housing cooperative regime enjoys legal recognition in the constitution and thus institutional support.

Principle 8. Coordinated cooperation at the district level occurs between some residents of the Genova community and residents of other communities on their own behalf (e.g. agreements for the use of extensive green areas and the common house). Since the focus of the study is on internal self-governance, we do not address this principle further.

Fig. 1 shows an overview of the perceived enforcement of the first seven principles of governance. The empirical analysis clearly shows that all the principles are in place. The graph, however, shows significant variations between the principles in terms of perceived enforcement. For instance, the principles dealing with group identity and internal organization (principles 1, 2, 3, 4 and 6) are the ones with the highest rates whereas principles 5 (gradual sanctions) and 7 (Institutional awareness) seem to play a less important role. These results should be read in the light of the particular characteristics of each community. A well-functioning system with high levels of self-organization as the Genova community, has little need of sanction. So that could explain that some respondents hesitated (being neutral) when



To assess governance, between 1 and 4 questions for each of the principles were included in the questionnaire. To make the answers to the different principles comparable with each other, the answers were averaged for each participant and the Likert scales were transferred to percentages between 0 (strongly disagree) and 100 (strongly agree). The seven lines show how strongly each participant assessed the application of the corresponding principle while the average of perceived enforcement of all seven principles was calculated for each participant and included as a dotted line.

Figure 1: Governance.



asked about the application of punishments to rule breakers, which is reflected in the apparently low rate of principle 5. Something similar occurs with the principle 7. During the planning and construction phase existed a very strong cooperation between the city administration and the cooperative. Empirical evidence shows, however, that the self-organized systems work very well without the support of external institutions after move in. Not surprisingly, only five respondents agree in the fact that they are supported by the authorities, and for nine it is not applicable.

Our analysis shows evidence for successful production of sustainable wellbeing where the opportunities for joint production – in the form of shared spaces – and rules – in the form of the seven principles of governance play a key role for success. Differences in the rating of the different principles and presumed reasons for that rise the question of how far the rating of the principles would change in case of less well-organized communities where for example external control plays – or should play – a more important role.

5 CONCLUSIONS AND DISCUSSION

In this paper, we explored the conditions under which community members produce and enjoy different forms of sustainable wellbeing on daily basis and in the long-term. We show evidence that the community works as a self-reinforcing system, with three main components: a human created common pool of resources (different forms of wellbeing), cooperation and rules. In the lines that follow we elaborate on each of the three gears, without which the system would not work.

First. The shared space is where the common good is produced and therefore is a key element in the system. The green area, the common room and the roof terrace host most of the social and emotional wellbeing-related activities. Interestingly, each location facilitates specific activities. Spontaneous and individual emotional wellbeing-related activities as viewing, sunbath or relaxation are mainly carried out on the roof terrace, while the common room and green areas host most of the planned group activities. The green areas proved to be a very adaptable space, hosting a great number of both social and emotional wellbeing-related activities performed individually and in groups, whether or not planned. Additionally, the different shared spaces have qualities that are very appreciated by residents as flexibility of use, easy and quick access, and by allowing activities that cannot take place in the private small apartment. In short, the shared space is perceived as a common pool of resources that brings benefits and motivates long-term cooperation for its use.

Second. We distinguish between two types of cooperation. Incidental cooperation ends when the goal is achieved. It includes the project's construction phase – not addressed in detail in this research – and financial contributions. Organizational tasks along with maintenance-related activities count for sustained (long-term) cooperation, what is essential for keeping the social and physical fabric in good shape, mainly through the achievement of results. The vast majority of sustained cooperation activities is carried out in the green area and common room, which house a large number of wellbeing-related activities. The roof terrace, hosting a vast number of emotional wellbeing-related activities – and one of the residents' favourite spaces – resulted in a less effort facility for its use and maintenance. One reason for this may be that it is an open-air facility with little furniture and constructed with easily cleanable material. Any lack of cooperation would have a negative impact on resident's wellbeing. It is therefore very important to keep it running.

Third. The cooperative statute facilitates the enforcement of the principles of governance established by the CPR theory, which in turn foster cooperation. As any other German cooperative, the community has a hybrid tenure, which implies rights that lie in between renting and owning. A sense of common ownership might create immediate incentives for



users to invest in both, the social and physical fabric, thus creating good basis for cooperation. This is particularly true in countries like Germany, where owning one's home is perceived as a form of investment in one's future security [8]. On the top, the enforcement of the governance principles helps to overcome first and second-order cooperation problems, besides supporting the establishment of a system of norms among participants. Whereas most of the principles of governance are covered by the cooperative statute (e.g. monitoring), others depend on the characteristics of the setting (e.g. clearly defined boundaries) and the relationship with third parties (e.g. institutional awareness).

Our analysis enables us to summarize the conditions for success, which might contribute to the success of new sustainable wellbeing-focused housing developments: The housing unit works finally as a self-reinforcing system where the joint production of common goods is the key element of the system i.e. enjoying the produced wellbeing facilitates rule compliance, which in turn encourages further cooperation towards the production of common welfare. A precondition is the existence of common shared spaces where different forms of sustainable wellbeing can be produced. There is a mix of shared spaces fostering cooperation (e.g. a green area that needs to be kept trimmed) with spaces that are easy to maintain at low costs. The housing unit has a limited number of participants so that there is the opportunity for the development of social norms. On the top, the setting displays all governance principles established by the theory.

Before concluding, we would like to draw attention to the limitations of this research as well as needs for further research. First. The study is focused on a single community and therefore the generalizability of the empirical findings is limited. Second, we focus on the spaces where different forms of wellbeing are produced, but we know little about who is doing what and how the different shared spaces influence participant's social, emotional and physical states. In the same way, individual characteristics of participants – especially cultural backgrounds and values orientation – might influence the perceived benefits of a given housing project, thus affecting the willingness to cooperate. The number of participants needs also further attention, developing methods to define the maximum carrying capacity of a hosting system and/or necessary spatial arrangements for success. Despite the limitations, our findings show that the transition towards more sustainable ways of life is possible. For that, we need an arena for joint production – like shared spaces – and an adequate governance framework, like the German statute of housing cooperatives.

To conclude, we would like to highlight the central role of the government for success. The existence of the German housing cooperative model as a legally instituted body results in the emergency of (non) governmental organizations and agencies that support the self-governed housing units by helping to overcome challenges typical of common housing developments. For instance, supporting the group formation, finding the right plot, defining the building design or developing a financial framework among others [31]. Last but not least, sports activities are carried on in the surroundings, highlighting the suitability of big green areas nearby urban centres as key facilitators of physical wellbeing-related activities for a large number of people.

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