Empty Homes as a Green and Just Transition Opportunity

Will Collaborative Law Be the Key?

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Abstract

There are more than 100,000,000 empty homes in the world. The reuse of empty homes stands out as an opportunity to further accelerate and scale up the global green and just transition. They contribute to the need to reduce global greenhouse gas emissions to protect humanity from the worst impacts of global warming. They contribute to the need to offer an adequate emergency stay solution in a world that expects a massive migration due to the worsening of climate impacts. In collaboration with environmental specialists and a technology partner, Empty Homes Collaborative could achieve a more accurate approximation of the global volume of millions of empty homes and further explore the impact they have on societies and the world.

After more than 12 years of work, Empty Homes Collaborative has developed an online MVP platform. Through collaboration with a strong housing technology partner, this pilot can become a robust technical platform with the potential to function as a holistic solution that triggers favorable changes in multiple interconnected systems, including the housing system, the legal system, the economic system, and the ecological system. For this process to develop in a sustainable manner, collaborative law will be a key element.

Introduction

The purpose of this article is to analyze empty homes as a green and just transition opportunity. Collaborative lawyer Maria Jose Anitua is especially grateful to Martin Furlong for his valuable collaboration on sustainability and climate action. The collaboration with Martin has been an extraordinary learning opportunity with excellent results.

Maria Jose has specialized as a lawyer in the real estate sector, mainly in contracts and taxes. At the outset of her Empty Homes Collaborative pilot project, Maria Jose acknowledges that she was unaware of the potential impact it could have. The first piece of information on the volume of empty homes in Europe came from "The Guardian": 11,000,000 in 2019 (The Guardian, 2014). Until Sinnple (Socio environmental impact consulting firm) completed the impact report in June 2022 and translated the tons of CO2 avoided to what trees can absorb in 1 year, the EHC team was not fully aware of the environmental impact, as they were not experts in the field.

Martín has specialized in the nexus between global business and sustainable development. As a sustainable business educator at Tufts Fletcher School, certified conscious business consultant, and lawyer, Martin points out to the importance of making leaders aware of the things we need to do for our own survival as a species. There are things that organizations must do because they are required by law, but the green and just transition leads them to consider other things that they must do because they are the right things for our environmental and social well-being at this point in our history as humanity. Many of these things will be demanded by their key stakeholders. Many of these things will also reflect a win-win logic, creating value for the organization itself and all key stakeholders in the system. In a decade of climate action and inclusive development, it is critical to prioritize those initiatives that have the potential to create positive systemic impact, with speed, scale, and sustainability over time.

This article starts with a reflection on the opportunity to accelerate and scale up climate action through empty homes. They contribute to the need to reduce global greenhouse gas emissions and offer a solution for climate migrants. Second, we address the question of global data awareness on empty homes using relevant sources on the subject. Third, this article also shares field experience gathered by Empty Homes Collaborative (hereinafter, “EHC) in countries ranked highest or lowest in percentage of empty homes according to OECD criteria. Maria Jose's experience with her EHC camel start-up is that everywhere they went, even the empty homes specialists themselves did not know the number of empty homes in their own countries.

The Need to Accelerate and Scale Up Climate Action through Empty Homes

The climate emergency is deepening because the risks of harmful impacts on humanity are growing and the time available for effective action is decreasing. The current trajectory of global warming puts us at risk of crossing systemic tipping points for the first time and increasing the frequency and severity of extreme weather events. This highlights the importance of reducing global greenhouse gas emissions 45% below 2010 levels by 2030. However, the world is not on track to meet this global target and the window of time to achieve it is shrinking. According to the latest edition of the Emissions Gap Report, predicted 2030 greenhouse gas emissions still must fall by 28 per cent for the Paris Agreement 2°C pathway and 42 per cent for the 1.5°C pathway (UNEP, 2023). In this sense, following scientist Johan Rockstrom, we need to be aware that, if we go beyond 2°C, we will enter completely unknown terrain, a planet that does not resemble our planet (UNFCCC, 2022).

Given the complexity of this scenario, the major changes needed to reach net zero require speed and scale. In addition to renewable sources of energy and technological advances needed to achieve this goal, it is necessary to accelerate and scale up solutions that involve using fewer resources more efficiently. Therefore, priority should be given to actions with a positive systemic impact aimed at protecting existing resources, which would expedite the restoration of harmony with the planet's chemistry. Humanity is at an unprecedented moment in history, where we need to rise to the emergency of this situation to create solutions that allow us to prosper within an environmentally safe and socially just space.

In this context of urgent need to reduce greenhouse gas emissions, the reuse of empty homes stands out as an opportunity to further accelerate and scale up the global green and just transition. It has a huge positive impact on the environment because it is dominated by the logic of the circular economy, which preserves existing resources worldwide, drastically reduces emissions and waste, achieves affordable renovations and energy efficiency, among other benefits.

During 2018-2024, Empty Homes Collaborative, a systemic model led by MJA S.L., Arteale Foundation, and Artealen Lagunak Association, carried out a pilot project in Vitoria-Gasteiz. The reuse of 10 empty homes allowed to avoid 419 tons of CO2 which is equivalent to what 39,690 trees can absorb in 1 year. Likewise, 93 tons of waste were avoided (EHC, 2024). The reuse of a considerable number of empty homes would contribute to the imperative need to reinforce effective climate action that can achieve the goals set by the Paris Agreement.

On the other hand, empty homes are also an opportunity to face the challenges of a future where climate becomes a driver of forced displacement of people. That future is already with us. In a recent report, UNICEF acknowledges that “while the link between climate change and displacement is complex, it’s clearer than ever that the climate is shifting patterns of displacement”. Between 2016-2021, there were 43.1 million internal displacements of children linked to weather-related disasters such as floods and storms (UNICEF, 2023).

Although climate migrants are not protected by the Geneva Convention related to the status of refugees (1951), the UN Refugee Agency (UNHCR) observes that climate change affects forcibly displaced people (UNHCR, 2023). In addition, UNHRC estimates that in 2024 the world will have more than 130 million forcibly displaced persons because of conflict, violence, human rights violations, persecution, disasters, and the impacts of climate change (EC, 2024).

In a scenario where future estimates about climate migrants vary widely, it is certain that 3.3 billion - 3.6 billion people live in countries highly vulnerable to climate impacts (WRI, 2022). Therefore, if the world reasonably foresees future mass migration due to the worsening impacts of climate change, we suggest further researching how empty homes become the most efficient, humane, and quickest option to provide emergency stays in times of crisis.

The reuse of empty homes represents an opportunity to support more effective and inclusive climate action. In this way, they contribute to the need to reduce global greenhouse gas emissions to protect humanity from the worst impacts of global warming. They also contribute to the need to offer an adequate solution for present and future climate migrants.

Global Data Awareness on Empty Homes

To set a worldwide context, this article uses global information provided by OECD. It then adds data from the latest EU census (2011) and the most recent U.S. census (2022), among other countries.

During the process, EHC has learned that some countries may not provide and/or update data information.

a) OECD Empty Homes data

The Organization for Economic Cooperation and Development (OECD) is our first source of economic data and analysis. Their purpose is building better policies for better lives. It has 38 member states, most of which are developed economies committed to democratic values: Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, and United States. This organization provides a unique forum and knowledge hub for analyzing data, sharing experiences, sharing best practices, and advising on public policy and international standard setting (OECD, 2024).

Mainly, OECD data are based on national-level statistics, which limits the comparative exercise between countries. First, the organization does not provide data corresponding to the same reference year for all countries. Also, data are not always up to date. Second, some countries rely on periodic housing surveys, while others provide data from the general population and housing census conducted every five or ten years. Third, national definitions do not always allow for adequate comparison between countries. For example, this applies to the distinction between unoccupied dwellings (such as second homes or dwellings meant for seasonal use) and vacant dwellings (which should include only long-term vacant homes). In practice, some countries may include second homes as vacant, which raises vacancy rates (OECD Affordable Housing Database, 2022).

Figure HM1.1.2.a below shows a list of 23 countries for which data are available. Empty housing rates vary from country to country. A group of countries led by Malta, Japan, Cyprus, and Hungary has the highest proportion of vacant dwellings, at more than 12%. In contrast, vacancy rates are lowest in Iceland, Switzerland, and England (UK), with less than 3% (OECD Affordable Housing Database, 2022).

Figure HM 1.1.2.a: Vacant dwellings in selected countries

Percentage of vacant dwellings, out of the total dwelling stock, 2020 or latest year available

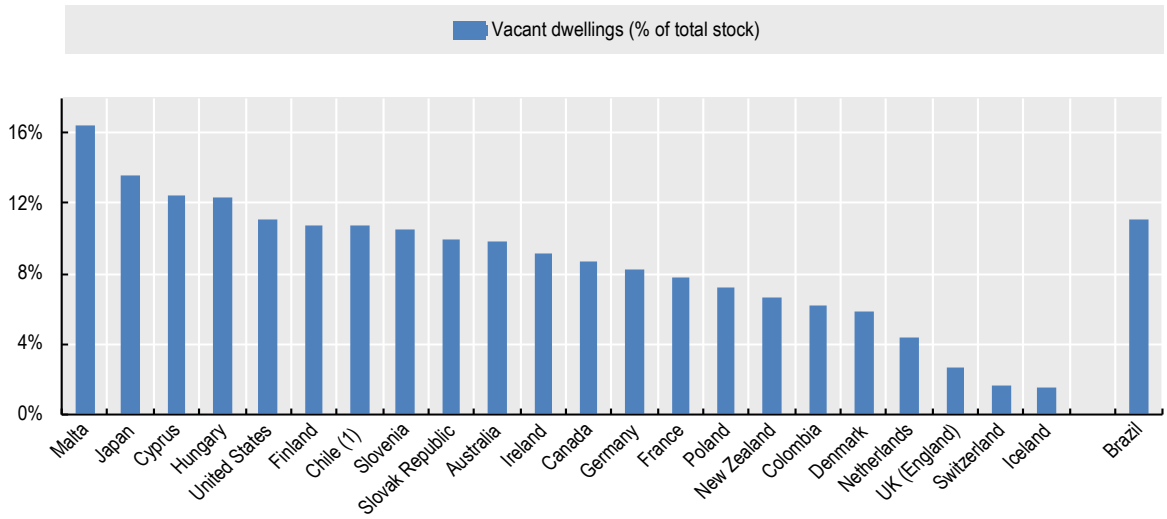
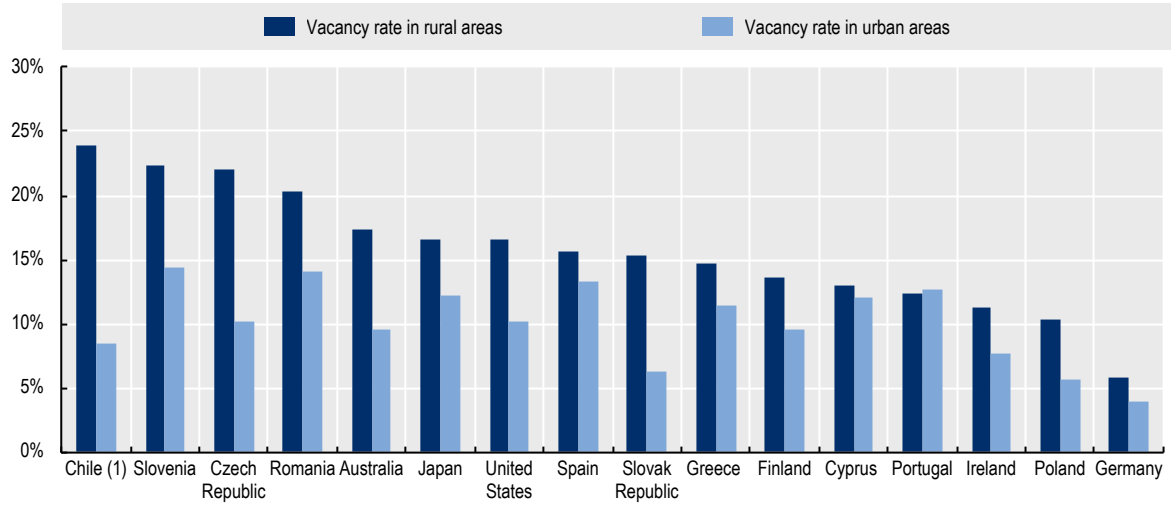


Figure HM1.1.2.b below shows that the proportion of vacant dwellings is higher in rural areas than in urban areas in all countries except Portugal. On the other hand, Chile and the Czech Republic register the largest differences in vacancy rates between rural and urban areas (OECD Affordable Housing Database, 2022).

Figure HM1.1.2.b: Vacant dwellings in urban and rural areas, selected countries
Percentage of vacant dwellings located in urban and rural areas, 2020 or latest year available.



b) EU Empty Homes data

The last census was conducted in 2011. An update has not yet been completed. Table 1 on the Appendix shows that more than 38 million conventional dwellings were unoccupied (i.e., vacant or used as seasonal or secondary residences) in 2011 in Europe (Eurostat, 2011). Table 2 shows the number of vacant dwellings for 12 European countries, excluding seasonal/secondary residences (Eurostat, 2011). Data are not available for Belgium, Germany, Estonia, Ireland, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, The Netherlands, Austria, Poland, Slovenia, Sweden, the United Kingdom, Bulgaria, and Slovakia because no distinction is made in the census between vacant dwellings and secondary/occasional dwellings.

c) US Empty Homes data

The U.S. Census is much more recent, dating back to 2022. Based on Census Bureau data, USAFACTS states that there were approximately 15.1 million vacant homes nationwide in 2022. According to this source, this is approximately 10% of the country's housing inventory (USAFACTS, 2023). Appendix Table 1 (page 17) Gross Vacancy Rates by Estate: 2009 to 2021. United States Census Bureau. December 2022.
https://www.census.gov/content/dam/Census/library/publications/2022/demo/h121-22-01.pdf

d) Empty Homes data in other countries

In Japan, the number of abandoned housing units is increasing rapidly due to the aging population and declining birth rate. A recent article published by the World Economic Forum refers to a study by the Ministry of Internal Affairs and Communications, which notes that the number of empty homes has increased 1.5-fold to about 8.49 million units in 20 years to 2018. This figure would roughly

equate to one out of every eight homes being empty. Likewise, projecting to 2038, the number of empty homes is estimated at 23.03 million units (Tochibayashi and Kutty, 2024).

In Australia, the 2021 census counted 10.85 million private dwellings. On census night, there were 1.04 million unoccupied dwellings (Australian Bureau of Statistics, 2022).

In Mexico, the 2020 Population and Housing Census counts a total of 43.89 million private dwellings. Within this category, there are 6.15 million uninhabited homes, equivalent to 14% (INEGI, 2022).

In relation to India, the Centre for Social and Economic Progress refers to the latest 2011 census, which indicates that 11.09 million urban dwellings were empty. This is equivalent to 12% of the urban residential stock. There may also be vacant housing in rural areas, although this source does not refer to them (Ghandi, Green, and Patranabis, 2021).

Despite the lack of census data, China has a significant number of empty homes. Estimates vary widely. While some sources cite figures around 3 billion empty homes (Loh, 2023), others suggest that a range of 65/80 million is more reasonable (Daniel, 2023).

Given the complexity of data collection, EHC speaks of the existence of more than 100 million empty homes in the world. This figure has the flexibility to exclude second homes or other errors. In addition, EHC's estimate does not consider the number of empty homes that exist in other countries not mentioned in this article. In collaboration with environmental experts, among others, EHC may be able to achieve a more accurate approximation of the global volume of millions of vacant homes.

Empty Homes Collaborative Journey: From Spain to California in 5 Stops

a) Spain

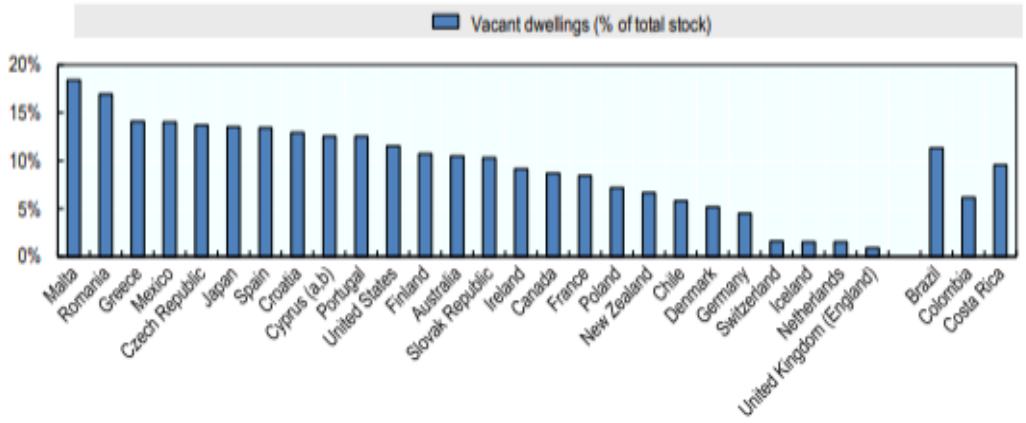
Camel startup EHC began its journey in Spain, a country ranked seventh on the 2018 OECD list. In 2012, the first step was to focus on empty commercial premises perfectly reconverted into housing. The initiative was carried out within the Hiri Space pilot project, which in turn led to the discovery of collaborative law.

After the failure of this first experience in the real estate sector, María José's life as a lawyer changed radically, and she turned to the promotion of collaborative law in many different areas until she returned to the real estate sector, after developing eleven pilot projects. Everything happens for a reason. This new approach is connected to María José's life purpose, linked to housing issues in her own family history. When María José's mother was pregnant with her, she had to face legal problems of eviction. Recovering the house owned by María José's father involved litigation for more than 8 years. During part of that period, her parents had to live as "Scooters" at the home of relatives. This is a long story to tell in a book that María José has already started and does not know when she will be able to finish (Link to Timeline: https://ehcollaborative.org/about/).

b) Malta

OECD's release of data on percentage of vacant dwellings out of the total dwelling stock in 2018 has been a critical piece in understanding EHC's foreign travel itinerary.

Figure HM1.1.2.a: Vacant dwellings in selected countries
Percentage of vacant dwellings out of the total dwelling stock, 2018 or latest year available[1]



The first trip out of Spain took place in 2020. EHC went to Malta, the champion of empty homes according to Figure HM1.1.2.a (2018). For Maria Jose, it was painfully obvious how many empty homes there were. However, this reality was not so obvious to the people of Malta and Gozo.

Maria Jose spent a total of one and a half months (15 days in Malta and one month in Gozo), talking to teachers to improve her English, and researching about the UK/Scotland with a Scottish teacher and a Maltese teacher, in one-to-one sessions. For her, it has been an amazing learning experience to see how most of the population she was able to talk to was not aware that Malta was the country with the highest volume of empty homes according to OECD data.

At that time, Pilar Del Amo, a Spanish architect, was collaborating with the project. As Pilar's partner was an architect/engineer from Malta, EHC could understand that the problem of empty housing was cultural. For this reason, the following year it visited the Netherlands. As shown in the graph, they have very few empty dwellings.

c) The Netherlands

The second stop in this journey took place in 2021. It was the Netherlands, second to last on Figure HM1.1.2.a (2018). Prior to the trip, EHC established contacts with the intention of collaborating with experts in the real estate sector and with potential entities interested in locating vacant housing. As was the case in Malta, they were also unaware that there were vacant homes in their country.

In the end, the Netherlands did not turn out to be the right country to scale the project. Thanks to this experience, however, Cristina Arrivas, now part of the EHC team, and Joris Hoekstra international comparative housing researcher (TU Delft University) , are collaborating with EHC . Moreover, the learning from this experience in the Netherlands has been very important, both professionally and personally.

d) Finland

The trip to Finland in 2022 represented a significant experience for EHC. In a context where the war in Ukraine was in full swing, EHC already had experience with Ukrainian refugees. For the vision of the project, it was a great opportunity to help some of those who had taken refuge in Poland (more than 1,000,000 in that year).

With the help of Santiago Barrueco, director of internationalization at the Alava Chamber of Commerce at the time, EHC held a video conference with a parliamentarian after which they received a very positive email about the project. As a result, Maria Jose received an invitation to meet with her when she was in Helsinki.

Finland was among the priorities since 2020. Thanks to Robert DeRooy, a South African lawyer specializing in comic book contracts, EHC did extensive research on the Y foundation and the wonderful public-private partnerships they had worked on to provide housing for the homeless.

Although housing specialists were contacted, EHC found that they were completely unaware that they had such a high volume of vacant housing in proportion to their population. Often, they said it would be the small cabins that functioned as second homes. Fortunately, a study by Satu Huuhka of the University of Tampere (2018) clearly explained that this was not the case. She gave us the contact of Kimmo Rönkä (Rönka Experience), with whom there was an extraordinary connection, becoming one of the strategic partners.

It was exciting to discover Rönka's website, aligned with EHC's vision: “What does the city of the future look like? How do we live, work & play in the future? We have heard warnings about the climate crisis, but we have continued like before, business-as-usual. In the 2020s, change is mandatory. After a priceless lesson from a global pandemic, we now need to both reset cities as well as set new defaults for living in order to save our planet for future generations” (Rönkä Experience, 2024).

María José perfectly remembers the phrase Kimmo said when they first met. He wanted the future generations remember our generation as a hero generation (instead of the looser generation.). She started calling him "my hero". In fact, Kimmo did everything he could to help EHC. He even opened the door to the Y-Foundation, where EHC had a wonderful meeting with the new general director. For cultural reasons, explained in the U. Tampere’s report, Finland did not turn out to be the right country to expand the project, although the lessons learned were very profound, substantially improving the technological aspect.

The new digital platform, developed with the help of the Basque Government (Ekintzaile) and the administration of the Provincial Council of Alava (Alava Innova) in its application to EHC MVP Minimum Viable Product (Toolkit Orchestral Platform) has been developed in its architecture with Totti Konnola, Finnish expert (If Institute). "Less is More" and "Keep It Simple" are learnings from the camel startup's journey through Finland.

e) Scotland

In July/August 2023, EHC visited Scotland. The latest country in Figure HM1.1.2.a (2018) was the last destination before coming to California (EHC dream since the lockdown in April 2020). The UK, specifically Scotland, is where there is the greatest awareness of all the countries visited of the opportunity provided by empty homes. According to the OECD, it is the country with the lowest number of empty homes per capita.

While in Malta in 2020, EHC began to study the work that had been done in Scotland on empty homes. EHC became aware that they had quite a different vision.

The temptation to collaborate with them arose from the conference they held in 2023. The work done by the Scottish Empty Homes Partnership (SEHP) was clearly encouraging. There was a very pleasant connection with their former CEO and project director, Andy Moseley, with whom EHC hopes to

continue to collaborate in the future. Also, EHC established important connections with Worsdek and with Paul Piwek at the Open University.

Although the experience in Scotland and the UK has been the most collaborative and positive of the project so far, neither was the UK the destination of the EHC project.

f) California

Since 2020 Maria Jose has traveled and worked throughout Europe to leverage the opportunities of empty homes. In the fall 2023, those travels brought her to the United States, finally to California. Her experiences tell her it is an ideal location to develop a scaled EHC pilot. As a first point, the US also has a vast supply of empty homes, although as with many other countries, there is low cultural awareness of the full scope of that resource.

The US culture presents fertile ground for developing a scaled EHC pilot. The US business culture has a growing understanding of the importance of putting relationships on win/win frameworks instead of win/lose frameworks. Movements such as Conscious Capitalism demonstrate this shift.

The US, more importantly for EHC, has one of the larger global supplies of another important resource for EHC, Collaborative Lawyers. Collaborative Law is a process first created by lawyers in Minnesota (starting in the 1990s) to help families going through divorce transform their conflicts. The transformation discards the traditional frame for conflict as an exercise where people work against each other to divide scarce resources. Instead, participants approach conflict as an opportunity to work together to overcome a shared challenge. Maria Jose's experience has taught her that conflicts inevitably arise between owners and renters of homes, and she knew it would not be helpful for those conflicts to follow normal patterns.

Early on, Maria Jose recognized the need to transform the conflicts that would inevitably arise between owners and refugee users in empty homes projects. Through both her extensive professional experience, and her family history, she learned firsthand that the default conflict resolution system (law and courts), forces parties into the traditional us versus them framework. In connection with an early project repurposing vacant commercial real estate, Maria Jose learned about Collaborative Law and saw its potential to transform business conflicts. When Maria Jose began working with empty homes, she knew Collaborative Law would be a key part of creating a sustainable empty homes project.

A collaborative relationship is critical when conflict and tension arise between the parties. EHC has learned from Kilmann Diagnostics, a recognized leader in the field of conflict management and systemic change. This learning is a crucial part of EHC's work.

EHC employs a unique, custom-created tool to assist owners of empty homes, and those refugees with urgent need for housing, to quickly create meaningful connections that lead to collaborative relationships. EHC calls this tool a Conscious Collaborative Agreement, or CCA for short. A CCA is a unique legal agreement that includes not only business terms, but also agreements about how the participants will work together, especially as they manage unexpected changes and disagreements. Participants explore and share their personal values along with personal needs and constraints as they create their CCA. Using the Thomas Kilmann Instrument, participants learn more about their personal reactions to conflict which helps them manage conflict better. These exercises lead them to know themselves and each other better. This deeper knowledge helps them build and maintain the most valuable resource in any relationship - trust. With that level of trust, participants create specific agreements about how they will manage their conflicts collaboratively, creating their own private justice system.

CCAs also differ from traditional legal agreements in that they value simplicity in form. They incorporate cutting-edge practices using plain language and graphic elements in contract design. The online game the value of values as compass is key in this CAAs. Zinquo and Simon Doland are strategic partners in EHC process in the Toolkit Orchestra Platform. Most legal contracts are primarily written for judges to read. CCAs have a different audience, they are created to be understood by those who sign them.

EHC successfully employs CCAs to create agreements governing home rentals in their pilot program in Vitoria-Gasteiz. Since 2018, the pilot facilitated the reuse of 10 empty homes and housed 40 people.

The CCA process has evolved since 2021 to an online version. Maria Jose understands this evolution is necessary to harness the capacity of the Empty Homes Resource and unlock all the benefits it can have for people and the planet. EHC has created its MVP online platform and recognizes the potential of a robust technical platform to be a holistic solution that will spark change in multiple interconnected systems including the housing system, the legal system, the economic system, and the ecological system.

Bringing that robust platform to life requires a collaboration between EHC and a housing technology partner. EHC's ideal partners would actively co-work to create better systems in their businesses and their communities and are more interested in long-term impact than short-term profit.

ACC | CCA
ACUERDO AGREEMENT

Conclusion

The time available to humanity to effectively manage the climate emergency is shrinking.

We live in an era where, as Kelly Sims Gallagher notes, "every ton of emissions that is avoided counts in constraining rising temperatures" (Gallaguer, 2024). The only way to reach net zero by 2050 is a rapid, significant, and steady reduction in emissions. This would avoid breaching the 2-degree Celsius limit and suffering the worst impacts of climate change.

We also live in an era where the young generation is increasingly demanding massive and effective climate action. According to a study conducted in 10 countries and published in The Lancet, about 70% of people aged 16 to 25 are extremely worried or very worried about the climate (WEF, 2022). There is no room for failure. The current trajectory will lead to a greenhouse planet in just 3 generations (Rockström, 2020).

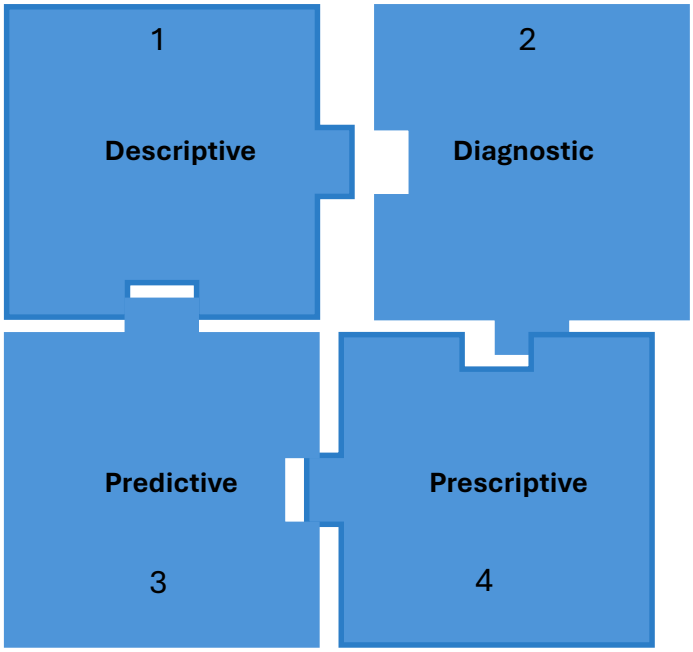
Empty homes represent an opportunity to support more effective and inclusive climate action. The reuse of a significant number of empty homes worldwide has the potential to strengthen the speed and scale of the collaborative action the world now needs. In this article, we also suggest further researching how empty homes become the most efficient, humane, and quickest emergency stay solution in a world that expects a massive migration due to the worsening of climate impacts.

EHC speaks of the existence of more than 100 million empty homes in the world. OECD data provide the possibility of comparing the percentage of empty houses in different countries and their distribution in rural or urban areas. However, there is no precise indication of the total volume of empty houses in the world. To approach this goal, EHC has compiled information from censuses and other more recent sources: European Union Census 2011 (more than 38 million unoccupied conventional dwellings); U.S. Census 2022 (15.1 million vacant homes); Japan Ministry of Internal Affairs and Communications Study (8.49 million empty homes); Australia Census 2021 (1.04 million unoccupied dwellings); Mexico Census 2020 (6.15 million uninhabited homes); Center for Social and Economic Progress Study for India (11.09 million empty homes); and Private Sources on China (65 million empty homes, as the lowest estimate). EHC's estimate does not consider the number of empty homes that exist in other countries not mentioned in this article. In collaboration with environmental experts, among others, EHC could achieve a more accurate approximation of the global volume of millions of empty homes and further explore the impact they have on societies and the world.

From Spain to California, Maria Jose's experience with her EHC camel start-up is that everywhere they went, even the empty homes specialists themselves did not know the number of empty homes in their own countries. California represents an opportunity to develop a pilot EHC project at scale. For this process to develop in a sustainable manner, collaborative law will be a key element. Conscious Collaborative Agreements will help build and maintain the most valuable resource in any relationship - trust. With these levels of trust, participants will be able to create specific agreements to manage their conflicts collaboratively. EHC having already created its online MVP platform, recognizes the potential that a robust technical platform would have to function as a holistic solution that triggers favorable changes in multiple interconnected systems, including the housing system, the legal system, the economic system, and the ecological system.

In the next steps of working with data, EHC recognizes the importance of data being accurate, available, and protected in accordance with security and privacy requirements. At the same time, this is an objective that guides EHC's project as a value compass. After more than 12 years of work, EHC has collected a quantitative amount of data. The next step will be to transform and enrich the information with EHC subject matter expertise based on its contrasted experience, converting it to qualitative data that can be further rely and contribute towards EHC mission, capitalizing on state-of-the-art techniques on the field of Artificial Intelligence. Fortunately, EHC has the support of Javier del Campo, partner of the social enterprise MJA S.L. and member of the team. After more than 5 years working in Data and Tech innovation for a multinational company, Javier has recently further specialized as a data scientist. His help is being key to avoid making many of the traditional mistakes that companies make when they start to delve into Data Mining.

For EHC, the four levels of analytics framework serve as a guide in this area. According to Jordan Morrow, "we have seen that descriptive analytics is describing what happened in the past, diagnostic analytics is finding out why something happened, predictive analytics is predicting the future, and prescriptive analytics is allowing the machines to help us know what to do" (Morrow, 2021).



Source: Own elaboration based on the four levels of analytics puzzle (Morrow, 2021)

Last, the global green and just transition is a unique invitation to improve our development system, avoiding the problems of the past and placing life and environmental/social well-being at the center. In our view, this transition has strong ties to the conscious capitalism movement, being a significant part of our evolutionary journey as humanity. Conscious capitalism believes that businesses and organizations can be a force for good in the world. To achieve a more conscious business ecosystem, it proposes a set of core principles: 1) Evolutionary Purpose, 2) Stakeholder Interdependence, 3) Responsible Culture, 4) Caring Leadership, and 5) Systemic Value Creation (Sisodia, Henry, & Eckschmidt, 2018).

Conscious organizations and their stakeholders need to see themselves as a solution to climate change, acting within an environmentally safe and socially just space in which humanity can thrive (Furlong, 2023). In this context, the reuse of empty homes is an opportunity to strengthen conscious capitalism in the world and create positive systemic value for all stakeholders through more effective and inclusive climate action. Empty homes can help reduce emissions and unnecessary waste. Empty homes can help increase the well-being of citizens through more inclusive communities. Everyone matters. Everyone wins.

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Appendix

Table 1 - Unoccupied conventional dwellings in EU countries

Country	Total no. of conventional dwellings	No. of unoccupied conventional dwellings	% of unoccupied conventional dwellings
Greece	6,371,901	2,249,813	35.3%
Croatia	2,246,910	750,352	33.4%
Portugal	5,859,540	1,868,428	31.9%
Malta	223,850	71,080	31.8%
Bulgaria	3,882,810	1,220,416	31.4%
Cyprus	431,059	133,937	31.1%
Spain	25,206,525	7,124,930	28.3%
Italy	31,208,161	7,072,984	22.7%
Latvia	1,018,532	210,721	20.7%
Slovenia	844,656	174,529	20.7%
Austria	4,441,408	796,450	17.9%
Ireland	1,994,968	345,856	17.3%
Sweden	4,824,227	822,222	17.0%
France	33,543,942	5,630,895	16.8%
Romania	8,722,398	1,427,410	16.4%
Lithuania	1,374,233	198,257	14.4%
Estonia	649,746	93,442	14.4%
Belgium	5,308,946	745,295	14.0%
Czech Rep.	4,756,572	651,937	13.7%
Denmark	2,873,365	364,515	12.7%
Hungary	4,390,302	477,873	10.9%
Slovakia	1,941,176	196,466	10.1%
Finland	2,807,505	270,308	9.6%
Germany	40,563,313	3,643,838	9.0%
Luxembourg	222,946	16,078	7.2%
Netherlands	7,459,694	520,207	7.0%
UK	27,469,425	1,081,060	3.9%
Poland	12,965,598	323,682	2.5%

Source: Eurostat Census Hub, Census 2011.

Table 2 - Number of Vacant Dwellings as a Proportion of Conventional Dwellings

COUNTRY	Vacant dwellings	% vacant dwellings
Bulgaria	1,220,416	6,3
Czech Republic	482,469	10,1
Denmark	152,154	5,3
Greece	897,968	14,1
France	2,455,233	7,3
Ireland	275,339	13,8
Croatia	416,343	18,5
Cyprus	55,267	12,8
Malta	41,232	18,4
Portugal	735,128	12,5
Romania	547,194	6,3
Slovakia	196,466	10,1
Finland	247,475	8,8
Luxembourg	14,079	6,3

Source: Compiled by Arteale based on data from Eurostat Census Hub, census 2011. Data are not available for Belgium, Germany, Estonia, Ireland, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, The Netherlands, Austria, Poland, Slovenia, Sweden, the United Kingdom, Bulgaria, and Slovakia because no distinction is made in the census between vacant dwellings and secondary/occasional dwellings.

Table 1.

Gross Vacancy Rates by State: 2009 to 2021

State	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
United States	**14.5**	**14.3**	**14.2**	**13.8**	**13.6**	**13.4**	**12.9**	**12.8**	**12.7**	**12.3**	**12.0**	**10.6**	**10.8**
Alabama	17.5	18.9	21.1	19.6	18.5	17.3	16.3	16.4	16.0	16.6	16.8	15.3	15.5
Alaska	24.9	21.9	22.7	23.3	23.3	22.8	20.9	19.7	20.1	21.4	22.4	20.5	17.9
Arizona	22.4	20.5	19.2	19.5	21.2	19.1	17.4	17.2	17.1	15.4	13.9	11.8	11.9
Arkansas	15.7	14.8	16.0	15.7	16.6	17.0	15.2	14.9	14.9	15.4	15.4	13.7	12.9
California	11.3	11.3	10.1	9.2	9.1	8.7	8.2	7.8	8.3	8.8	8.4	7.0	7.7
Colorado	13.3	11.3	11.7	10.4	10.5	9.7	10.5	10.2	10.8	10.3	9.7	9.4	10.0
Connecticut	9.8	11.1	11.0	10.1	10.7	9.9	10.7	10.9	10.2	10.5	9.3	7.9	7.8
Delaware	20.2	20.3	20.5	19.9	19.2	18.8	18.2	18.4	18.1	15.8	15.3	15.0	14.3
District of Columbia	15.7	15.0	13.6	12.5	11.6	11.6	12.3	11.1	12.0	11.8	10.6	10.4	11.6
Florida	24.9	24.0	23.5	23.8	23.3	22.6	20.7	20.2	20.5	19.9	18.4	16.0	16.3
Georgia	15.9	15.1	14.5	14.2	14.4	13.7	12.9	12.6	11.5	10.9	11.0	9.8	9.8
Hawaii	16.8	17.8	18.4	16.8	17.4	18.0	16.1	17.1	17.5	17.8	16.0	15.0	16.2
Idaho	16.7	17.4	19.4	17.9	16.6	15.7	15.5	14.5	16.4	14.8	13.4	11.0	9.8
Illinois	11.1	11.7	12.2	11.2	10.9	10.7	9.8	9.9	10.1	9.0	9.6	8.4	9.6
Indiana	11.9	12.3	12.6	11.7	11.4	11.4	11.4	11.9	12.5	10.6	9.9	9.7	9.1
Iowa	8.7	9.5	9.8	9.4	9.5	9.6	9.8	9.3	10.1	9.6	9.0	9.5	9.1
Kansas	12.5	12.8	11.7	11.4	12.2	12.5	12.2	12.6	11.8	10.7	11.2	11.2	9.5
Kentucky	12.7	12.9	13.3	12.7	14.0	12.6	13.1	11.6	11.0	11.0	11.3	9.5	10.5
Louisiana	14.0	13.2	11.1	12.9	12.4	12.8	14.0	15.1	14.9	14.7	15.5	13.3	14.3
Maine	22.7	23.7	24.4	23.8	26.6	25.0	22.6	23.6	23.6	24.1	23.6	22.5	22.6
Maryland	12.7	12.7	13.1	12.0	11.1	12.8	11.5	12.9	11.8	10.0	10.8	8.6	7.4
Massachusetts	11.0	11.1	11.8	12.0	11.8	13.2	13.2	11.3	11.0	11.0	9.9	9.4	10.0
Michigan	18.2	17.0	16.3	15.5	15.2	15.0	15.5	15.0	13.6	13.4	13.3	12.8	14.1
Minnesota	12.0	11.9	11.1	10.7	10.5	10.5	11.1	11.0	11.2	9.8	9.6	9.4	11.2
Mississippi	16.4	18.9	19.4	21.8	22.3	21.1	14.9	14.7	14.6	13.6		12.7	13.9
Missouri	13.2	13.3	13.8	14.2	15.3	13.8	12.7	11.9	12.1	12.3	13.2	9.9	9.2
Montana	15.3	14.9	15.6	16.1	14.7	15.1	15.7	17.3	16.4	16.6	16.5	14.8	14.2
Nebraska	10.5	10.4	10.1	9.4	9.0	9.7	12.5	15.2	11.3	9.0	8.1	7.9	8.0
Nevada	16.6	16.6	16.0	15.9	16.0	13.8	11.6	11.3	13.0	11.9	10.7	8.2	9.3
New Hampshire	17.8	18.9	19.9	19.9	19.0	18.3	18.4	17.9	17.5	16.4	14.7	13.1	13.8
New Jersey	12.1	12.0	12.2	12.7	12.6	12.5	11.2	11.3	11.6	10.5	10.2	8.3	8.8
New Mexico	15.8	15.2	15.9	17.1	19.4	19.2	17.4	16.4	17.2	16.3	15.0	11.4	12.3
New York	11.5	12.0	12.3	11.5	11.4	11.3	12.2	12.6	12.8	12.6	11.4	11.4	12.3
North Carolina	17.6	16.7	16.3	15.6	15.4	15.4	15.1	15.2	14.8	14.3	15.1	12.8	12.4
North Dakota	14.0	13.4	15.1	14.9	16.1	15.6	17.3	18.8	17.8	15.0	14.4	14.3	14.3
Ohio	12.8	12.7	13.0	12.0	10.5	9.6	10.6	10.1	9.0	8.9	8.9	8.0	8.4
Oklahoma	16.2	16.7	16.0	14.8	14.6	15.1	13.6	13.6	13.1	14.5	14.5	12.9	13.2
Oregon	13.0	12.6	12.0	12.5	12.3	11.3	9.0	8.3	9.5	9.7	9.9	8.1	7.7
Pennsylvania	13.0	12.6	12.8	12.7	13.1	13.3	13.2	13.0	11.9	12.0	11.5	10.3	9.4
Rhode Island	13.5	13.0	14.0	13.4	12.9	14.4	12.7	12.0	11.5	10.3	11.3	9.9	9.5
South Carolina	17.0	17.0	17.5	17.3	16.9	17.9	17.1	16.9	17.3	16.0	16.7	13.7	12.9
South Dakota	11.3	11.7	12.0	11.6	12.1	12.3	11.3	13.3	11.6	11.3	11.0	10.9	11.5
Tennessee	13.4	13.3	12.8	13.1	11.7	12.2	12.6	12.5	12.2	11.9	12.0	9.6	9.9
Texas	12.9	13.2	12.8	12.0	12.0	12.0	11.6	11.5	11.8	11.3	11.9	9.6	9.3
Utah	11.9	11.3	12.1	10.9	10.5	11.8	12.5	13.0	12.5	10.2	8.3	8.0	8.4
Vermont	21.7	21.4	20.2	20.4	22.6	23.0	23.0	22.9	21.6	21.7	21.1	18.9	19.2
Virginia	12.2	12.5	11.8	11.6	11.6	11.4	10.8	11.4	11.0	10.7	11.2	10.4	10.5
Washington	10.2	10.3	10.1	9.7	9.4	9.0	9.0	8.9	8.5	8.7	7.7	6.8	7.6
West Virginia	19.4	21.3	21.7	20.0	19.8	19.2	17.7	17.8	17.3	16.9	15.9	14.4	14.4
Wisconsin	16.4	16.0	15.6	15.0	14.6	13.7	13.3	13.3	12.3	12.2	12.6	11.4	11.4
Wyoming	15.7	14.8	13.6	14.5	15.2	14.0	14.4	14.8	17.7	16.9	14.8	12.9	11.5

Note: The gross vacancy rate is the percentage of the total housing inventory that is vacant. The rate is computed with the formula: (all vacant units/all housing units [occupied + vacant]) * 100. More information on the definitions of the different types of vacant units can be found at <www.census.gov/housing/hvs/files/annual21/ann21def.pdf>. Margins of error for the gross vacancy rate, rental vacancy rate, and the homeowner vacancy rate for each state are published in Table B-3 of the annual statistics, published each year from 2009–2021 and available at <www.census.gov/housing/hvs/index.html>. More information on confidentiality protection, methodology, sampling and nonsampling error, and definitions is available at <www.census.gov/housing/hvs/files/qtr122/source_22q2.pdf>.

Source: U.S. Census Bureau, Current Population Survey/Housing Vacancy Survey, public-use data, 2009–2021, <www.census.gov/housing/hvs/files/annual21/ann21t_5.xlsx>.

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Looking for the human side of law, I started as a lawyer in Fernando Buesa's office, specialized in family law. Although I had the immense luck of having a great teacher, the practice in the courts led me to look for another way to exercise my vocation as a lawyer. After a master's degree in business law at Instituto de Empresas (Madrid), started to work setting up a law firm, Consorcio Amarica, evolved in AyL Bufete Jurídico y Tributario specializing in tax and commercial law in the Real Estate sector during more than 40 years.

Thanks to the collaboration in the pilot project Hiri Space, we have discovered collaborative law and promoted its development through the ADCE that I have chaired from September 2013 to July 2019. I have participated in the development of 12 pilot projects, based on collaborative law, through this Camel startup.

Our positive experience in Vitoria (Spain) with 10 EH, housing 40 people, avoiding 419 CO2 Tones and 93 Solid Waste tones, equivalent to 39.690 trees planted, has brought us to California for developing a scaled global EHC pilot.

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