Sustainable Living Futures Report

Envisioning Future Low-Carbon Lifestyles and Transitioning Instruments Project

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one earth

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About the Project

The 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP) was adopted at the United Nations Conference on Sustainable Development (Rio +20) in 2012 and confirmed the commitment of UN Member States to the realisation of sustainable consumption and production (SCP) as one of the three overarching objectives of and essential requirements for sustainable development. Under the 10YFP, the Sustainable Lifestyles and Education programme seeks to foster the uptake of sustainable lifestyles as the common norm, with the aim of ensuring their positive contribution to addressing global challenges, such as resource efficiency and biodiversity conservation, climate change mitigation and adaptation, poverty eradication and social well-being.

The **Envisioning Future Low-Carbon Lifestyles and Transitioning Instruments Project** under the Sustainable Lifestyles and Education Programme of the 10YFP (hereafter Envisioning Project) was launched in September 2017. Its overarching aim is to understand the development and implementation characteristics of successful policies and instruments which are transformative and can support pathways towards lifestyles within ecological limits in order to inform the future actions of policy makers and advocates. In tandem, the project aims to understand what the resulting lifestyles would look like, and the various future scenarios in which people can live sustainably and happily through an examination of the current literature and the creation of mash-ups.

With the help of our global advisory group, the Institute for Global Environmental Strategies (IGES) and One Earth are examining how the way we live our daily lives – our choices, habits and the context within which we live – have can have a positive effect on our planet, our communities and our wellbeing both now and in the future.

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Summary

Imagining sustainable futures is a powerful catalyst for transformative change and for creating these futures. The challenge is that our current visions and scenarios of sustainable futures are limited in a number of key ways that are getting us stuck at the very moment when we urgently need to take a collective leap toward rapid and deep changes in our ways of living to remain below a 2-degree temperature rise and to create just, wellbeing within ecological limits.

The gaps we have identified in this project are of a fundamental nature. We propose that filling these gaps reveals the cultural and deeply transformative nature of the sustainability challenge.

Imagining futures is important work: we are profoundly influenced in our actions by our ability to think about possible futures. The ability to contemplate futures and deliberate about which futures we want to create is a critical human capacity. It is a particularly capacity in times of uncertainty and change because it enables a collective and political exploration of alternatives and opens up a space in our imaginations to think outside of the box of our current realities. Exploring futures can also build bridges across difference because the future is a realm not yet burdened by current debates and fixed positions. Engaging in imagining futures is a cultural and political act of anticipation, dialogue and taking action.

We are getting stuck in three important ways.

First, dominant mass media images of futures fall into the trap of envisioning dystopic and gloomy images of the future. We are missing more compelling images of possible futures that are not necessarily utopian but provide a powerful sense of the possible.

Second, we are getting stuck because the depictions of sustainable futures are limited. We found four tendencies – the smart city that overly emphasizes technology; the urban and rural green planning that emphasizes natural greening, farming, green buildings and mobility; eco-communities that depict radically alternative ways of living; and trade shows that empahsize future products. Each of these tendencies have some aspects of desirable futures; however, they are still limited in terms of sustainable living imaginaries.

Finally, we are getting stuck because when we do imagine sustainable daily living, we overemphasize environmental impact domains and often the future ways of living for higher income, white, overconsuming populations. There are missing gaps that are fundamental to

achieving the scale of changes that we need. The promise lies in expanding our imaginaries to bring new populations, areas and strategies into focus.

The expanded sustainable living imaginaries are not simply about filling gaps. They are about reorienting toward the transformative potential of this moment in human history. We are not just tweaking environmental impact areas but rethinking our ways of living, wellbeing, and just societies and the economic, social, cultural context which will make sustainable living possible.

The implications of this report for stakeholders and policy-makers is to engage in transformative approaches to imagining sustainable futures, using participatory methods of backcasting and scenario planning, and by the sustainability targets that guide us to living within 1.5 degrees greenhouse gas emissions and One-Planet living.

Introduction: Envisioning Futures

Human beings are blessed with the capacity to think ahead, explore, shape and respond to futures. This could be our greatest asset in the years ahead as we embark on an unprecedented journey to create new alternatives in the ways we live. The next decade requires nothing less than a complete transformation in our societies to stay within our ecological means and well below 2 degree temperature rise while also ensuring wellbeing for all and a just transition. For industrialized countries, ecological footprints need to reduce by 90%. The scale of change boggles the mind – What will our daily lives be like? What will we eat? How will we live, move, play, work, learn, and connect with each other and the Earth? The scientific evidence for this transformative change is clear including in reports by the Intergovernmental Panel on Climate Change, International Resource Panel, the latest biodiversity and ecosystem analysis, and assessment of social inequality.[1] The magnitude of the change is also in many ways unimaginable, yet it is our imagination that is critical to enabling this transition. This report outlines how envisioning sustainable living futures catalyzes hope and creativity and empowers us to take action on the radical solutions that are called for.

Why Futures?

Thinking and engaging with possible futures is often a missing dimension of sustainability discussions. As systems expert Donella Meadows writes, "if we don't know where we want to go, it makes little difference that we make great progress… yet vision is not only missing almost entirely from policy discussions; it is missing from our whole culture."[2] **Futures** are the visions or scenarios of possible alternative pathways for humanity. The **futuring process** brings into focus not just *what* but *who* and *how* we engage our societal capacity for anticipation and novel ways of thinking about alternatives.

There are a number of reasons why futures and the process of 'futuring' is critical at this time:

Futures visioning influences our actions and reframes our perception of the present. Our images of futures influence our present actions and shape our expectations in more profound

[1] IPCC, IRP, Biodiversity, social justice

[2] Meadows, Donella (1994) Envisioning a Sustainable World.Published in Getting Down to Earth, Practical Applications of Ecological Economics, edited by Robert Costanza, Olman Segura and Juan Martinez-Alier. Island Press, Washington DC, 1996 http://donellameadows.org/archives/envisioning-a-sustainable-world/

ways than we acknowledge. We can look back to the 'history of the future'[3] and note the ways in which past futures visions of, for example, car-oriented urban planning fundamentally influenced the design of cities. The visions of the Futurama exhibit designed by General Motors and Norman Bell Geddes and the plans by architect Le Corbusier shape city planning from the early 20th Century to today, with all the resultant social, economic and ecological problems. What are the next visions of future cities that can guide planning, city design and daily living in sustainable ways? The potential of futuring is that it can bring us together to change our stories and, in this way, to change our expectations and to catalyze the co-creation of those futures.

Engaging with futures enable novel thought and get us out of stuck patterns. The challenge of transforming into sustainable societies and everyday lives requires us to think outside the box. This is not a question of tinkering with the existing economic systems but shifting our assumptions that progress is rooted in exponential resource and energy growth. When we "look to the future with eyes tarnished by the present...everything seems huge and insurmountable"[3]; however, when we think together about futures, it is possible to reframe stuck debates and building shared understanding of emerging realities and common interests. "The future is an open space still undetermined and thus less burdened by past differences, grievances and assumptions."[4] Futures enable us to think freely by exploring possibilities.

Futures enable us to act even in times of unprecedented change and uncertainty. The natur of the current challenge requires high-quality futures thinking.[5] As sociologist Jens Beckert presents the concept of "fictional expectations" and notes their key role in enabling action even in times of great uncertainty by creating collectively held images of futures and how they might evolve.[6] In his analysis of capitalist economies, he explores how these predictions become self-fulfilling prophecies by generating the expectation of how markets may evolve even in times of great riks and opportunity.

The futuring process allows us to rehearse possible options and trajectories. Futures thinking is typically linked with forecasting and prediction; however, there are significant limitations in simply projecting current trends into the future. Futures techniques such as scenario-planning enables a richer approach that explores diverse story-lines of what 'could happen' under different conditions. Backcasting techniques explores desirable end-states

[3] Hajer, M. (2017) *The Power of Imagination.* Inaugural Lecture. Utrecht University, The Netherlands.
[4] Boyer, N. and V. Timmer (2012) *Envisioning Sustainable Futures.* In The State of the World 2012: Moving Towards Sustainable Prosperity. Worldwatch Institute, Washington DC, USA.
[5] Candy, S. (2016) Gaming futures literacy: The Thing from the Future. in Riel Miller, Ed. (2017, Forthcoming). Transforming the Future: Anticipation in the 21st Century. Routledge.
[6] Beckert, J. (2016) *Imagined Futures – Fictional Expectations and Capitalist Dynamics*. Cambridge, Mass.

and remain flexible about pathways to get there. In this way, futuring allows us to rehearse these different trajectories and dialogue about their possible implications.

Futuring processes can have democratic value. Futuring is not only the domain of experts but can also be deeply participative in their design. John Robinson notes that sustainability is actually 'procedural sustainability' in which "sustainability can ue usefully thought of…as the emergent property of a conversation about desired futures that is informed by some understanding of the ecological, social and economic consequenecs of different courses of action."[7] The opportunity lies in generating participative visioning processes result in concrete forms of anticipation accessible to all publics and likely to enable both formal deliberative processes and informal social conversations on the future at societal level as well as empowerment of citizens in education for responsible living and democracy.

The Problem: A Dystopic Tech Future

The challenge is that our mainstream depictions of the future are frequently dark and dystopic – futures where the deprivation, oppression and terror are the primary focus.

There is growing evidence that fear-based messaging – emphasizing a problem or threat – is not always effective in stimulating behaviour change and can actually lead to defensive avoidance[8] and psychological distancing.[9] On the other hand, there are indications that positive approaches lead to greater engagement and excitement and more successful and longer lasting change.[10] Aspirational stories change the lens through which we view reality, spark imagination, and appeal to the non-rational and emotional aspects of human decision-making.[11] This does not mean that the problem and challenges are ignored. Aspirational approaches only resonate when solutions and vision are presented as a response to the magnitude of the challenge they aim to address and overcome.

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[7] Robinson, J. and R. J. Cole (2015) Theoretical underpinnings of regenerative sustainability. *Building Research & Information*. 43 (2): 133-143.

[8] Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. Health Education & Behavior, 27, 591-615; Van't Riet, Jonathan and Robert A.C. Ruiter (2011) Defensive reactions to health-promoting information: an overview and implications for future research. Health Psychology Review. Vol 7, Aug.

[9] Pike, Cara, Sutton Eaves, Meredith Herr, Amy Huva, David Minkow (2015) The Preparation Frame: A Guide to Building Understanding of Climate Impacts and Engagement in Solutions. Climate Access. March. http://www.climateaccess.org/resource/preparation-frame

[10] Coghlan, Anne T., Hallie Preskill, Tessie Tzavaras Catsambas (2003) An Overview of Appreciative Inquiry in Evaluation. New Direction for Evaluation. No. 100, Winter; Whitney, Diana and Amanda Trosten-Bloom (2010) The Power of Appreciative Inquiry: A Practical Guide to Positive Change. Berrett-Koehler Publishers San Francisco, CA.

[11] Korten, David (2015) Change the Story, Change the Future: A Living Economy for a Living Earth. Berrett-Koehler Publishers Inc.

The Opportunity: Sustainable Living Futures

There is power in clearly articulating what gets better with sustainable, low-carbon futures[12] and in describing futures in a way that presents a compelling vision of less material ways of meeting needs and aspirations.[13]

> *Where in the past, we focused on wealth, growth and efficiency; the future will need to be about well-being, quality, and sufficiency. This includes living within limits; shaping a sustainable society (not just a sustainable consumer); addressing the public as citizens, not consumers; addressing production and consumption; and creating the systems that lead to sustainable behaviour . . . yet not everything is about reduction – there are some things that are not near peak or have no limited supply: community, personal autonomy, satisfaction from hones work well done, intergenerational solidarity, cooperation, leisure time, happiness, ingenuity, artistry and beauty.*[14]

This is a critical time to engage in collectively imagining compelling futures in order to manage critical transitions ahead.

While we imagine these futures, we also need to be focused on how these visions reflect the core sustainability foundations including our ecological impact and economic and social imperatives. The following Boxes provide an overview of core sustainability criteria we will need to use to evaluate and create sustainable living futures.

[12] Cara Pike, Sutton Eaves, Meredith Herr, Amy Huva, David Minkow (2015) The Preparation Frame: A Guide to Building Understanding of Climate Impacts and Engagement in Solutions. Climate Access. March. http://www.climateaccess.org/resource/preparation-frame

[13] Jackson, Tim. 2009. Prosperity without Growth—Economics for a Finite Planet. London: Earthscan.

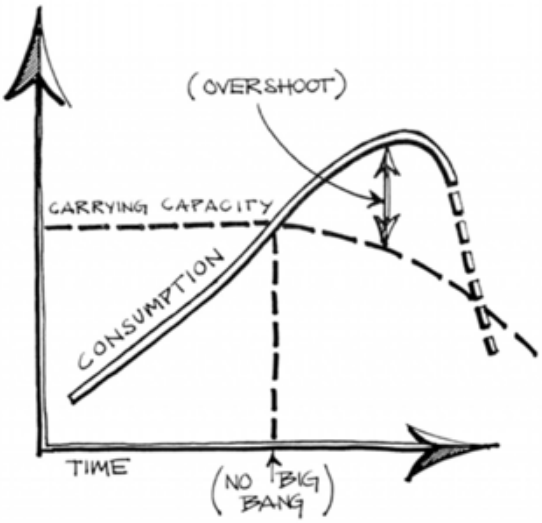
[14] Fedrigo, Doreen and Arnold Tukker (2009) "Blueprint for European Sustainable Consumption and Production: Finding the path of transition to a sustainable society", European Environmental Bureau, May. P. 9.

Box 1: One-Planet Living: Footprint and GHG emissions[15]

The world is in global ecological overshoot, consuming the equivalent of 1.5 times the resources and fossil energy our planet can sustainably produce. This means we are living by depleting essential 'natural capital' — soils, fish stocks, forests, etc. — the very definition of unsustainability. Achieving one-planet living implies an absolute reduction in energy/material use of about 50% even as population and incomes (consumption) increase.[16]

Ecological footprint analysis was created by Dr. William E. Rees in the 1980s and further developed methodologically in the early 1990s with then PhD student, Dr Mathis Wackernagel.[17] Wackernagel went on to found the Global Footprint Network, an invaluable resource for sustainability planners, policy developers and ordinary citizens dedicated to achieving sustainability. Dr. Jennie Moore is leading on footprint analysis in the urban and lifestyle context.

Defining Ecological Footprint — The area of land and marine ecosystems we use to meet our material needs is called an "ecological footprint". More specifically, it is an estimate of the physical area of productive land and water ecosystems that an individual, population or activity requires to produce all the bio-resources it consumes and to absorb the (mostly carbon) waste it generates, using prevailing technology and resource management practices. Think of your personal ecological footprint as an index of your individual demand for nature's goods and services. Sometimes analysts refer to the 'ecological footprint' in its short form as 'eco-footprint', 'footprint' or its acronym, 'EF'.



Our carbon footprint and GHG emissions are only one component of our ecological footprint. Carbon dioxide is the greatest waste product by weight of industrial/high-income countries and is active in the global carbon cycle. Ecological footprint analysis therefore accounts for carbon dioxide emissions in its calculations. While it is possible to estimate the footprints of individual production activities, the EF generally reflects final consumption, i.e., population demand at the consumer level.

Eco-footprint analysis enables us to maintain an ecological balance sheet because it is the currently available, commonly used sustainability indicator that facilitates the comparison of

[15] This box is drawn from United Nations Environment Programme, One Earth (2018). Sustainable Lifestyles: Options and Opportunities. Paris: UN Environment.
[16] Moore, J. and W.E. Rees. Getting to One Planet Living. Chapter 4 in State of the World 2013 – Is Sustainability Still Possible? Washington, DC: Worldwatch Institute.
[17] Wackernagel, Mathis & Rees, William E. (1996)"Our Ecological Footprint: Reducing Human Impact on the Earth", New Society Press.

human demand with nature's supply. The method tracks the human exploitation of, and availability of, six categories of productive ecosystem: cropland, grazing land, fishing grounds, built-up land, forest area and carbon sink. Because trade is global, an individual or country's footprint may include land or sea 'imported' from all over the world. We therefore usually report ecological footprints in **global average hectares (gha)** to reflect the average productivity of each ecosystem type.

Table: An international profile of one-planet living (under 2.0 gha/ca) (Moore 2015)[18]

Component	Consumption (units/ca/year)	Comments
Ecological Footprint	1.45 gha	Ecological footprint values range from 0.67 to 1.93 gha/ca.
Carbon Dioxide Emissions	1.5 tCO_2	Includes total country emissions amortized over the entire population. Emissions range from 0.1 to 5 tCO_2/ca. Approximately 0.2 tCO_2/ca can be attributed to emissions from home heating and electrification.
Food	548 kg Includes: meat 21 kg	The diet is predominantly vegetarian with 40%–60% of daily energy supplied from cereal crops and 4%–7% from meat. Average daily consumption is 2424 calories. Approximately 66% of total income is spent on food, supplemented by subsistence agriculture. With the exceptions of Ecuador and Cuba, malnutrition and food insecurity remain a challenge.
Buildings and Built Area	8 m^2 692 kWh 0.2 toe (Measures the amount of primary energy from all sources consumed by the residential sector (excluding transportation) in unit of tonnes of oil equivalent (toe)) 0.2 tCO_2	Less than half the population (45%) is urban, with approximately 5 people per household. Approximately 70% of the urban population has access to sanitation services and infrastructure.
Consumables and Wastes	0.3 radio 0.2 telephone 0.2 TV 0.02 computer 10 kg paper 247 kg waste	There is no disposable income. Most consumable items are shared both within and among households. Many items are re-purposed and reused.
Transportation	0.02 vehicles 582 VkmT 125 AkmT	There is low to no ownership of motorized passenger vehicles. Approximately 19% of the population uses public transit for commuting purposes. Personal motorized vehicle travel averages 582 km/ca and air travel 125 km/ca.
Water	74 m^3	Only 9% of total water consumption (822 m^3/ca/year) is utilized for domestic purposes.
Human Development	0.544 HDI	With the exceptions of Cuba and Ecuador, the Human Development Index ranges from low (0.430) to medium (0.595).

[18] Moore, J. (2015) Ecological Footprints and Lifestyle Archetypes: Exploring Dimensions of Consumption and the Transformation needed to Achieve Urban Sustainability. *Sustainability*, 7, 4747-4763.

The ability to compare consumer demand to available supply of biocapacity is one of the most important features of EF analysis. For example, a one planet ecological footprint implies an equal division of the total area of Earth's biologically productive land and water among the earth's human population. The Table above identifies a One-Planet lifestyle rounded up to 2.0 gha. In 2014, one-planet footprint was actually 1.8 global hectares per capita and is now closer to 1.7 gha.[19] The problem is that actual demand is the equivalent of 2.8 gha. The difference (65%) is a measure of ecological 'overshoot'; overshoot implies that the growth of the human enterprise is being financed, in part, by the depletion/liquidation of bio-resources essential to long term human survival.

Keep in mind that actions by individuals and community groups are not enough to achieve our goals. Sustainability is a collective problem that requires collective action, particularly by governments for the common good. Governments can, for example, implement consumption and carbon taxes and enable public transportation, efficient building energy use, and zero waste. Individuals can encourage governments to lead the way in creating a society, market and economy that is compatible with nature and the biophysical life-support services essential for human existence.

How are the futures we envision reflecting One-Planet living and reduce our carbon footprint to 1 ton per capita CO2 equivalent by 2050? This is foundational. It is a requirement for sustainable futures and this also requires a transformation in our daily living to meet these targets. Envisioning what this looks like is a critical part of this transformative process.

[19] Global Footprint Network, 2014

Box 2: A Sustainability Filter

Sustainability is more than living within our ecological means. It also is about advancing wellbeing, social connectivity and belonging, social justice, adaptive capacity, and economic systems that align with ecological and social foundations.

What filter can we use to analyze whether future visions and scenarios are compatible with sustainability?

The **Sustainable Development Goals** provide one powerful lens for assessing futures. Futures can be explored in terms of their alignment with these goals and of how they reflect the achievement of each goal's targets and indicators. Do the futures reflect a world in which the SDGs have been achieved? Which goal areas are dominant and which are missing?

In addition, this set of questions can serve as a **sustainability filter** for guiding the assessment of futures in light of the ecological, social and economic sustainability foundations.[20]

[20] Based on the sustainability filter created for One Earth (2015) Local Governments and the Sharing Economy. One Earth, Vancouver, Canada.

Ecology

1. **Living within ecological means:** Does the vision/scenario reflect absolute reductions in energy and materials flows to live within our ecological means?
    a. **Efficiency Gains**: Does the vision/scenario reduce the quantity of material and energy flows?
    b. **Absolute Reductions**: Does the vision/scenario enable absolute reductions in material and energy flows?
    c. **Addresses Rebound**: Does the vision/scenario enable reinvestment to further advance urban sustainability?
2. **Resilience:** Does the vision/scenario reflect resilience and climate adaptation?
    a. **Infrastructure**: Does the vision/scenario support infrastructure development and upgrades adapted to future climate change, emergencies, and unanticipated events?
    b. **Emergency Planning**: Does the vision/scenario advance emergency planning and preparedness?
    c. **Vulnerability**: Does the vision/scenario enable resilience for vulnerable constituencies in the face of emergencies, unanticipated events and climate adaptation?
3. **Natural systems:** Does the vision/scenario reflect the protection and restoration of natural systems?
    a. **Natural Capital**: Does the vision/scenario protect natural systems including air, water, soil, material resources, energy, and food?
    b. **Reduced Toxicity**: Does the vision/scenario reduce levels of toxicity and advance toxics-free solutions?
    c. **Regenerative**: Does the vision/scenario catalyze net positive gains in ecological integrity?

Society

4. **Equity**: Does the vision/scenario reflect the advancement of equity and social inclusion and embracing of diversity? Does it redress social inequality and poverty?
    a. **Access**: Can the vision/scenario be accessed or realised by lower-income persons and used to improve standards of living?
    b. **Equitable Distribution**: Does the vision/scenario contribute to more equitable distribution of economic value?
    c. **Engagement**: Does the vision/scenario build on a foundation of authentic community engagement and continue to diversify the pathways to sustainable lifestyles, creating new partnerships and expanding the use of equity measures and support?

5. **Quality of life**: Does the vision/scenario reflect wellbeing for all and social connectivity?
    a. **Social Connections**: Does the vision/scenario enhance social connectivity?
    b. **Lifestyles**: Does the vision/scenario facilitate healthier, sustainable lifestyles and a higher quality of life within liveable communities?
    c. **Wellbeing**: Does the vision/scenario advance wellbeing for individuals and their communities?

Economy

6. **Prosperous sustainable economies**: Does the vision/scenario reflect the advancement of sustainable economic vitality and diversity within ecological means, a level of self-reliance, and decent jobs and livelihoods?
    a. **Local Economy**: Does the vision/scenario strive toward local and regional self-reliance and take full advantage of, and nurture local and regional food production, economy, power production, and other activities that sustain and support their populations?
    b. **Decent Jobs**: Does the vision/scenario reduce unemployment? Does it provide jobs whose wages and labour practices support decent livelihoods and work-life balances?
    c. **Economic Diversity**: Does the vision/scenario support a diversity of economic actors across the productive and service spaces?

The SDGs and sustainability filter are used to assess the futures collection and promising futures initiatives profiled in this report and project.

The Collection: What is out there?

Analysis of the Collection: Four Tendencies

We engaged in a review of existing sustainable living futures and discovered that the majority of sustainable futures can be broadly categorized in terms of four tendencies:

1. **Smart green techno-living** – with an emphasis on technology, efficiency, gadgets that support daily living, and high consumption lifestyles.
2. **Sustainable urban and rural design** – literal greening through trees, plants and living walls; a focus on green buildings, mobility, energy systems, urban farming and industry clusters; often for the rich and elite, and unclear about daily living.
3. **Eco-communities** – alternative ways of living including alternative housing such as co-housing and earth houses; walking with some bikes and transit; gardens; and social connectivity and sometimes diversity.
4. **Living Green Expos and Trade Show** – a focus on the gadgets and products of daily living rather than practices; emphasizes the separate domain of consumer goods; and focused on individuals rather than collective solutions.

There is value in these tendencies. Each of these approaches have key elements of sustainable futures. Sustainable futures will certainly require the smart technology systems of Smart Cities, the focus on greening and mobility and housing of Smart Urban Planning, the innovative alternative ways of living of eco-communities, and cutting edge sustainable goods and market solutions that are displayed at trade shows. The transformation to sustainable living will need much more than this and sustainable living futures will need to stretch far beyond these current depictions.

Stretching our Imaginaries

Shaping 'ideal' visions and scenarios: 1.5 degree / One-Planet Living

The sustainable living futures is about not only expanding beyond dystopias and moving beyond the four tendencies found above. It is also about ensuring that sustainable living futures depict the scale and scope of change that is required in terms of reducing greenhouse gas emissions and remaining within a One-Planet ecological footprint.

Promising Futures Projects and Resources

There are a number of existing interesting projects and initiatives that are already moving in promising directions in terms of depicting sustainable living futures.

Appendix B provides details on a number of examples of promising sustainable living futures projects:

- African Alternatives
- Pathways 2040
- Green Dependent
- One Planet Living
- Our Cities Our Futures
- WBCSD The Good Life 2.0

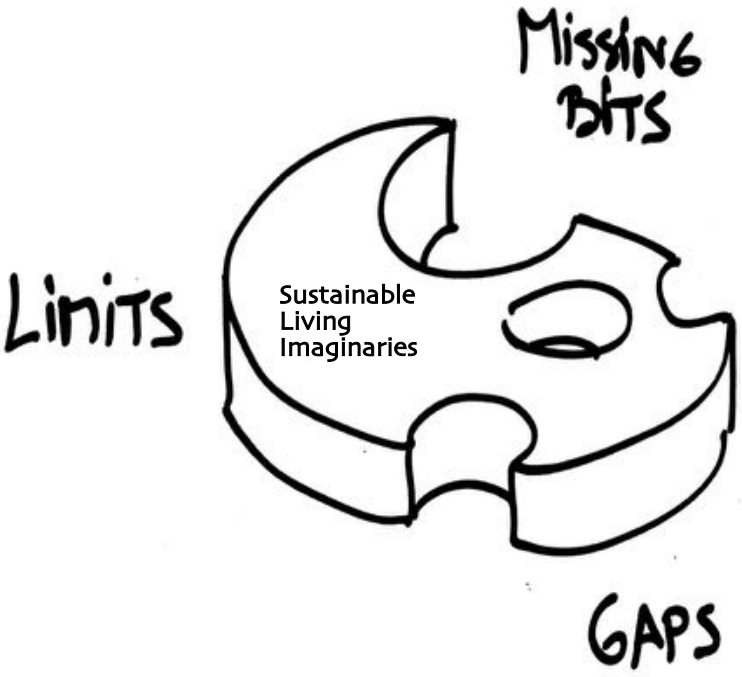
Appendix C lists other futures resources that were gathered during the course of this project and describes why they contain interesting elements worth exploring.

Filling Gaps to Envision Sustainable Living

This is about filling gaps in our sustainability imaginaries informed by what we're learning about sustainable living and guided by our understanding of One-Planet living footprints.

The following are some of the aspects we're learning:

96% of the footprint of goods is upstream in the embodied material and energy from production. We



need to **focus at the top of the waste hierarchy** - and move from recovery and waste management to reducing overall consumption and prevention.[21]

As incomes increase, footprints increase.[22] **Income inequality is growing.**
We assess our lives by comparing our lives with what others have.
How do we rethink 'the good life' with less impact and greater equality? How do we make a just transition to sustainable ways of living?

Over a certain level, wellbeing is not tied to increased material wealth.
Beyond our basic necessities, wellbeing and happiness stem from a positive outlook on life, a sense of freedom, trust, social ties, generosity, health, economic security, and contributing meaningfully to society.[23]

WARNINGS: Communicating and Engaging on Lighter Footprint

What we know doesn't work:[24]

- **Attributing lack of action to a lack of information** – Behaviour change does not result from providing more and different information about the gravity of a problem.
- **Focusing on blame and on negative, guilt-focused messages –** While it's important to recognize the scope of the problem, an overemphasis on the threat can backfire and turn people off. People disengage especially when they don't see how things can be improved or when solutions feel overwhelming and unimaginable.
- **Only using environmental language and imagery -** Other issues such as health, economic security, easing the pace and complexity of life are powerful entry points for engaging people.

[21] BCIT, Jennie Moore and Cora Hallsworth (2017) ecocity Footprint Tool Pilot : City of Vancouver Summary Report. Vancouver.
[22] Marc Lee (2010) By Our Own Emissions: The Distribution of GHGs in BC. Canadian Centre for Policy Alternatives.
[23] World Happiness Report - http://worldhappiness.report/; see also Healthy City Strategy; Vancouver Foundation's Vital Signs Report and Connect and Engage survey and report.
[24] The following insights are based on the work of Climate Outreach including Jamie's Nov 2016 book co-authored with Adam Corner, of Talking Climate: From Research to Practice in Public Engagement. They also draw heavily on One Earth's Dec 2106 co-authored UN Environment report on Fostering and Communicating Sustainable Lifestyles: Principles and Emerging Practices, with key insights from communication expert Cara Pike, Director, Climate Access.

The ways to live sustainably are as diverse as we are!
There is not just one universal way to live a one-planet footprint life.

Our ways of living are dynamic – they are not static.
They change as our aspirations, situation, technology and society evolve.
We also shift through influence from our social groups and peers.[25]

Our footprints arise from the patterns of how we use our time: how we structure and spend our days in work, home and leisure. These patterns occur in particular locations and with associated consumption patterns.[26]

WHY DO PEOPLE CONSUME?[27]

- **To meet basic needs** - e.g. nutrition and subsistence, health, housing, mobility
- **To fulfill social functions/expectations** - e.g. convenience, connectedness, maintaining relationships, traditions.
- **To satisfy personal desires, preferences and tastes** - e.g. leisure, food preferences, consumer goods (electronics or cars).
- **Due to the influence of advertising/marketing** - e.g. creation of new product markets such as pet food and cosmetics, planned obsolescence, or enhanced functionality such as mobile phones that do more than make calls, and
- **Because they have no choice** - e.g., lock-in design of mobility infrastructure favours private car use or urban zoning laws and administrative procedures make urban agriculture difficult.

WARNING: Let's not overemphasize the individual!

Our everyday lives and behaviours are shaped by our context:

1. **Our identity, aspirations, social norms and influence**
2. **Our unconscious habits and practices**

[25] Jackson, T. (2005). Motivating Sustainable Consumption: a review of evidence on consumer behaviour and behavioural change. London: Policy Studies Institute.
[26] Dumitru, Adina & Ricardo García Mira (2017) GLAMURS Green Lifestyles, Alternative Models and Upscaling Regional Sustainability: Final Report. European Commission Research Project.
[27] Akenji, L, H. Chen et al. (2016). A framework for shaping sustainable lifestyles: Determinants and Strategies. United Nations Environment Programme

The societal systems around us – including the physical layout of our neighbourhoods and cities, policies, markets, infrastructure, institutions, legal and financial systems, and our cultural context.

Project Workshop: June 2018 Tokyo – Futures Session

The project workshop took place on July 4th and 5th, 2018 at the Taisho Emperor Memorial Hall in the Kiyosumi Shirakawa Gardens, Tokyo. The workshop was attended by 27 participants including 14 members of the advisory group of Envisioning Project who are sustainability experts from around the world from a diverse range of fields including government, academia, non-governmental organisations, and the private sector. The aims of the workshop included advancing the sustainable living field by enriching our analysis, exploring sustainable living cases, co-creating key messages on sustainable ways of living, and advising the next stage of the project. Two additional aims were to analyze sustainable living futures and to co-develop breifings for the 'mash-ups' and gap-filling visualizations being developed for the project (see below).

Day 2 of the workshop focused on the futures visions and scenarios aspect of the Envisioning Project. The day began with Vanessa Timmer (One Earth) reviewing the key messages on sustainable ways of living developed on Day 1. The purpose of this review was to encourage participants to use these insights to imagine possible future lifestyles and to explore sustainable futures. The day was co-facilitated and co-designed with François Jégou and Christophe Gouache of Strategic Design Scenarios, a sustainability innovation lab who are specialists in scenario building. Interactive exercises with participants were interspersed with a presentation – the Sustainable Living Futures Safari – that presented the analysis of sustainable futures and a range of existing visions of sustainable daily living. The presentation is described below and then the interactive exercises which the participants engaged in throughout the day.

Sustainable Living Futures Safari

Vanessa Timmer (One Earth) presented an overview of the futures field and a tour of the sustainable future lifestyles visions collected by the project to date. She emphasized that imagining is a key part of taking action to advance sustainable living because our futures are

not predetermined but can be shaped together in a creative process. The future is an open space and we can reframe our collective stories in ways that break us out of unsustainable patterns. Vanessa provided examples of visioning methodologies and 'techniques of futuring' such as forecasting, scenarios and backcasting. She provided examples the climate scenarios undertaken by the Intergovernmental Panel on Climate Change and the Mont Fleur scenarios co-created by a diverse stakeholder group in South Africa post-apartheid. Vanessa provided a review of past visions of cities, including highlighting the influence of the 1939 New York Exhibition Futurama in promoting the car-oriented high-rise city that is prevalent today. She summarized the project's analysis of sustainable living futures and the collection partly displayed in the workshop room of futures visions.

François Jégou (SDS) outlined Strategic Design Scenarios past efforts and methodologies. Vanessa then engaged the participants in searching terms 'green future', 'sustainable future', 'sustainable city', and 'smart city'. The project team's findings are that many of the futures currently depicted can be grouped into four tendencies 1) smart green techno-living, 2) sustainable urabn and rural design, 3) eco-communities, and 4) Living Green Expos and Tradeshows. The challenge now is to expand this set of imaginaries to reflect real sustainability understanding and the next level of thinking on sustainable daily life. Vanessa reviewed a number of examples of 'unusual suspects' and sustainable futures images and projects that are more aligned with sustainability insights and the creative potential of co-creating futures.

The workshop participants engaged at their tables in an interactive exercise to envision sustainable futures through a six step process designed and facilitated by François and Christophe (SDS). These steps and their rationale are described below.

#1 Looking for missing bits

Diving into the small bits of everyday life

Sustainability is mostly looked at through the lens of specific domains: food, mobility, energy, housing, etc. however when exploring what sustainable lifestyles may look like, we need to dive into what everyday life is actually composed of. Lifestyles are not ordered and segmented into these domains or areas: it's not about Food but about having dinner out with friends, enjoying a beer at a festival, feasting with your family during a holiday celebraiton, or grabbing some food on the go. And beyond the usual classifiable domains, daily life activities are also about fun and laugh, death and sickness, faith, holidays, leisure, dancing, communicating, learning, etc. so many topics that are not talked much about when thinking about sustainability. The "Bits of Everything" picture set was developed to explore and find the unspoken, the forgotten, the invisible, the intangible aspects of what makes everyday life. The set contains 96 pictures depicting bits of everyday life throughout the world. It built on a photo set developed in partnership with partners in the CIMULACT project. This activity allowed participants to identify and highlight a series of daily living subjects rarely, or not often enough, spoken of.

#2 Building sustainable snapshots

Imagining meaningful snapshots of future lifestyles

Each participant selected a particular 'unrepresented' aspect of sustainable living that is not yet captured in sustainable futures visions. They noted why they thought this subject was underrepresented and the environmental impacts (if any) the subject had. This participant then challenged the rest of the participants at the table to reflect on this same subject: let's imagine variations of how this subject can be approached in terms of sustainability. By each participant providing their own short story in a diverse way - because of the diversity of the present participants – the project benefits from a rich sustainability exploration of each underrepresented subject. The snapshots are meant to stretch the initial chosen subject into different directions. In between 4 to 6 snapshots were developed for each selected "missing bit" for a total of over 40 snapshots. Participants were asked to find a title and come with a short narrative to describe their idea.

#3 Combining snapshots into sustainable life stories

Why build stories?

In order to understand what living sustainably really means and implies on a daily life basis, we need to incorporate sustainable practices into actual life stories. What does it mean to move sustainably, eat sustainably, enjoy life sustainably? If we have that conversation at a generic level, it does not make much sense. We know that biking is more sustainable that driving your own car, or taking the public transportation than driving your own vehicle but what does it mean to move sustainably when you need to go shopping, when you need to rush in the morning to take your kids to school then go to work. What does it mean moving sustainably when you go holiday with your family? Sustainability topics should always, to be

meaningful, be incorporated into people's actual lives. To go beyond what it means to eat sustainably at an abstract level, you need to take in account people's lifestyles and life context. If we want to talk about eating practices, we need to get into Selam's life, then Jorge's life, then Abdul's life... to describe what it means to shift to sustainable eating habits for them, in their life, within their context, sets of values, with the eating options and choices they have, etc. Each table of participants were asked to select a number of the diverse snapshots and combine them into a sustainable life story.

#4 Combining snapshots into sustainable life stories

Examples of personas

The participants teams needed to decide who their life story was about. Who should be living this sustainable life? In order to inspire participants, SDS had prepared a series of personas. They were diverse: youngsters, adults or elders, living to the countryside, small cities or megalopolis, living in Asia, Europe or Africa, and being a fisherman, a tattoo artist, a civil servant, a chef, a farmer, a bank employee, having kids or none, being community centred, family-centred or individualist, being a tech fan, a sports fan, running a healthy life or less healthy diet, being middle class, upper one or lower one, and so on. If we are to imagine sustainable lifestyles, we need to imagine what it means and what it takes for every of one of those people living in very diverse ways.

#5 Building life stories starting with creating personas

What are personas?

Personas are fictional characters created to cover the scope of different user types that might be concerned by our research or solution, or product or service. Since the ESL project has a global dimension, personas were meant to represent a wide diversity of people from different places in the world, different backgrounds, cultures, level of education, wealth, sets of values, etc. Personas that we created during the ESL workshop had an identity (a name), an age, a face, a place where they live, a few biographic details, an occupation, etc. Personas were not meant to be too "average", they were to be unique yet credible characters. Creating personas provides an opportunity to go beyond sociological clichés and/or the classic socio-professional segmentations, etc. The value of creating personas is that you need to translate each sustainable practice into something that is adapted and shaped ad-hoc for that particular person, with these particular needs, and aspirations and ways of living. Amelie, Piotr and Carmen may all eat sustainably in the future but the way they eat and what they will eat will most likely be very different one from the other.

4 stories coming a selection of the Snapshots of the future…

Here below is an example of one of the life stories created by the participant teams. This is a glimpse into Anne's life:

"Anne lives in Shanghai, China, as a neuro-surgeon, she's 32. And she used to be a man named Antonio. Her parents live in the countryside. She has a busy lifestyle, loves shopping, also enjoys fitness and is in love with nature. Finally, she is quite keen on the idea of traveling. Anne works both from home (reducing her commuting) and at the hospital. She only goes to the hospital when she actually needs to operate. Anne does most of her shopping online to avoid taking transport and wasting time. At the age of 38, and with the money and time she saved, she started to become interested in sustainable food. She buys sustainable ingredients and invests time cooking healthy meals. When she turned 40, **she joined an online community to share knowledge and practices on sustainable food** as well as on planting seeds, etc. Professionally, **she also uses online platforms to connect and train peer surgeons through online learning classes**. A couple of years later she became **active at the local level by getting involved in the city sustainable food festival.** When she turned 47, she lost her dad. He was incinerated and buried in **a sustainable cemetery, which basically looks like a flower field, with land art pieces and sculptures** made by people themselves for commemoration of their losses. The cemetery also hosts a veggie garden which brings life and activity into that special place."

#6 Reflecting critically on the sustainable lifestyle future lives through stakeholder role play

During the different groups' presentations of sustainable life stories, other participants were asked to listen to the presentations from a particular stakeholder's perspective.
The different roles were:

- Large businesses
- Small & medium businesses
- National governments
- Academics & educators
- International organisations
- NGO's, civil society
- Youth Groups
- Activists, protest groups
- Faith groups
- Media

Why is it useful to look at sustainable lifestyles through different stakeholders' lenses?
Shifting towards more sustainable lifestyles require both systemic and individual changes. But the world is not going in one direction, many actors in the global system have very different interests, values and visions and many of them do not align with each other. To avoid having a naive and idealistic vision of how things will unfold as we shift towards more sustainable lifestyles, we propose to see that evolution through different stakeholders' perspectives by asking the following:

When listening to the life stories, and from your perspective as [particular stakeholder role], what do you think would happen? How would you react? What would you do? Would you support what is described in that story? Would you be controlling, limiting, fighting against it? Or would you promote and benefit from it? Does it go in your desired direction or against your interests? This reflective and critic activity allowed to explore the tensions that lay behind the transformations that need to be happen in order to implement more sustainable lifestyles.

The futures exercises undertaken in this workshop provide the project with a rich array of possible futures sustainable living subjects and life stories. These inform the outcomes of the project and also direct the development of a few sample 'mash-ups' or 'gap-filling' visions developed by Strategic Design Scenarios to display the 'underrepresented' aspects of sustainable living futures.

Box 3: Gaps in Sustainable Futures Visions

Sustainable living futures visions and scenarios already fill a gap in terms of moving beyond dystopic futures; however, there remain gaps in what is being depicted and in the process of developing these futures. The following are some tendencies and typical gaps.

Typical futures focus sustainable futures tend to focus on…		**Gaps / What is often missing** these are promising areas to expand into…
Who Sustainable Futures often show: • **young**, • **urban**, • **white / Caucasian** (sometimes Asian), • **western / industrialized**, • **middle- and high- income**, • **overconsuming**, • **healthy** people		**Who** Let's expand our imaginaries to include: • **diverse age groups** (children, middle age, elders), • **rural / semi-urban / suburban / nomadic,** • **diverse unique culture and ancestry** (racial diversity, Global South, Eastern Europe, migrants, Indigenous Peoples, marginalized) • **differently abled,** • **low income** (impoverished), • **One-Planet consuming** (those already living One-Planet lives) **and underconsuming,** • **diverse sexual orientation,** • **diverse gender identity or expression,** • **diverse political beliefs** (progressive, conservative), • **diverse marital or family status**
What Sustainable Living Futures often show solutions oriented toward: • **priority ecological impact domains**: housing, mobility, food, consumer goods, and leisure.		**What** Let's expand our imaginaries to include solutions that draw on sustainable living: • **needs and aspirations** – reflecting people's desires as well as their hopes about their lives

		• **time use** – exploring everyday time use including diverse time categories such as leisure time, personal time, committed time and contracted time (work). • **non-consumption areas and practices** – highlighting those fulfilling activities that are mundane and non-consuming. • **nature restoration and connection** -
How Sustainable Living Futures over emphasize the following approaches to social change: • information and education of forecasts by experts • individual action		**How** Let's expand our imaginaries to include sustainable living solutions that draw on the following social change strategies including: • **participatory futuring** that empowers stakeholders to co-create their futures. • embracing **inclusion** that engages diverse stakeholders in futures processes. • **learning** – futures that depict responsiveness and adaptation to changing conditions. • **life transitions and events** – depicting key moments and stages of people's lives • **collective action** – the power of context and of individuals working together

7 Principles for Stretching our Imaginaries[28]

A Framework for Developing and Analyzing Sustainable Living Futures

The following operating principles aim to guide the development and evaluation of sustainable living futures in order to expand our imaginaries and to fill the typical gaps outlined in Box 3.

	**Better** Living	***Focus on aspirations*** Create compelling visions based on stakeholder values. Be clear about the problem but place greater emphasis on how sustainable living choices and solutions lead to better lives.
	**One-Planet** Living	***Ensure depicted futures are within sustainability targets*** Set achievable ecological, social, and economic goals and outline clear milestones for measuring progress along the way. Clarify how futures are contributing in meaningful ways.
	**Holistic** Living	***Embrace the fullness and beauty of ways of living*** Show how people's lives weave across diverse domains in integrated ways and include the mundane, beautiful, non-essential and meaningful aspects beyond consumption.
	**Systemic** Living	***Reflect the systemic nature of sustainable living*** Highlight the underlying drivers, relationships and systemic structures that enable sustainable ways of living. Connect individual actions to larger contexts, collective action, and systems shifts, including policy change.
	**Dynamic** Living	***Depict different time frames, life stages and transitions*** Leverage moments of life stages and transitions such as marriages, birth, moving, retirement, and career changes to shift thinking and guide new patterns of behaviour.
	**Diverse and Inclusive** Living	***Accommodate the diversity in ways of living*** Illustrate the range of sustainable ways of living. Tailor to different stakeholder groups and employ culturally relevant practices.

[28] Source: these principles are adapted from the following report developed by SCORAI, One Earth, Climate Access, Tellus Institute for UN Environment: Fostering and Communicating Sustainable Lifestyles: Principles and Emerging Practices. United Nations Environment Programme - Sustainable Lifestyles, Cities and Industry Branch (UN Environment), 2016.

	**Empowered** Living	**Stakeholder-created participatory futures** Engage in interactive, relevant, and grounded ways. Orient futures around people's needs and wants, build trust, and promote actions linked to a sense of place and local context.

Mash-ups: visualizations that fill gaps

The following visualizations bring together or 'mash-up' different possible elements of ideal Sustainable Living futures – ones that are just, within ecological means and advance wellbeing. The visualizations aim to capture elements that are predominately overlooked and missing in our future imaginaries. Lead designers from Strategic Design Scenarios created these visualizations from active consultation with the project team and Advisory Group.

The visualizations aim to 'fill gaps' in current sustainable living imaginaries and together form a mosaic of possible elements of sustainable daily living. They are inspired by aspects of the futures Collection and discussions within this project.

Based on the analysis above, the visualizations below specifically address the following gap areas that hold great promise in transforming to sustainable ways of living:

- **Simple living:** restoring and celebrating sufficiency and enoughness, a contentedness with less stuff and more of what makes life meaningful: trust, social connections, a sense of contribution, self-efficacy, and health.
- **Ecology**: restoring, conserving and reconnecting with ecological space and corridors and valuing nature and other species.
- **Learning:** supporting life-long learning and capacity building in the skills that are needed for sustainable living, and connecting across generations and locations for diverse insights and skills.
- **Finance and economy:** engaging communities in the investments and resources that enable sustainable living including budgeting and public services;
- **Sustainable social norms:** creating and reinforcing sustainable social norms through traditional practices, faith and mediation processes.
- **Foodways:** making and enjoying meals communally, embracing diverse sustainable food traditions, participating in food production enabled by time and technology.
- **Technology:** orienting technology solutions to advance sustainable living through high- and low-tech support and platforms.
- **Mobility and slow travel:** finding solutions to rural-urban connectivity, using idle mobility infrastructure, and low-carbon travel including for tourism.
- **Time use:** questioning the dominant time use model and exploring alternatives in terms of livelihoods and work-life balance.
- **Leisure:** exploring how we spend our leisure time as we move away from high-consumption leisure activities.

- **Life transitions and life events:** depicting key life events and stages in terms of their sustainability opportunities including retiring, moving, becoming a parent, starting a new career, starting school, weddings, funerals and immigration.
- **Sustainable population:** Supporting girls education and family planning, and communal living that brings close relationships outside the family structure.

Instead of creating multi-media sketches from existing futures visions and scenarios, it became clear during the process of this project that these mash-ups of key project findings needed to be created from scratch by the SDS designers to capture the richness of ideas and missing elements. These visualizations aim to provoke further and deeper conversations about the foundations of desired sustainable living futures that are within our ecological means.

Gap area: Simple living

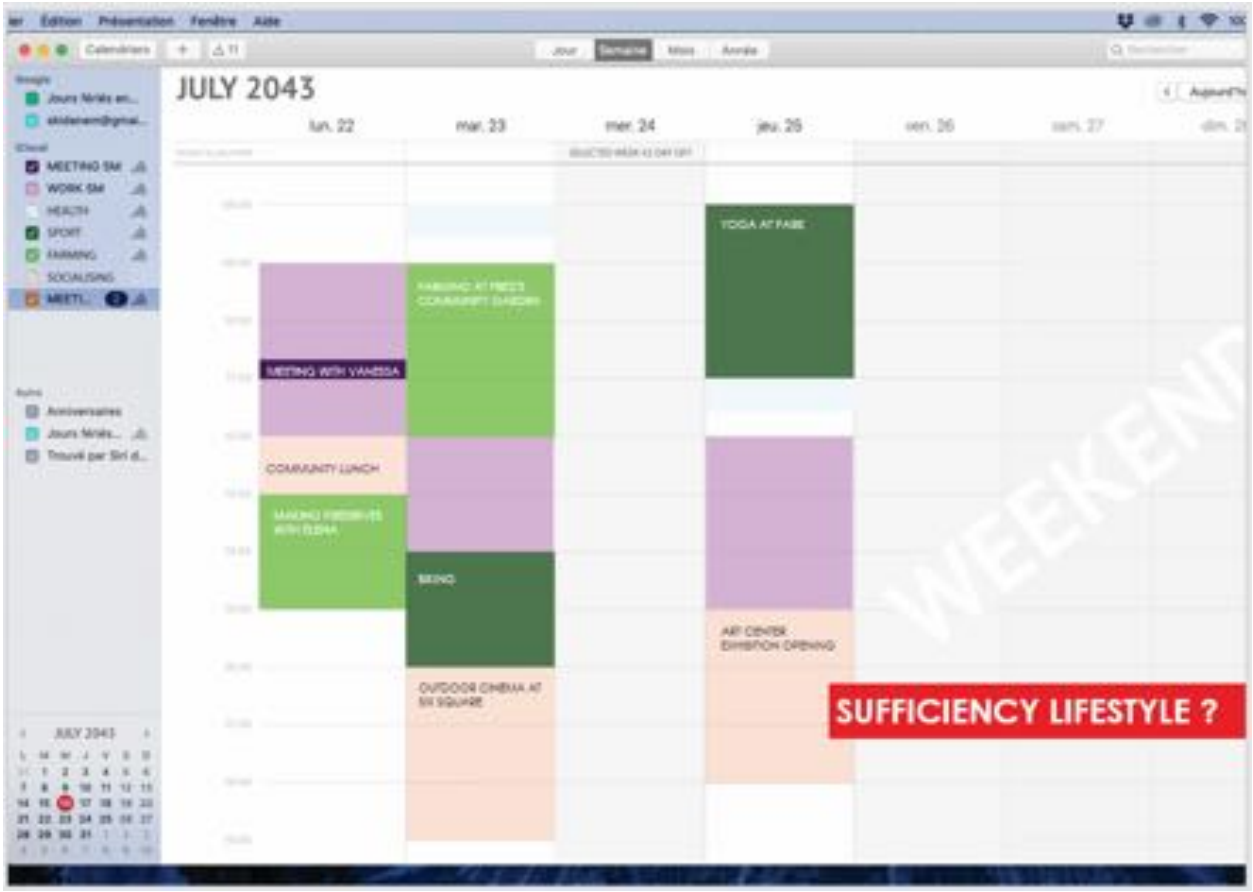
What if people gained points from sustainable living practices and activities which they could spend on other sustainable living goods and services or donate?

- **Ecological: GHG emissions / ecological footprint:** swapping clothing reduces the need for new energy and resource intensive clothing to be produced.
- **Social:** opportunity for personal expression and social connectivity through the swapping activity.
- **Economic**: new enterprises emerge to support swap events and repair and alter clothing.

Gap area: Simple living

What if people were able to book underutilized spaces as shared facilities in their region?

- **Ecological: GHG emissions / ecological footprint:** swapping clothing reduces the need for new energy and resource intensive clothing to be produced.
- **Social:** opportunity for personal expression and social connectivity through the swapping activity.
- **Economic**: new enterprises emerge to support swap events and repair and alter clothing.



Gap area: Simple living

What if people celebrated and embraced sufficiency and allocated their time to balance personal, committed household activities, leisure and contract time?

- **Ecological: GHG emissions / ecological footprint:** sufficiency is essential for reducing demand for high impact consumption and reorienting around wellbeing and thriving with lower footprints.
- **Social:** wellbeing can be enhanced through freeing up more time for social connection and developing the social networks to support ways of living.
- **Economic**: non-consumptive services will grow as high impact consumption enterprises diminish.

Gap area: Ecology

What if we engaged in radical and large-scale natural restoration to support ecological, community and mental wellbeing and create green infrastructure?

- **Ecological: GHG emissions / ecological footprint:** increasing ecologically rich areas increases the productive and absorptive capacity of natural systems including of greenhouse gas emissions.
- **Social:** there are significant restorative qualities of spending time in and connecting with nature for human wellbeing.
- **Economic**: the ecosystem is the fundamental means for economic development.

Gap area: Ecology

What if we provided options for densifying rural development and reduced incentivizes to sprawl onto green and brown fields?

- **Ecological: GHG emissions / ecological footprint:** dense human habitats can have lower footprints in terms of smaller unit sizes, efficient material and energy use as well as infrastructure supplies. Green fields are also maintainted to support natural productive capacity.
- **Social:** the sense of social connections and belonging can increase and affordability can be supported by enabling mixed use and connected, complete community development.
- **Economic**: Denser communities can be seeds of economic innovation.

Gap area: Learning

What if sustainable living insights, skills and capacities were taught and experienced at mobile sustainable living centres in communities?

- **Ecological: GHG emissions / ecological footprint:** living lives within One-Planet requires strategic understanding of high-impact activities and practices and clear direction on solutions and skills training.
- **Social:** learning is inherently social and the skills for living One-Planet lives require collective action and collaboration among social groups.
- **Economic**: this learning system is an entirely new aspect of the economy.

Gap area: Learning

What if learning about sustainable living practices and solutions was supported by a life-long peer network of other learners?

- **Ecological: GHG emissions / ecological footprint:** living lives within One-Planet requires strategic understanding of high-impact activities and practices and clear direction on solutions and skills training.
- **Social:** learning is inherently social and the skills for living One-Planet lives require collective action and collaboration among social groups.
- **Economic**: this learning system is an entirely new aspect of the economy.

Gap area: Finance and economy

What if people participated actively in determining where some public spending is allocated in order to advance sustainable living?

- **Ecological: GHG emissions / ecological footprint:** the way we invest money and resources determines the financial context for low-footprint lives.
- **Social:** the process of participatory budgeting connects people together in community and enables the decision-making power of vulnerable and marginalized populations.
- **Economic**: local decision-making can stimulate both local and international sustainable economic activities.

Gap area: Finance and economy

What if people participated actively in public services and caring for the context for sustainable living?

- **Ecological: GHG emissions / ecological footprint:** living sustainable lives is also about the city infrastructure that supports those lives. Participating in city caretaking can be not only a low-impact time activity itself but also invest in this enabling context.
- **Social:** this is inherently about the social conditions for wellbeing and the services that enable sustainable living. The caretaking itself is also an opportunity for engagement and connection.
- **Economic**: healthy economies are established on the basis of strong public contexts and services.

Gap area: Sustainable social norms

What if the faith community led the way in catalyzing sustainable living?

- **Ecological: GHG emissions / ecological footprint:** values such as non-materialism, sufficiency and simple living have been central tenets of many world religions and support low ecological impact lives.
- **Social:** faith communities are social communities bringing people together around common beliefs and values and often providing support for the most vulnerable in society.
- **Economic**: value-led dialogue and practices can lead people to reinforce and support value-led businesses and enterprises.

Gap area: Sustainable social norms

What if challenging conflicts and inherent tradeoffs in sustainability decision-making were resolved with the expert facilitation of mediators?

- **Ecological: GHG emissions / ecological footprint:** low-impact living requires difficult decisions at the individual, community and societal level that can be enabled by competent mediators.
- **Social:** a solid community is one that is able to resolve conflicts in ways that reinforce and value difference while finding ways forward for action.
- **Economic**: mediators could be an entirely new livelihood and employment opportunity.

Gap area: Sustainable social norms

What if groups connected around the world to help each other solve sustainable living challenges?

- **Ecological: GHG emissions / ecological footprint:** achieving significant reductions in GHG emissions and living within ecological means is challenging and a global issue that can be supported by international dialogue and support.
- **Social:** social connectivity and belonging is not only local but can be global among people brought together to challenge and support each other to live One-Planet lives. This is also about who gets to co-create futures in just and inclusive ways.
- **Economic**: the support network can reinforce and catalyze market-based solutions to the challenges they encounter and even come up with entrepreneurial responses themselves.

Gap area: Foodways

What if sustainable traditional and new cooking practices from around the world were actively shared?

- **Ecological: GHG emissions / ecological footprint:** footprint and GHG emissions are significantly reduced by less wasted food and reduced red meat and dairy consumption.
- **Social:** intergenerational and cross-cultural knowledge sharing reinforces social connectivity across boundaries.
- **Economic**: agricultural industries, food supply chains, restaurants and cooking enterprises are supported through these endeavours.

Gap area: Foodways

What if meal sharing together became a common practice?

- **Ecological: GHG emissions / ecological footprint:** footprint and GHG emissions are significantly reduced by less wasted food and reduced red meat and dairy consumption.
- **Social:** 'breaking bread together' has always been a key way to build connection and bridge difference.
- **Economic**: agricultural industries, food supply chains, restaurants and cooking enterprises are supported through these endeavours.

Gap area: Foodways

What if we all participated in food production in our daily lives in ways that were enhanced by technology?

- **Ecological: GHG emissions / ecological footprint:** footprint and GHG emissions are supported by more locally produced food.
- **Social:** solutions for food production can be shared within community.
- **Economic**: a technology enabled food production system also enables the tech companies and food industries that underpin these practices.

Gap area: Foodways

What if we were part-time farmers?

- **Ecological: GHG emissions / ecological footprint:** footprint and GHG emissions are supported by more locally produced food.
- **Social:** part-time farming connects people together and with their food.
- **Economic**: livelihoods could return partly to food production as a main way of spending time and engaging in economic activities.

Gap area: Foodways

What if we were part-time farmers?

- **Ecological: GHG emissions / ecological footprint:** footprint and GHG emissions are supported by more locally produced food.
- **Social:** publicly available fresh fruits and vegetables connects people together and with their food. It can also address the 'food desert' issue in marginalized communities who currently do not have access to fresh fruit and vegetables.
- **Economic**: livelihoods could return partly to food production as a main way of spending time and engaging in economic activities.

Gap area: Technology (and Foodways)

What if some of the dirtiest and most repetitive aspects of farming were supported by technology?

- **Ecological: GHG emissions / ecological footprint:** footprint and GHG emissions are supported by more sustainably produced food and less wasted food including on the farm.
- **Social:** by reducing the amount of time spent farming, people can spend more time connecting with others.
- **Economic**: livelihoods can be supported and supportive technology industries would grow.

Gap area: Technology (and Ecology)

What if all citizens were citizen scientists using technology to draw attention to and monitor nature?

- **Ecological: GHG emissions / ecological footprint:** ecological restoration is a significant part of achieving a better balance with nature and people can play a great role in achieving this natural restoration.
- **Social:** citizen scientists can come together to be nature stewards.
- **Economic**: this can itself be a livelihood and can also support other economic activity including sustainable agriculture.

Gap area: Technology

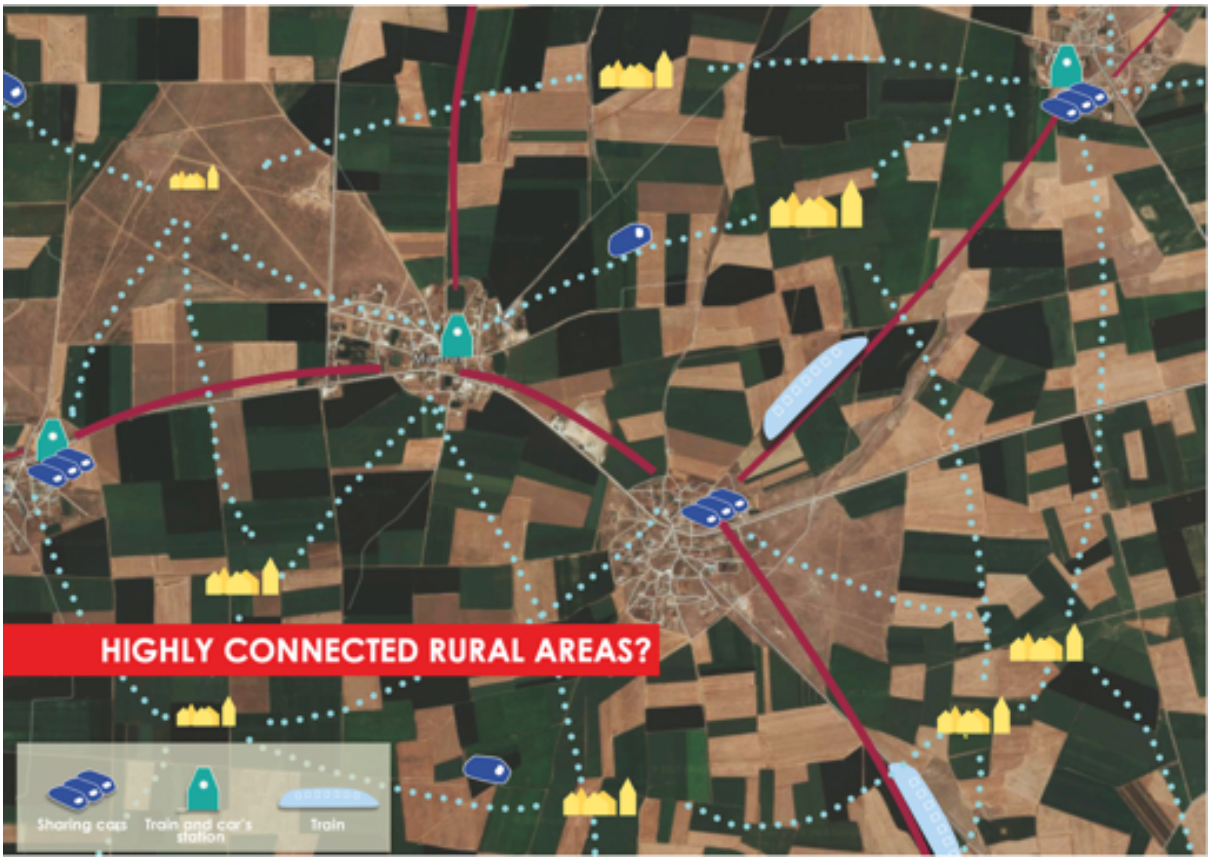
What if skills and tools were shared to support sustainable living for all?

- **Ecological: GHG emissions / ecological footprint:** technological platforms can connect sustainable living needs with those who have the skills and tools to enable One-Planet Living.
- **Social:** the process of skills sharing and tool sharing brings people in contact with each other and provides diverse communities with the capacities to live sustainable lives.
- **Economic**: skill and tool sharing enterprises and livelihoods emerge from this activity.

Gap area: Mobility and slow travel

What if car ownership was completely replaced by car access?

- **Ecological: GHG emissions / ecological footprint:** car ownership and emissions from vehicles are a significant contributor to greenhouse gas emissions and personal ecological footprints. This solution reduces this impact.
- **Social:** there is a potential to not only share cars but share rides. Car access can also support affordable mobility options for all.
- **Economic**: car and ride sharing enterprises as well as enterprises that develop and maintain mobility sharing platforms benefit from this solution.



Gap area: Mobility and slow travel

What if living in rural areas was supported by convenient and multiple mobility options among rural communities?

- **Ecological: GHG emissions / ecological footprint:** car ownership and use – with resulting carbon emissions – is high among rural populations because these populations are underserved by mobility options. Increasing options for sustainability connecting rural areas and solving the 'last mile' problem when traveling from rural to urban areas is beneficial for reducing ecological impact.
- **Social:** there is a potential to not only share cars but share rides. Car access can also support affordable mobility options for all.
- **Economic**: mobility enterprises as well as enterprises that develop and maintain mobility sharing platforms benefit from this solution.

Gap area: Mobility and slow travel

What if long-range tourism was also slow tourism over many months?

- **Ecological: GHG emissions / ecological footprint:** low-carbon tourism solutions are an important part of achieving One-Planet Living as currently leisure and tourism accounts for high ecological footprints.
- **Social:** slow tourism can also lead to social connections among those traveling and those they encounter.
- **Economic**: there are many economic opportunities in developing a slow tourism industry with many diverse goods and services.

Gap area: Mobility and slow travel

What if tourism was virtual especially to highly sensitive areas?

- **Ecological: GHG emissions / ecological footprint:** low-carbon tourism can also be resolved through staycations and virtual travel.
- **Social:** virtual tourism is not necessarily social but can be if people are part of joint experiences and engage with others virtually.
- **Economic**: there are many economic opportunities in developing a virtual tourism industry with many diverse goods and services.

Gap area: Time use (and contracted time)

What if we worked from home?

- **Ecological: GHG emissions / ecological footprint:** commuter emissions are compounded by congestion during peak commuting hours. Working from home reduces these impacts.
- **Social:** the opportunity to work from home also can enable virtual social connections through online platforms and home and neighbourhood connections by those nearby.
- **Economic**: there are many economic opportunities in developing a virtual work industry with many diverse goods and services.

Gap area: Time use (and leisure time)

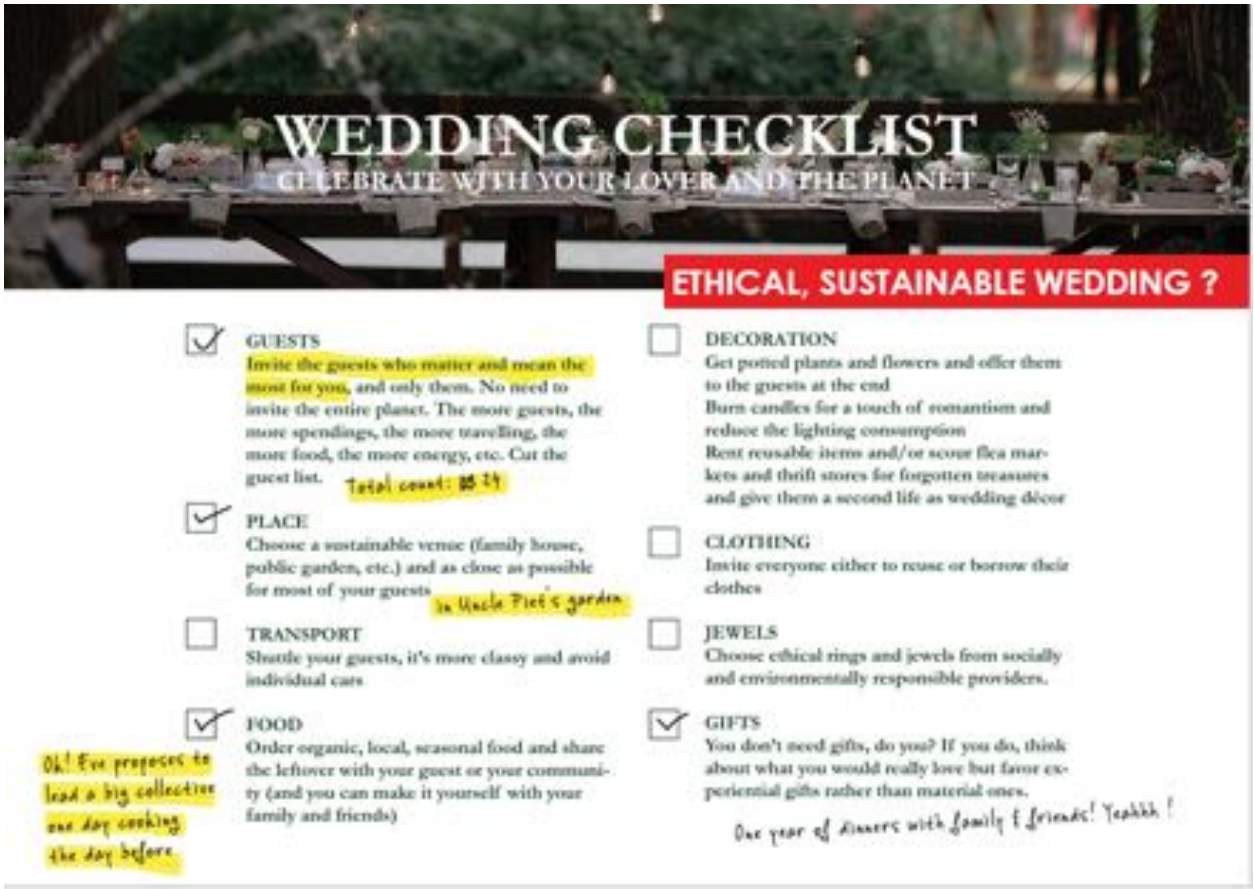
What if our leisure time was focused around low-impact and high wellbeing activities including sports?

- **Ecological: GHG emissions / ecological footprint:** moving away from high impact leisure activities including shopping to low-impact, high wellbeing activities including joint sports and wellbeing activities can contribute to One-Planet Living.
- **Social:** sports and wellbeing activities are social by nature and contribute to a sense of belonging.
- **Economic**: there is a whole sports and wellbeing goods and services industries that can be vibrant and prosper with this focus of people's leisure time.

Gap area: Life transitions and events

What if our cemetaries were forests in which trees were planted with human remains and people gathered to reflect on end-of-life and on the passing of their loved ones?

- **Ecological: GHG emissions / ecological footprint:** the funeral industry and burial can have ecological impacts which would be addressed with this solution.
- **Social:** There is value in socially acknowledging and engaging with life and death questions as a healthy part of society, as opposed to allowing the fear of death to drive addictions including to shopping, alcohol, drugs and other substances.
- **Economic**: the sustainable cemeteries is a powerful opportunity for productive enterprise.



Gap area: Life transitions and events

What if our cemetaries were forests in which trees were planted with human remains and people gathered to reflect on end-of-life and on the passing of their loved ones?

- **Ecological: GHG emissions / ecological footprint:** weddings can be wasteful and high footprint endeavours but instead can be celebrated in low-carbon and low footprint ways.
- **Social:** Weddings and other life transition events including rites of passage, birth of children, retirement, changing careers, are all opportunities to signal cultural practices to each other in ways that reinforce sustainable social norms.
- **Economic**: the sustainable wedding industry is a powerful opportunity for productive enterprise.

Gap area: Life transitions and events

What if the welcoming process and ceremony for new immigrants includes sustainability training?

- **Ecological: GHG emissions / ecological footprint:** One-Planet living is not inherent but needs cultural reinforcement and an enabling context to live low footprint lives.
- **Social:** New immigrants in a community can be enabled to live sustainability through training, peer support, and supportive societal contexts.
- **Economic**: there are opportunities to not only develop training and capacity building enterprises but also to stimulate enterprises that support sustainable living including for new members of a community.

Gap area: Sustainable population

What if our need for larger families in order for support in old age is offset by more communal living and adopted 'grandparents' and family members?

- **Ecological: GHG emissions / ecological footprint:** continued population growth places a burden on our ecological systems with every new individual added. Reducing our climate and ecological impact requires sustainable population approaches.
- **Social:** This solution is a social one in which community replaces family expansion in meeting people's needs and feelings of belonging.
- **Economic**: This is less of an economic solution and more of a social one, except that a healthy, happy community is also productive in the economy.

Voices from the Field

on Sustainable Living Futures

The following are a series of Sustainable Living Futures vignettes by a number of this project's Advisory Group members. In these stories from possible and desirable futures, the authors explore how sustainable living futures could unfold, and how different element combine in societal change and, for some, how they are reflected in the daily lives of imagined people. These 'Voices from the Field' perspectives aim to address some of the gaps that we identified in this project and devise expanded visions of possible sustainable living futures.

See the submissions here:
https://drive.google.com/open?id=1Nwtv1fBC406ulO3gy9qTmXbY5bnynR8L

- Blake Robinson: Afritopia
- Divya Sharma: Convergence
- Erik Assadourian: Middletown Connecticut
- Lei Zhang: Chinese Youth Futures Visions
- Misgana Elias Kallore: Wellbeing Based Futures
- Sonia Dias: Sustainable livelihoods
- Sonja Graham / Chris Large: Calendar 2050

Life portraits in 2075- Bridging inequalities in a converging world – Divya Sharma

2075 - The world's achievement to reach a common goal after years of work and awareness creation has reaped its benefits. We have finally learnt to live with nature yet use technology to make our lives easier and time effective. The vision of a sustainable and just society is beginning to come true.

Earth's rising CO2 levels have stabilised and there is consensus, action and solid preparation to maintain this at acceptable levels. We live in up to 70% recycled world. Nothing is wasted; we are learning to avoid non-degradable waste and making judicious use of world's resources - our common good.

Sustainability is redefined - where both ends of the income scale are considered. A decent living for the poor and enough opportunities for growth in terms of housing, education, jobs and health is possible now. For the developed end of the scale, the wider community is increasing recycling, producing energy from waste, and using resources judiciously with an intent to share across societies and conserve for future.

Governments are investing in education, job creation, public distribution systems and welfare schemes for poorest of poor have increased their reach. Sustainability means a just society and equitable distribution of resources across time and space which also means aiming to reduce extreme poverty / slums / homelessness and conserving for thefuture. The goal is to bring parity in lifestyles by rapidly uplifting people and regions from extreme poverty. Healthy living, clean water, access to jobs, education, health, clean air, sustainable mobility are primary goals of sustainability.

The developing world houses knowledge about traditional living and there is a sharing of this knowledge and use of technology to building bridges between developed and developing world and foster sustainable living. Technology has brought markets closer and markets for organic produce have opened up like never before. There is interest in learning and co-creating traditional, more environmentally sensitive and friendly products between developed economies and the developing ones. Big markets are opening up and businesses are developing to update some of this knowledge to adapt to the pace of life. Set in this background is the inspiring lives of Abhay and Madhurima in India and Luciana in Spain.

Abhay

Abhay a 35-year-old father of two could not have imagined the life that he leads if he was born in his father's generation. Closely tied to his life is the life of his father, Gopal Rao who was born in a village Bandavwadi in the northern part of Maharashtra State. Gopal Rao finished his high school from a Government aided school there and as most youths from villages choose to do afterwards – he migrated to the nearest megacity of Mumbai to get a source of employment. It was 2035 and Mumbai as we all know was brimming with great infrastructure, facilities, slew of jobs but on the other side it also was an expensive city to live in and not all could comfortably settle in. Made to accommodate at the villagers' residence initially, a small 650 sq. feet apartment which was shared by 8 other migrants; Gopal Rao was overwhelmed the moment he came to the 'city of dreams.'

After a few days of struggle to find a job, he got placed with an online e-commerce company as an office support staff. This was his first job which gave him INR 35,000 per month, good enough for him then to survive and save some for his folks back in village. He worked very hard at this job learning a lot of skills on the job and upgrading his knowledge on office management, simple accounts, and gradually marketing. In the year 2045, he switched to join the marketing team of a beverage producing company. His salary now was INR 65,000, however not the ideal growth curve due to his lack of formal qualifications. Also, he was now married and had two children, a 5 year old son, Abhay and a 2-year-old daughter, Malti, all living together in a rented apartment in the suburban Sion area. After accounting for all his and his family's expenses, he could barely save enough for his folks back in village who were getting old and were dependent on him. This made him really question his decision of migrating to Mumbai.

Every day for the next 5 years he would think of moving back to his village for a better, more comfortable and dignified life. His thought was not completely unfounded as he had a good 2 acre land to himself there and with the Government scheme of check dams, his village which was once drought ridden had good supply of water for all 12 months now. He finally gave in to his desire in the year 2050 and moved back to his village Bandavwadi. Inspired by a few instances he read, he decided to file an online application for drip irrigation under the 'Governments' Livelihood Mission mandate and got a positive response within the next two weeks. He had to contribute a small percentage to avail the scheme, which he did, and with this he got a drip irrigation system installed in his 2 acre plot.

He also made an important investment. He educated his children and made sure both Abhay and Malti acquire a postgraduate level degree. Abhay had seen his father very closely and was learning a lot of agriculture from him. Besides this, he had opted for e commerce in his undergraduate and was already helping his father in his agri business. As hardworking as he was, he was also very tech savvy and was constantly watching videos, reading up articles online related with farming and allied sources of income in villages. He is the first person in his village to use drones - An agricultural drone is an unmanned aerial vehicle applied to farming in order to help increase crop production and monitor crop growth. Sensors and digital imaging capabilities can give farmers a richer picture of their fields.

This is year 2062, Abhay is 22 year old. It was November – post monsoon and end of paddy season– when villagers would migrate to different cities, but Abhay was smarter and knew there was immense scope to grow a second crop in the winter (Rabi) season. He did exactly that and thanks to his knowledge on farming from watching different videos online and success stories from all over the country, cultivated 3 vegetables – water melon, okra and chillies until February using drip irrigation.

His fresh organic vegetables quickly had a good market, thanks to Abhay's entrepreneurship and knowledge. By rotating his money earned he grew from strength to strength and in 2068 listed with an organic e-commerce company as a vendor. He also bought some more land and started growing long staple cotton, a *kharif* crop that produces long, fine and shining cotton which is used for making fine and superior quality cloth. It fetches the best price. He is one of the bigger supplier of fine cotton to fabric making industries all across India and is now beginning to see avenues for exporting his cotton produce to different countries.

Luciana

Far away from Abhay and his family in Barcelona, Spain, Luciana is a young fashion designer, age 34, who specialises in working on organic handmade textiles. An environment and sustainability enthusiast Luciana likes to dance away her weekends with friends when she is not travelling to the most exotic places of the world. She is drawn to India and visits India frequently. Travelling has become very interesting with a lot of carbon offsetting options available for individual and other innovations. For example, there are power e- tickets where the passenger have the option to cycle inside the plane for a specific time and generate power that runs a lot of subsidiary functions on the plane like warming the food, lighting the aircraft, mechanising toilets and air conditioning. Some of the ships also use similar systems where they generate their own solar power and part of the power is generated by the passengers who cycle for specific time while on ship and contribute to power generation while keeping fit and enjoying company of other fitness enthusiasts! Besides this, some part of the ticket-fare goes to a joint fund for maintaining and growing new forests.

Luciana's journeys are that of exploration of the spiritual realm, of yoga and meditation, but also to find more about newly revived roots of sustainable living that India has stood for many centuries. Professionally, India and that part of the world also draws Luciana because of her interest in traditional handicrafts of this part of the world and how these have overcome the difficult last century in the wake of globalization and industrialisation. However, these are different times, she can see India changing and her frequent visits have helped her in joining hands with Indian artisans and designers. She now understands traditional eco-friendly Indian handlooms and creates high fashion products using them back home in turn providing employment to hundreds of people in the sourcing country.

Over the last 10 years, she is leveraging advanced business and production systems used in India by traditional craftsmen to create her self-designed fabrics. She has now direct business contacts with craftsmen who deliver her products, thanks to a much advanced internet-based banking systems and free video callings that help her send her designs to craftsmen while they send her lengths and lengths of fabric in no time. Craftsmen are using a composite system of producing fabric by machines and using very sophisticated block printing machines that make super rich fabric. They source fine muslin from Bangladesh and parts of India. Hundreds of women are employed in high profit making industry where they adorn the fabric with traditional embroidery.

Madhurima

Madhurima, an Indian businesswomen in her late twenties lives in Varanasi, the northern town of India known for its rich culture in music and traditional Indian dance and for its spiritual identity of being a town of temples on banks of highly revered river Ganges. Coming from a progressive yet humble family and keen to learn and grow, Madhurima is one of the highly educated youngsters in her family. Madhurima has acquired advanced dual degree in textile designing and business management. She could peruse this through a recognised distance-learning program by international virtual university. These virtual universities provide the chance to the most underprivileged to get education and change their lives at a very low tuition fee. The classes are conducted through advanced video classes and she has teachers living in various parts of the world.

Madhurima is Luciana's major provider in her business. She sources her fabric, raw material from Indonesia, China and Japan and has direct contacts with artisans in these countries. She has recently sourced and designed textiles for Luciana using Batik prints from Indonesia, Shabori from Japan and Kaili embroidery in China. Policies that support business and block chain based trading systems allow so much variety and ease in business!

Madhurima has also extended her skill and passion to designing costumes for advertisements, web series and motion pictures globally. She has joined the online portal seeking freelancers from different vocations across the globe and garnered good reviews through a couple of costume designing projects. These reviews are now bringing in more work for her and she has a separate team of mainly young graduates from colleges working to fulfil this part of her work demand.

Collectively, she has employed hundreds of women and is instrumental in changing their lives.

Abhay, Luciana and Madhurima are the icons of future. Their worlds are connecting for education, business, trade relations and knowledge sharing. Technology and policies that allow cross boundary exchange are at the core of these connections. This is just one of such stories which connects three lives while also influencing many more people.
In this vision of 2075, the world has come together like never before and there is global access to all things local, creating a world market for everyone. Stories of Abhay, Luciana & Madhurima exemplify that it is human qualities of empathy, hard work and vision which diminish boundaries, bridge inequality, and create a better world.

A Report from Middletown, Connecticut

A Story of a Small American City Adapting to the Realities of Climate Change in 2045

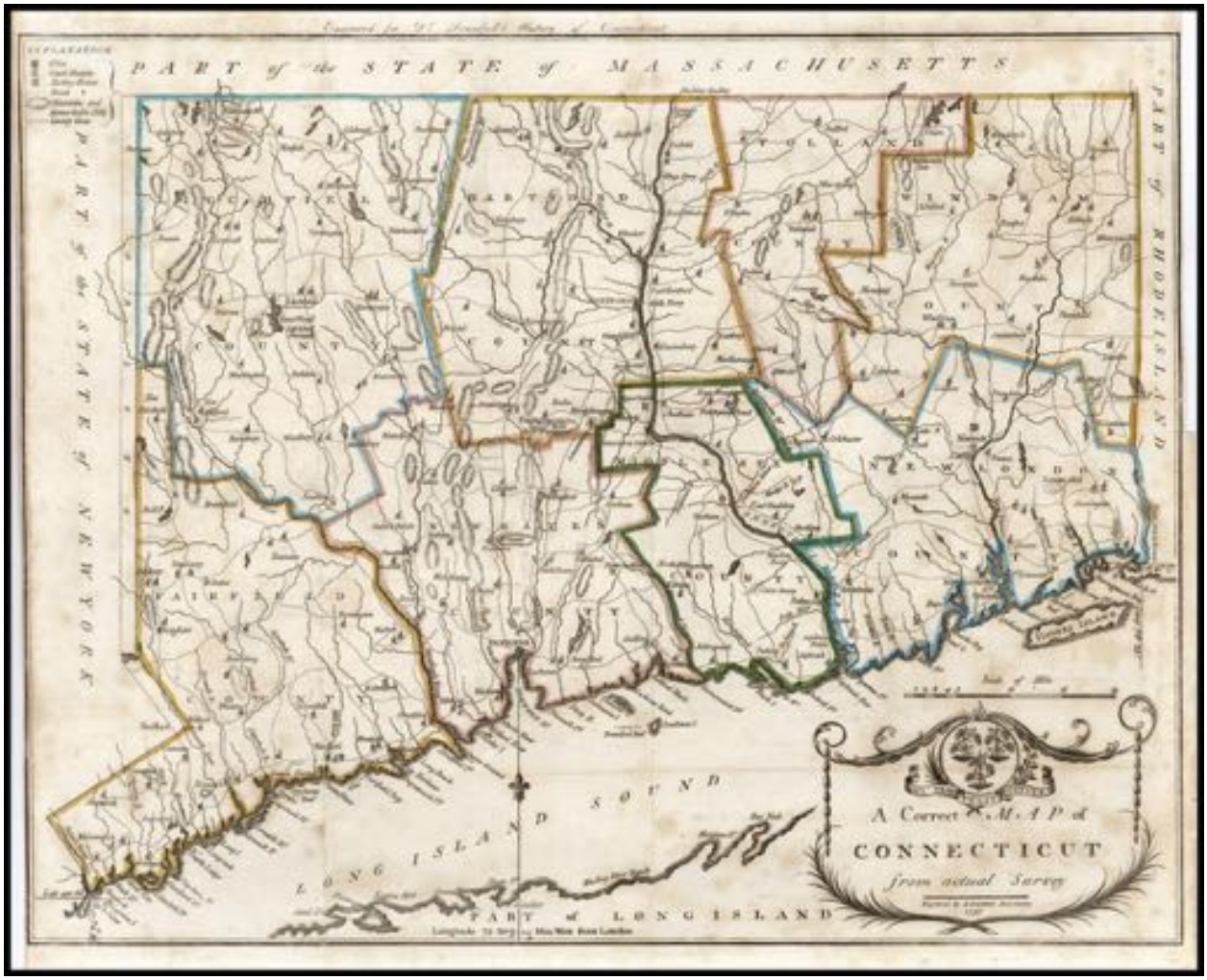
By Erik Assadourian[29]

Jack Frost tore his claws into us again last week. Even though average temperatures these past 16 years have continued to rise, the polar winds make at least an annual appearance—and this year brought almost three feet of snow to our small city in just a day and a half. Fortunately, in the year 2045, life in Middletown has become much slower and much more local. So most people just stayed inside, with the roads without bus routes staying unplowed for several days. Neighborhood leaders made sure to check on the older and infirm community members in their area, either by call, or by a snow-shoed hike to their homes. And eventually neighbors helped shovel out those areas that the plows no longer cover.

While that may sound backward, considering the regular plowing and salting that happened just 25 years ago, the ecological and economic costs of a fleet of plows, gasoline, and salt and sand made this no longer possible. Instead, residents recognize that winter is a time to simply slow down. Farms are dormant, many trades are too, so more people let the nine-hour light cycle guide their days, sleeping longer, working shorter hours, chatting at the coffeeshops—when weather conditions allow—and when they don't, staying home and taking care of neglected domestic projects.

It almost sounds idyllic even if some might see it as restricting. This essay for *New New England* will explore how Middletown, and those of us who call the city home, has not just been able to survive but thrive in an era of rapid changes and disruptions.

[29] Erik Assadourian is a sustainability researcher and Middletown resident.



Title: Map of Connecticut from 1797

Caption: *While the specific borders of Middletown have changed over the centuries, its location in the center of the state on the curve of the Connecticut River has not.*

We Were Ready

One benefit Connecticut had coming into this era of climate change and economic degrowth was that we were prepared for it—at least more than most states. Between 2004 and 2017 Connecticut experienced negligible economic growth in real terms.[i] Other than a short uptick from 2018-2020, that trend continued for the next 25 years, with an average of about 0.3 percent contraction each year. To be fair, that's far better than what happened to many places in America, but Connecticut's better results mostly came from population growth not by any real economic advances.

Between the great storms of 2023, 2028, 2029, 2032, and 2041, over 16 million people were displaced internally in the United States. More than a half a million people ended up in Connecticut, increasing the population by 14 percent (to 4.2 million).[ii] Middletown, which had been a walkable, relatively dense and affordable town, swelled from just under 50,000 to 72,000 people. This has not been easy on our older, sleepy city. But the people have managed.

Because Middletown had also suffered through decades of hard times in the 1980s and 90s, we already had in place the social service infrastructure to help deal with the rapid influx of climate refugees. Groups like Gilead, a 75-year old social service provider and institution in the city, have grown even more important providing for our new residents. While Middletown has managed these better than most—with the town's last tent city having just been dismantled after finding housing for the 50 families living there—there are still hundreds struggling to find their place in this new geography and reality.

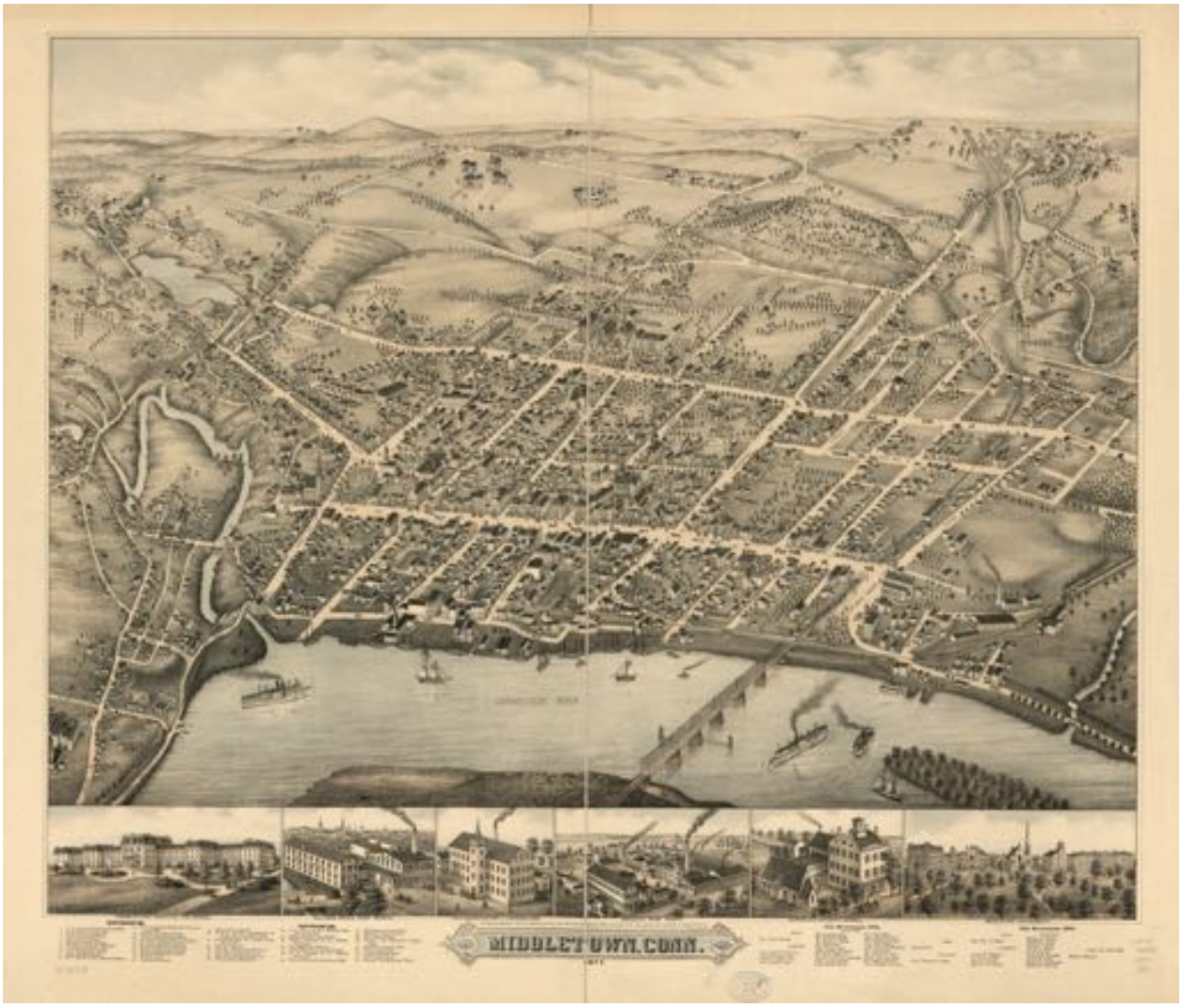
But, Middletown isn't just coping, there is a lot of great innovation happening in the city as well. Let's start right downtown.

Main Street

Middletown was incorporated in 1650 and has had a living Main Street commercial district for much of its history.[iii] When the converging economic and climate crises accelerated in the early 2030s, Middletown was one of the few American cities that still had a functioning, walkable commercial and mixed use core. Of course, this eight-block stretch of road looks different than it did in 2019. Gone are some of the restaurants and superfluous shops, and instead there are more grocery stores, general stores, cobblers, and other essential service providers that had been forgotten at the peak of the consumer era. Not surprisingly, with more time on people's hands but less money, coffeeshops, tea houses, and local pubs have also increased in numbers.

What residents (and prospective residents) soon discovered was that Middletown was a livable city—even without a car, which with greenhouse gas restrictions and global trade challenges, became too costly for most to own. Today, instead of cars, residents will mostly see on the roads a lot of bicycles and small buses shuttling around town. The city government, wisely, invested in its local bus system—making a far more comprehensive bus system (complemented by sidewalks and bicycle lanes), and did so by raising downtown parking and taxes on car ownership significantly, which further helped to drive down car usage.

With Main Street a key provider of jobs and amenities, the inner core ironically has gone from the least attractive area of town to the most. "The North End," a poorer neighborhood with a long reputation, has gentrified at an almost unbelievable rate—with the majority of poorer residents being pushed out to less walkable parts of town. While this has created tension, especially among gentrifiers[iv] and those fighting to hold on to their properties, it seems that at least the worst conflicts were avoided by providing a comprehensive and subsidized transit system.



Title: Map of Middletown from 1877

Caption: Main Street (running parallel to the Connecticut River) is as important today as it was in colonial and industrial times. And as in colonial times, it is once again car-free (by ordinance).

Returning to its Colonial Roots

With fossil fuel costs way up and global trade way down, Connecticut is returning to its colonial roots of farming and forestry. Middletown, with its dense core and open lands (not to mention reclaimed parking lots), has allowed for the redevelopment of agriculture. This started far before the crisis manifested with efforts like Forest City Farm—a 15-acre farm started in 2015. Middletown granted the proprietor a 50-year lease to develop this organic farm.[v] That turned out to be a smart move, as this became an incubator of sustainable farming innovation around the city.

Middletown now is able to provide for almost 80 percent of its food needs, with about 45 percent coming from commercial ventures and 35 percent coming from "yardfarms."[vi] Almost every resident (93.7 percent in the 2040 census) has at least a small vegetable garden, with the average household having one-sixth acre of food crops planted. With fewer people in the formal job market, someone in almost every household has time to manage the yardfarm, store or can crops, and cook (with the exception of the sick or yardless). The wonderful side effect of this is that people are healthier and thinner. In 2017 Connecticut, 27 percent of adults and 12 percent of children were overweight or obese.[vii] Compare that to today, when just 9 percent of adults and less than 2 percent of children are.

Title: Postcard of Middletown from 1910

Caption: Broad Street, in downtown Middletown, looks more like it did in 1910 than in 2010. Trees again line the street (which is used for buses, emergency vehicles, bicycles, and

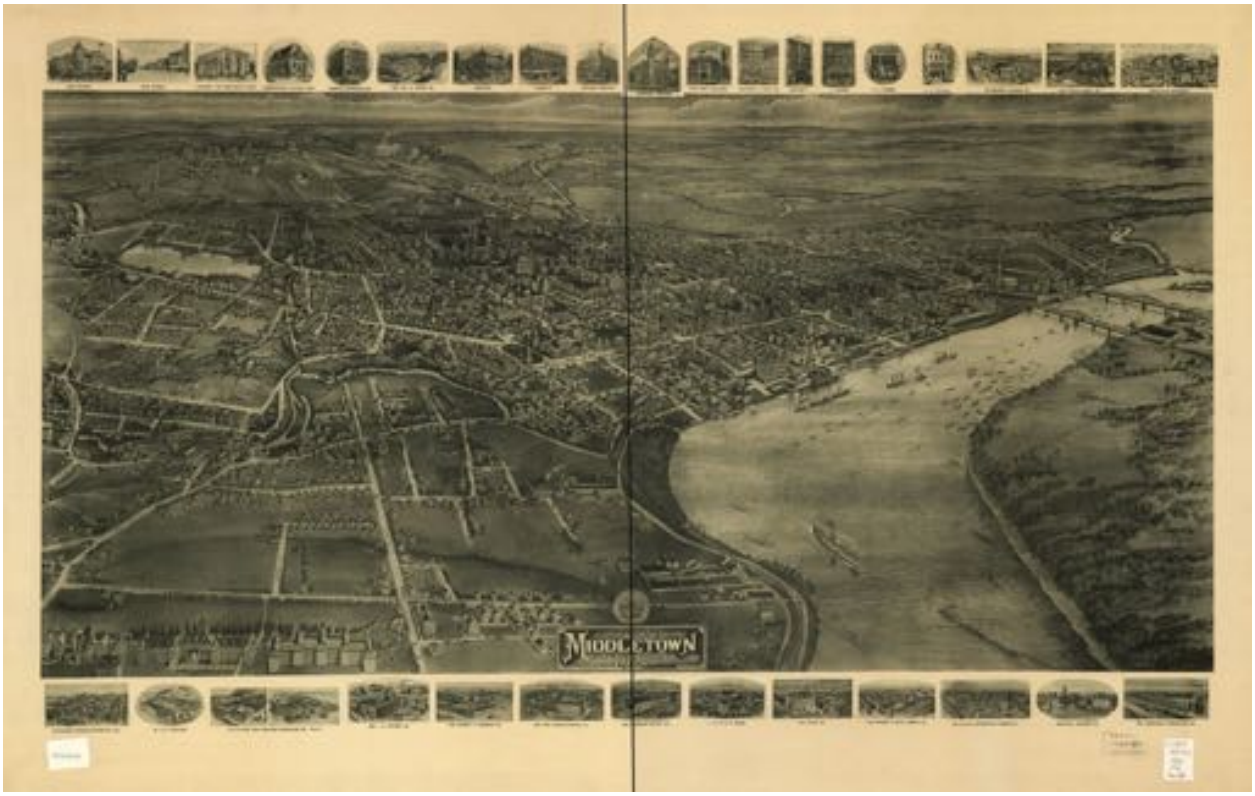
the occasional car) and no private cars are visible. What is not shown are the extensive gardens growing among residents' properties. And most street trees bear either fruit or edible nuts.

Middletown's New Economic Base

With Middletown being right on the Connecticut River, and American highways and roads increasingly in disrepair, more shipping is happening via water (not surprising considering that Middletown was New England's fourth largest port in colonial times). The Connecticut River, along with the wind and sun, provides free power to get our surplus crops, our beer and cider, our lumber, and some of our manufactured goods to other states in the Union.

With the contraction of the global economy, some of the gems of 2018 have now lost their luster. The FedEx hub opened in Middletown in 2018 is now being repurposed as a granary, agricultural storehouse, and local food business incubator, after FedEx abandoned the site in 2033.[viii] But some of the gems of the colonial era are now being repolished. The brownstone quarry in Portland (our sister city across the river), which exported brownstone around the world throughout the 1800s (including to many neighborhoods in New York City), is functioning again. Now that people once more understand the value of constructing buildings to last centuries, this beautiful material is in. Those thick stones also have a large thermal mass helping with heating and cooling in a time when gas and electricity are far more expensive (or at times simply unavailable). And with American labor once again cheap, the economics of quarrying this stone makes sense.

Middletown has also done well as it still is home to Wesleyan University and Middlesex Community College (MXCC). Not much about Wesleyan has changed—while its endowment (like so many other prestigious schools') has shrunk along with the stock market, it is still going strong, and teaching the next generation of political, economic and cultural elites. MXCC, however, has become vastly more important than it once was. In 2018, with Connecticut's perpetual budget challenges, MXCC and the state's other community colleges were threatened with a significant contraction.[ix] But the college survived somehow. That's fortunate, considering that today MXCC is a regional leader in re-educating the population for our new reality, playing a key role in teaching agriculture, renewable energy maintenance, repair, and the many other industries that have become far more important and in-demand in our post-consumer era.[x]



Title: Map of Middletown from 1915

Caption: Middletown has developed significantly since 1915, however the town center remains similar, with Wesleyan University towering over downtown. Most homes in the center are now multi-family houses and most garages have been repurposed into accessory dwelling units.

The Growth of Community—Sustainably

What's been most noticeable in the past few decades is that the roots of community have really taken hold. As an older city, churches, annual festivals, and fraternal organizations already played a central role in gluing the community together. But now they are front and center. Residents now engage more regularly with neighbors through these opportunities, as well as through community potlucks, conversing at cafes and pubs, and through regular neighbor committee meetings. And perhaps most importantly, as neighbors now depend on each other—exchanging services and goods frequently—this ties the community closer together than anytime but perhaps its early colonial beginnings.

But where's sustainability in all this? Well, people buy far less as they can't afford fancy gadgets, consumer foods, or far off travel any longer. They live locally, eating locally raised foods and using locally made goods—but doing so frugally, making these things work until

they are worn to nothing. People also spend far less time with screens, behind wheels, and in cubicles.

Instead they're visiting neighbors, yardfarming, playing games and sports, joining neighborhood choruses and bands, practicing karate at the local dojo or volunteering with the many needs of a town in transition. Families are also choosing to have fewer children, so in a few decades, a smaller population will make it easier to make do, but there will be several more challenging years ahead.

So are people living more sustainably? Yes. Did they choose to? Arguably not. But would they choose to return to sitting in front of computers all day, emailing memos and surfing the latest deals on Amazon? A few might, but most wouldn't trade the healthier, slower, more connected, and more rewarding lives that have come as things have slowed down and moved beyond the frenetic consumer era.

Chinese Youth Visions of Sustainable Living Futures

Lei Zhang
Renmin University of China, Beijing

At the opening ceremony of the UN Climate Change Conference in Katowice on December 2 of 2018, United Nations Secretary-General António Guterres pointed out in his remark that "we need a full-scale mobilization of young people." Jack Ma, the founder of Alibaba, emphasized during a meeting with students of Tel Aviv University in 2018 that the success of Alibaba was achieved through supporting young people, SMEs and women. He believed that future belonged to the young people who believed in future, who were born internet. This is especially true in Chinese telecom giant Huawei where 60% of its R&D departmental managers were born after 1985, 70% of the researchers and 41% of its country directors were below 40. It is indeed interesting and important to understand the young generations (also known as the "one child" generations of 80s, 90s, 00s) in today's China, a culture that traditionally respects the senior and the young are supposed to obey in family or at work. After all, they are the makers and owners of the future.

Here you will hear the voices of some students who are studying environmental management subject at Renmin University of China in Beijing. They are by no means representing the young people in general in China. They are well informed about environmental problems we face today and what will happen if we take no actions now. They were asked to imagine how life will look like by 2040: will it be more sustainable compared with current life? What will be the major changes by 2014? What are the things you mostly want to change in your life today? What will be the most important things for you by 2040? How you spend your spare time now? What are the apps you use frequently?

Among 17 young ladies and men, 2 doubted that future life would be more sustainable due to the lack of cooperation between countries. Most were positive and believed in two major driving forces: advancement of science and technologies

as solutions to today's environmental problems, especially for energy, communication, mobility and AI sectors; consumption-based lifestyle or overconsumption increasingly fail to function as synergistic satisfiers to young generations, more healthy and sustainable lifestyles will be mainstreaming. Improved environmental quality is one of the things they wanted to have now, following with good health, more free time, safe food, independent thinking, interesting jobs, balance between work and family, world peace. AI technologies are on the way to shape lives by 2040. They have mixed attitudes towards such new "smart" lifestyles, assuming more people would be freed from work but worrying about the lost value as human being and how to cope with environmental and natural resources constraints.

In the meanwhile, they were all living an internet-based life: the number of frequently used apps ranged from 5 to 20, through which they accessed all kinds of information, reading, shopping, ordering food, organizing travels, interacting with others, networking, recreating, participating, etc. This kind of convenient life did not go without concerns: addiction to mobile phones; easy shopping causing more and unnecessary shopping and trash all the way; confused virtual realities; zero privacy fear, lost trust in information, etc.

Compared with their parents and grandparents, they tended to embrace new technologies, to experience new business models, products, and services. As generations born internet, they did not have memories of "old and good" life when the world was not internetted. Naturally, they turned to innovative technologies and applications for solutions to environmental problems. "Green Apps", which aimed to induce behavior changes of their users with all kinds of incentives, became the easiest accessible initiatives for wide engagement of the public. Participating in "green apps" programs is also part of the daily life of these young students, for instance: "Ant Forest". The huge success of the 'Ant Forest' project that was launched by Ant Financial Services Group in August 2016 was a typical example in this regard. Ant Financial Services Group is a related company of Alibaba Group and parent company of Alipay, a leading online and mobile payment platform. It is focused on serving small and medium enterprises as well as individuals. With the vision "bring small and beautiful changes to the world". "Ant Forest" is the world's first, large scale pilot in greening citizens' consumption behaviors through the use of mobile payment platforms, big data and social media. The 'Ant Forest' encourages Ant's users to reduce their carbon footprint through a

three-part approach: (a) providing individualized carbon savings data to peoples' smartphone, (b) connecting their virtual identity and status to their earnings of 'green energy' for reduced carbon missions, and (c) providing carbon offset rewards through a physical tree planting programme (Figure 1). Since its launch in August 2016 through to January 2017, Ant's users signing up to the Ant Forest app rose to over 200 million. Statistics from the first 6 months show that younger people are more inclined to sign up to Ant Forest, in line with the general age demographics of online participation, with almost 60% of users being 28 years old or younger. Cumulative avoided carbon emissions are estimated at 150,000 tons and trees planted as part of Ant Forest amount to over one million by January 2017. "Ant Forest" is one of the quickest user-gathering applications in the world's mobile application history (Ant Financial Group and UNEP, 2017, "Scaling Citizen Action on Climate: ANT Financial's Efforts Towards a Digital Finance Solution"). The real value of this application is beyond planting trees but also effects on users' behavior and lifestyles (Ant Financial Services Group: Survey, 2017). There are still questions remained on scaling up and out of this pilot project, but "Ant Forest" highlights the potential for using digital finance to advance environmental sustainability, and young people are the major carriers of this movement.

Figure 1: From a virtual sapling to a real tree – overview of the Ant Forest app

(Source: Ant Financial Group and UNEP, 2017, "Scaling Citizen Action on Climate ANT Financial's Efforts Towards a Digital Finance Solution")

June 5, 2040: RUCers' Smart Bands Party, a virtual party organized for students graduated from the School of Environment to celebrate the 20 years after their gracuation.

	Xiaoran Li	Graduated from Renmin University in 2020, master degree in environmental management. After a PhD study on "Chinese Agro-Business Complexes" in the Netherlands, Xiaoran worked China-Netherlands Agricultural Innovation Center as director for seven years, where she gained rich professional experiences and developed extensive networks with universities, governmental agencies, businesses and associations in both China and the Netherlands. In 2036, her parents retired and Xiaoran decided to spend more time with them in Chendu, a city well-known for its cozy and slow lifestyle. She enjoys very much the combination of living close to parents and working as freelancer from home. She even has time to work voluntarily with the community on a project "circular economy of fashion". She and her neighbors try to promote resue, redesign and recycle of clothes. The owners of the clothes gain more green credits for longer use of the clothes. She is very happy with the apartment she lives in with her husband and 10 years old son. The building is highly energy sufficient and uses environmentally safe materials, which make air cooler and purifier unnecessary in

		Chengdu where summer is hot, humid and polluted. Public transportation is very convenient and she does not need a private car. It is 10 in the morning, June 5, 2040. Xiaoran pushes the button of her Renmin Smart Band, so excited to meet old friends!
	Ziqi Wang	Graduated from Renmin University in 2020, master degree in environmental management. Ziqi loves challenging works, so he joined an environmental consultancy firm after graduation. He was very excited with the job in the first few years, but increasingly he starts worrying about his health. He feels very stressed with those headlines, frequent business trips are no longer exciting. His 8 years old daughter is calling him “no time papa”. A recent health examination is also alarming. It is time to get rid of some weight and start jogging again. He decided to take a holiday with his family in cool north europe. Right now, he is in Den Mark, but he is happy that he will not miss the 20 years Party with the help of his Renmin Smart Band!
	Wenze Xie	Graduated from Renmin University in 2020, master degree in environmental management. Wenze has a change to visit Japan in an exchange program, there she met her husband. They both decided to live in Japan because her husband got a very good job in anime company. Their house is a kind of smart house. A wallpanel powers the entire house with no environmental impact. The intelligent kitchen knows and prepares their preferred food. The waste bin can automatically sort the wastes. Wenze’s favorate is the huge glass window towards the garden. With the VR system, she is able to

		actually participate in her parents' daily life. It is 10 minutes to the appointment with her classmates, a virtual party to celebrate the 20 years after graduation from Renmin. She is getting very excited.
	Gezi YU	Graduated from Renmin University in 2020, master degree in environmental management. Gezi continued with her PhD study in the United States and then worked with UNEP on sustainable consumption programs. She has been traveling a lot all over the world these years. She and her husband, an American artist, live on the top floor of a high rise in the center of the city, with an amazing view of the city. She loves this small but very cozy and "natural" apartment. Whenever possible, she loves spending time at home to relax. There is a handy central control panel, she is actually talking to it to regulate temperature, do online shopping (delivered with drone), know the weather, grow her balcony garden, cook coffee and meals, etc. In her spare time, she loves to design and make plush toys as gifts to children in countries she visits. It is late night now, but she is ready for a great party with old friends from Renmin. They will be in the same virtual party from all over the world.

Wellbeing-Driven Future
- Misgana Elias Kallore

It is year 2050, the district of Wonsho with a population size of 130,000, is a model village - town with an urban structural design contrasted with its rural, green infrastructure. The climate smart village-town leap frogged to a sustainable and wellbeing-based development that provides a space for good, enjoyable, and fulfilling lives that rely on improved social relationships and environmental balance.

Every individual takes responsibility and is accountable to look after an efficient use of shared resources that reduce the risk of overconsumption and abuse of the ecological system. For example, besides generating electricity and drinking and cooking use, the community recycles water for irrigation and cleaning purposes.

The system measures its success based on the fulfilment of human needs within the limits and possibilities of the surrounding resource base, and has increased ownership and access of underconsumers to the level where their basic needs are met. The district keeps score cards to compare among villages within the district, whereby each year one village receives the Highest Wonsho Sustainability Award as a motivation.

Mr. Aschalew Bebirtu and his wife Maritu are a family of six with their four children. Life was very challenging for them three decades back, starting from not having enough to eat, not living in accommodation fit for six, not owning a piece of land for farming. His wife, Maritu, used to exchange her labor - to clean and do household works- for a kilogram flour of maize per month to feed her family while Mr. Aschalew did farm peoples' land for in-kind payment of grain after harvesting, which he sold to buy some food and kerosene for lighting. Sending his kids to school was beyond reach but he used to let them shepherd people' cattle for a price of a bit of bread.

Since 2018, things started to change for them for the better when the government declared an inclusive and bottom-up development approach that aims at poverty eradication, equity share and fair distribution of resources for sustainable development. Now, Mr. Aschalew and his family have a place to live in a residential compound that was built by the government for people like Mr. Aschalew, as well as allocated shared lands for cultivation in cluster. Last year, 2049, a cluster group, of which Mr. Aschalew is a member, had produced organic vegetables that was distributed in local markets and nearby districts as well as for food processing companies. Green manure is what the production system is required to use, while energy poverty is tackled for these people by provision of solar-home system and shared biogas systems. Today, Mr. Aschalew' children are university and technical vocational training (TVT) graduates. One of the children is the one who runs a company that supplies and maintains solar-home systems for communities. The company uses a shareholder model to benefit all co-workers equally and horizontally without creating a vertical hierarchical

approach. As eco-mobility is one of the actions that the town is modeled for– it is seen in the residential complex that Mr. Aschalew and his family is living in –cycles for shared use and electrically charged ambulances are provided in designated stations inside the complex. In this town everyone is expected to be multi-skilled, that is why all residents get a turn to be on call as drivers for the ambulances as need arise. Mr. Aschalew and his friends spend their leisure time playing 'gebeTa' which is a traditional game and 'Gena' – which has a similarity with a modern day hockey – are one of the main ones that Mr. Aschalew likes the most. In most of the games they compete with younger ones for recreation as well as with a purpose of building an important link to their past. Besides building on body and mind health the game is strengthens the social bondage among society.

Every individuals' role in the society is acknowledged as equally contributing to building resilient communities – and fulfilling roles like caregiving, parenting, serving as community elders as mediators for peace building and reconciliation, and so on. Building on this trend, the district has formed a transformative leadership model that is based on adaptive learning and inclusivity, that highly promotes not only participatory justice but the ownership of people by actively involving them in the transformation process. Wonsho townhall is open every Saturday so that a new investor can outline the nature of its business and where the city elders, women and youth group can critically discuss their proposal. It is only if this citizenry base is satisfied that the Townhall sends its recommendation to the Trade Office to enable the investor to get its business license. This way producers involve consumers in their production process to understand the need, the quality and the quantity of products and services.

That is how Martha, a female entrepreneur got an approval of the council for her water consumption measuring technology gadget. The tool is designed to measure the amount of clean water consumption as well as recyclable water that is used for cleaning, sewage as well as irrigation purpose by each actor. The technology was approved by the council as it aligns with the district's water management action plan that defined the quantity of clean water use at household level, institutions, service providers like schools and hospitals. This way the community will have secure water reserves. The community representatives were not convinced in the beginning about the technology as they were concerned that it might affect their ethical value of a trust-based way of living. It felt for them that this technology is sneaking a look at everyone's actions. Finally, they understood and agreed that the technology is about making the follow up easier as well as a way of providing an accountability platform and ensuring the community's water supply.

To control overproduction and overconsumption, businesses and enterprises have to comply to a rule that requires them to produce limited amount of products only to distribute within a defined distance range of the district. Besides promoting an efficient use of resources and

carbon footprint reduction, this arrangement provides a fair and equal business opportunity for all businesses. The rule is focused on promoting collaboration over competition, which, in turn, reduces cost but increases income. Every distributer has a mandate to sign a Memorandum of Understanding (MoU) with buyers regarding the collection of recyclable materials for waste management, therefore the defined distance of distribution strengthens this action as to closely follow up on this practice and lesson the effort and energy use around recollection. This places accountability and ownership of actions at the centre of a business package, in particular on integrated waste management and sustainable consumption. The Town's Consumer Protection Authority has the mandate to regulate product flow and place caps on the amount of supply of materials into the village to counter the propensity for overconsumption.

Roads are constructed in a way to make it fit the local system: the use of bicycles and motorbikes outnumbers cars and city buses. Most roads are built between mountains and rivers, therefore, this makes two wheel vehicles preferable than four wheel cars. Besides, the tax for fuel-propelled motor vehicles is very high, discouraging their use within the city.

Internet is accessible to all and this has made information close to everyone's doorstep, especially for schools. Schools are designed to incorporate innovation, science & technology that provides a space to practice innovation by taking traditional knowledge as a base, this also addressed the number of youth flowing into big cities searching for better education. The education system uses community-based teaching and learning approach that nurture students' critical thinking, collaboration with one another and guides them to fit into the diverse cultural and ecological setup. This approach combines the formal and informal education components that enables students to discuss, talk, and think together with the community for demand-driven contributions.

Story telling pool is also another medium of education designed to bring elders together with children and youths to facilitates knowledge and history transfer to younger generations with a thought of well-informed future leaders. This provides youngsters with a new spectacle that shapes their view of the world and development, in regards to correcting a misconception that overconsumption is an indicator of wealth resultant to developing a responsible and accountable young generation of its time.

Discussion: Traversing the Consumption conundrum

The current discourse of sustainable development predominantly hinges on the assumption that one of the core reasons for unsustainability is overconsumption. Policy tools emerging out of this assumption tend to generalize global over-consumption behaviour patterns and conclude that unsustainable development can be overcome through changes in lifestyles. This assumption essentially neglects an important segment of society that is struggling to meet the most basic needs and emerge out of a near poverty line status. While focussing on the global wealth terrain, it rules out a booming middle class in Africa and Asia with a growing trend of consumption patterns modelled according to the pattern of the so called developed, or "industrialized nations".

Owing to the existing global discourse, this societal class is increasingly considering sustainable consumption more of a Western concept outside of its concern and preoccupation. African and Asian governments are pooling their energy and resources to overcome challenges they consider are important – food security & poverty alleviation – without regard that the change in economic status of their people could one day trap them in the same cycle of overconsumption and resultant unsustainability which the western world is currently in.

The developing world has to figure prominently in the calculus of sustainable consumption and production, which currently is anchored on the assumption that the main driver of unsustainability is overconsumption of resources. We need to direct our attention to the neglected aspects of our current calculation and emphasize how that "today's underconsumption is tomorrow's overconsumption" unless measures are taken and appropriate translating instruments are provided accordingly.

Leap-frogging into Sustainable Living Futures:
With this context in mind, African governments should re-direct attention to bottoms-up solutions built on governance structures that incentivise local innovation, which is **wellbeing based development** - that could be a vehicle not only to ensure sustainable development but also a tool to promote transition to more responsible and sustainable way of living. Solutions should be based on indigenous know-how that hinges on using regenerative natural resources. This averts the trap of the development trend the world today inherited which is based on the hitherto resource intensive development pathway modelled according to the trajectory pursued through overuse of non-renewable resources. This also goes hand-in-hand with the production system, which most of developing countries are shifting away from brown economy to greener economy which aims at making the socio-economic practice more efficient and effective. Whereas, more attention given to the production system, the

consumption practice and consumer part has not been given attention in parallel to production practices.

Sustainable way of living:

The dynamic nature of sustainability makes transitioning to sustainable consumption complex and requiring actions at different levels, scales, and time horizons. It touches all dimensions of development pillars from short term actions at micro-scale to macro-scale and long-term visions. It becomes even more complicated when it comes to developing countries like Ethiopia where 24% of the population live below the national poverty line and labelled as under consumers not only in terms of quality but also quantity. In addition to 21.5% of middle class that is on the rise with growing trend of consumption patterns that almost replicate those of industrialized countries. Striking a balance between these is a most crucial aspect to ensure long term sustainable vision or envisioned result, while the pace of transformation is taken into consideration.

The reason why the on-going measures to reduce overall consumption and to change the trend of consumption is challenged because of the broken system that lacks the capacity to meet individuals' basic needs as well as the space to enable individual aspirations.

Transitioning Instruments:

Wellbeing based development that starts at micro-scale and is grounded in the context of respective culture and ecological systems – this is a bottom-up strategy for sustainability. Wellbeing is different in time and space, for this purpose wellbeing based development defined as: a system that *strives for the continuous fulfilment of basic human needs and aspiration of people within the limits and possibilities of its resources and available external opportunities.* This development is measured by the improvement achieved in terms of building the wellbeing of the society. It acknowledges human and natural capital but not only produced capital. This gives a room for organic and home grown local to national strategies while also supporting adaptation to complex dynamics.

Conclusion:

Envisioning future sustainability viewed through the wellbeing scenario is needed for inclusive result. Countries like Ethiopia are better positioned to incorporate sustainable elements in their policies and action plans as they are in the process of transformation that gives a huge scope to take sustainable measures from a start. As promotion of sustainable way of living involves peoples' willingness, that requires a mind-set shift that again requires to escape from the information and images that the society are being fed about development, wealth, and modernity.

Reclaiming Citizenship – A Tale of Informal Recyclers in Reciclopolis – Sonia Dias

Paloma started waste picking at her city´s dumpsite when she was seven years old as way to help her parents. At the age of eighteen she married a construction worker. She lives with her two sons, her daughter in law and grandchildren, and her husband in a shanty-town. Her eldest daughter is temporarily living with them, making that 12 people in the house. Her daughter- in law is following in her footsteps by working at the dump. Paloma´s dream is that her grandchildren will be able to go to school and have other options in life. Her sons and husband don´t have a formal job – they usually manage to work for approximately 10 days a month (and if they are lucky, they work15 days) in construction work. As a result, the family relies mainly on Paloma´s income.

Paloma´s house is simple, colorful, and crowded. As one arrives in the hallway there is a half- open room that serves as a living-room, kitchen and Paloma´s bedroom (a kind of communal room). There are deep blue walls painted with mustard and red flowers, and other naïf motifs. This area leads to two bedrooms where her two sons live with their wives and children. Paloma stores recyclables she does not manage to sort at the open dump in the hallway so that she can later, with the help of her family, sort them and sell at the junk shop next door. Every time she passes by the hallway she dreams of having a proper place for sorting and storage of recyclables because the smell and the insects the garbage attracts is not pleasant.

At the end of this hallway there is a multi-purpose area that has right in its entrance a small wood fire where water is boiled all day long for all the services of the house – for cooking, bathing etc. It also serves also as bedroom for Paloma and her husband. Opposite this room is a small toilet area. Adjacent to the wood fire is the water pump – this is where the family does their washing up, laundry etc. The house also has a small room that serves as a bathing area – they take buckets of warm water to bathe as they do not have a shower.

Paloma works 7 days a week in the open dump. Every day she is already up by four in the morning. She drinks tea and eat yesterday´s bread. The temples across the shantytown begin their morning cries. It is very windy and cold usually at this time of the day, so Paloma wraps her head in a scarf as protection for her ears, gets a lantern and hurries through the dark streets to get an informal taxi to take her to the open dump.

As she arrives at the dump it is still dark…In fact, one can still see the moon shining over the dump. Crows fly left and right, swooping past her and the other fellow waste pickers.

As she slowly walks up a path that leads to her work area, she is surrounded by ferocious dogs - 30% of the work injuries in this dump is from dog bites. She read this information about the risks from such injuries recently in a newspaper, but shrugs it off as she needs to make enough that day to put food on the table for 12 people. The work area is already crowded with pickers and one can see the city lights flickering down there.

Paloma works steadily picking whatever she can. At 9:00 the first trucks from the city arrives with waste from the day´s collection – the earth trembles each time a truck passes by and Paloma is reminded of last year´s landslide when she lost a few colleagues.

A couple arrives with a manual cart in which a little girl stands on top of it and sets it near Paloma. The couple both begin sorting through the piles of materials and leave the cart with the child behind – every now and then one of them comes by to check on the child. Paloma too keeps an eye at the child.

By four o´clock Paloma sells what she managed to collect at one of the many junkshops that surround the dump and sets off back home with materials she did not manage to sort through during the day. She arrives home, takes a shower and starts the sorting the additional materials with her husband. Usually after sorting these materials at home, Paloma goes to the junk shop to sell the recyclables and then to the market to get vegetables for dinner, but today is a special day – she has a meeting at the newly formed cooperative.

Last year there were lots of layoffs in the main factories so many people had to come to the dump to find work. Amongst the new-comers there was a trade unionist who started to get the dump pickers to meet and talk about their work conditions, including their contributions to the environment and demands. They soon decided to form a cooperative to be able to represent their interests with the city. This is Paloma´s first meeting with city officers – she was chosen to voice waste pickers concerns. She tells officers: *I have been working at the dumping ground since the age of seven. My parents picked waste for a living, and so does my daughter-in-law…There is less waste and less money now and more waste pickers. We are struggling to access the waste, especially most of it is going to the new company. Door to door collection has now started and we have not been included in it. The new company the city contracted out employs outsiders for work, but they do not employ us, why is that? Our sons know driving too, why not employ them? Why not hire our cooperative to do the collection and sorting of recyclables?*

Unfortunately, the waste pickers demands are met with disdain. However, the cooperative was able to attract the attention of an environmental organization and fought on by organizing some rallies and sit-ins. An year later, the waste pickers managed to get a

dedicated space in the dumpsite in a safer area where they could sort and store their materials. Paloma was relieved, she no longer needed to take materials home for sorting.

Five years on, by 2018, Paloma and her fellow waste pickers already have a new discourse. They call themselves "environmental agents" and are often found speaking about the circular economy, zero waste and workers' rights. They know that their city´s opulence, in which people throw away things to make room for new unnecessary things, is eating up the planet´s resources. As a result, they they are now advocating for zero waste programs. As the city begins to talk about plans to close their open dump the waste pickers´ coops proposed a Zero Waste program in which they would be hired to provide door-to-door collection of recyclables, composting of organic food, and they hope to pass a zero waste law at the municipal parliament.

In the meantime, the waste picker coop was able to join a cooperative bank in their city. The bank works like a cooperative – members participate in meetings and receive a credit line. The credit line is not only for the waste picker coop, but for the individual waste pickers. Every year there is a bonus that goes towards the cooperative. And every ten years there's a very large bonus for the cooperative. That big bonus has not arrived yet, but the plan is to keep it within the cooperative rather than distribute it in order to have working capital for the cooperative. The waste picker coop is interested in sustainability right now. Access to individual loans allowed Paloma to build a proper bathroom at her house and to introduce other improvements.

The future is here: it is 2023 and the waste pickers coop and their allies managed to pass a legislation, mandating that all recyclable material must go to the recycling cooperatives hired as service providers with proper commercial contracts. Paloma says, "We fought hard for the legislation, meeting many times with the municipal government for many years to make it happen".

It is 8:00 now and one of the coops trucks collects at downtown stores and houses. This truck is driven by coop members who are paid through the contract the city signed with the waste pickers coop. Four waste picker women collect from the downtown stores, one of them is Paloma. The business owners were trained in source segregation by coop members hired to do environmental education. Every day in the morning the waste pickers go to the downtown stores and retrieve a big bag that the store has filled with recyclables. The waste pickers empty the bag into the truck and return the bag to the stores. In addition to source segregation collection coop members have a composting plant, and a recovery centre for furniture and other bulky items.

We fast forward to 2030: Paloma is getting ready to speak in the municipal parliament as the city is reviewing the impacts on the lives of formerly dump pickers since the integration policy began. She tells MPs how being integrated in the door-to-door collection of has provided cooperative members with a stable monthly income, particularly through the contract signed with the city. Workers no longer depend on social assistance grants to make ends meet. Paloma also mentions how this has brought dignity to her daily life. In the past, she and her family would struggle to make ends meet and were often concerned about being able to buy enough food for the family. Nowadays, they have enough to even buy some fruits. The integration in formal solid waste systems has also led to important improvements in the waste pickers' overall work conditions: they have a sorting center designed to meet their work needs and specific work processes for handling waste, ergonomically designed carts, buckets and sorting spaces, uniforms, and individual protective equipments such as gloves, masks and boots. They also received several training courses on the importance of using such protective gear as a result of handling certain hazardous materials. The cooperative has recently opened a plastic recycling plant to do semi-processing of plastic into pellets. They plan to introduce other technologies that will enable them to move up in the value chain. Workers´ health is a major concern thus capacity building programs to reduce risks is a permanent feature of the work. The children of cooperative members have access to quality day-care centers near the workplace and can apply for education scholarships. Easy access to credit has allowed many waste pickers to make improvements to their homes, while some have gone on to become home owners. Paloma also emphasizes how being a cooperative member has brought her a daily sense of purpose and belonging. She recalls the brutal hardships of working in the open dumps and being exposed not only to harsh work conditions, but also to a feeling of isolation. At times the competition for materials was also a grave concern for her own safety. At the cooperative, the women and men have worked hard to implement fair decision-making processes and to provide all members with access to information. The cooperative is a safe haven for Paloma, one she commonly calls "her second home".

In closing, Paloma reminisces about the invisibility waste pickers became accostumed to in the past and reflect on the current path towards sustainability: *as informal recycler, we manage to reclaim recyclables such as cardboard, paper and glasses which contribute to the protection of natural resources such as energy and water. This means that we contribute to green jobs. What we do is in fact a public service because it expands the life span of landfills and contributes to feeding industries with raw materials for their products. And that´s why we have earned support, recognition, and respect from the city. But we were invisible in the past and so were waste issues. Now our city's citizens need to ask themselves: how much do we produce?, do we recycle what we produce?, do we repurpose or reuse it? Do we protect the livelihoods of informal reciclers? The the answer is "Yes"!*

This is one of the reasons why our city has earned the well- deserved title of "Reciclopolis" because we are on the road towards sustainability.

A week in the life of Andy, Jude and Maya

Manchester, 2037

When we see visions of the future we often don't recognise our own lives in them, the picture seeming too far removed from the present day for us to begin to imagine ourselves in it or how we will get there. We want to present a vision that is recognisable but different. To draw attention to the little things which although small on their own, signal significant social, political and economic shifts; shifts that we need support and demand for if we are to create a future that is healthier for us and the planet.

[imagine the following is one of those family planners on the wall - all hand-written fonts, important things circled, etc. weekend taking up three days not 2. Perhaps pictures of the Dad (Andy), Mum (Jude) and Maya, their 12-year-old daughter at the top of the columns. A to-do list on the right is a device for making their lives look less hectic and more realistic.]

Family calendar. A week in the life - February 2037

Family calendar. A week in the life - February 2037

		Andy	Jess	Maya
Mon 9th	am	WORK – in office 8am library meet for jog to work. Check Martyn can make it	WORK – London E-taxi booked for 7am – train 7.15	PE – take kit
	pm	Maya – school pick up Cooking fish curry for monthly meat treat	London	
Tue 10th	am	DAY OFF Virtual repair workshop – wonky washing machines.	WORK - Community co-work hub	monthly holo-chat with the cousins – 4pm
	pm	Maya – school pick up	6pm meet Granny at Central E-coach hub terminal 7	
Weds 11th	am	WORK - at home	WORK - Community co-work hub holo-chat – 4pm	Remember old clothes for forest-school day
	pm	Maya – school pick up		
Thurs 12th	am	WORK – in office, bike in so can pick up veg box on way home	WORK – at home 2pm Aquaponics service people due. Make sure Flat committee has left rooftop key	Geography project due in – "Effect of the vegan revolution of the 20s on rainforest revival"
	pm		Maya – school pick up	M's football night – Granny guest coaching.
Fri 13th	am	WEEKEND!!		
	pm	Roof top Flat community event 7-8pm – Gary leading a star-gazing session		
Sat 14th	am	Watch Manchester vs Wimbledon at the Kings Head	Attenborough Geocache challenge - Woodhead Reservoir (pick up mountain bikes from Library of Stuff)	
	pm	Mum and Dad date night – surprise (dress warm!!).		Sleepover at Jamie's
Sun 15th	am	LIE IN!!!!		
	pm	Family viewing night: Coral Quest on VR flix		

To Do List:

* Help put up Dorothy's shelves at No 26 (remember to rent a drill from the library of stuff)
* Pick up community veg box before Weds (pls no more Jerusalem artichokes!!!)
* Holiday research: Barcelona – see what Sharing Cities has to say. Book Cheetah train asap to get super saver on cabin
* Arrange school shoe swap for Maya - size 5 getting too tight
* Yearly water allowance payment due soon: check account with Flat committee

Excerpt from Andy's diary (ripped out page)
Monday 9 Feb 2037

Really enjoying the jogs into work now the snow has finally cleared up – if I wasn't meeting Martyn I would definitely have taken the tram instead last week! What a sight when you get towards the bottom of London Road, all those joggers and cyclists. I always find it so hard to believe when Jess says the old A6 used to be rammed with traffic when she was younger, quite a different scene now with the cycle highway and the allotment strips down the middle.

Work's pretty fun at the moment – we've just been given a load of old materials like slate roof tiles from pre-solar days and old petrol car chassis – can't believe how heavy they made them! We're thinking of turning the cars into sleeping pods at Manchester International terminal – a sort of micro hotel for people getting early hi-speed Cheetah trains to Europe. I'm looking for something interesting to make Dorothy some shelves – she is such a sweetheart, still going strong at 98 but glad I stopped her trying to make them herself. Will try do that tomorrow afternoon as nothing else planned for my day off. I often wonder if Jude minds working more days than me, she is one of the few people I know who still does a full 4 day week, she does love her job though!

Saw on the news that they've finally worked out a decent credit system for the new solar planes. Must save up for a hiking trip to go to the US - that VR-flix programme on Yellowstone blew me away. We've got Barcelona to look forward to in the autumn, I've found an amazing house swap, just need to sort the Cheetah tickets - Maya loves the cinema car so we can enjoy a glass of wine and some tapas in our cabin in peace!

Pretty chuffed that I've not only remembered Valentine's day this year but that I've also got tickets to the Rolling Stones "Never Retire" tour - at Mourinho Memorial Hall! Jess is grumpy because I told her to dress warm for our evening out as a decoy so she probably thinks I'm going to take her on a bike ride or something!

Better go now - I promised I'd teach Maya the secret of my "Special Dad Curry" for monthly meat night tonight – will have to add the ready-mix jar whilst she's not looking.

A SURPRISE REUNION

Models: Balbina Nyamakura, Nontsikelelo Mngqibisa, Faghmieda King

Photography: Michael O'Kennedy

Concept: Blake Robinson

7:45AM Meet Bini. She is a freelance designer in Afritopia's growing fashion industry. She lives and works in the city, and enjoys her 5 minute walk to work in the shade of the acacia trees each morning.

8:00AM Today, she doesn't have any meetings until the afternoon, so she spends her morning catching up with e-mails using free public WiFi, whilst charging her mobile device in the sun.

11:00AM In need of a morning caffeine boost, she stops in at a small owner-operated stall to buy a cup of locally-grown coffee. As she reaches for her mobile device to pay, it starts to ring...

It is a surprise call from her friend Nonnie who she met via her online study group 5 years ago. She is in town and wants to meet up this afternoon! They agree to meet at a rooftop garden in the CBD.

11:15AM Nonnie doesn't know the city well, so she uses one of the handy AI information terminals to find some traditional local food for lunch nearby, and work out her travel route for the afternoon.

agree to meet at a rooftop garden in the CBD.

12:30PM Nonni stops in at a government kitchen near the station, and decides to get a combination of three of her favourite local dishes – packaged in a re-usable container

13:00PM Nonnie meets Bini at the electric bus stop downtown. The two hit it off immediately!

Even though they have only ever interacted online, they have a lot in common, and are soon catching up as if they were long lost friends.

13:30PM They find a scenic spot and catch up over lunch. There is so much to tell, but before long it is time for Bini's afternoon meeting. They agree to meet up at the park later.

17:30PM Nonnie meets Bini outside her modern apartment building in the heart of Afritopia's CBD. Although the apartment is small, it has great communal facilities and the location is very convenient.

Bini tells Nonni about life in the city, and how the government has made it easier for young professionals to live closer to work. She is saving a lot of money each month by walking and cycling instead of having to own a car.

The two friends join the afternoon pedestrian commuters on the central boulevard. They soon arrive at the park.

18:00PM Whilst enjoying the last of the afternoon sun at the park, Noni drops the big news that she is moving to town and is looking for a place to stay.

As luck would have it, one of Bini's housemates has been deployed to Mombasa to help with the Seychellian refugee crisis, and there is going to be a spare room in her apartment.

Nonni goes back to Bini's apartment to meet her housemates, and before long she has new friends and a new place to live! Not bad for her first day in Afritopia!

Conclusion

The path ahead for humanity is daunting: the need to make a rapid – and just – transformation of all of our society, economic, infrastructure and daily lives to address climate change and live within One-Planet. It is daunting but not unimaginable. In fact, it is critical that we imagine how this change could look, feel, and be for the billions of people alive today and the generations of human and other species to come. This report and project recommend an expansion of our visions and scenarios of sustainable living futures into areas that are currently overlooked and yet critical for catalyzing a sustainability transformation.

Analysis of limitations and research gaps

There are a number of areas that are ripe for further development and research. In terms of the content of future visions and scenarios, there are gaps in depicting the financial system, vastly different allocations of time use, and the futures of work and livelihoods. There is an underrepresentation of futures led more by women and influenced by the emerging recognition of fluid identities around gender identity or expression. A key challenge is the depiction of non-consumption and reflecting sufficiency living in ways that acknowledge how overconsumption choices and habits are no longer dominant.

Advancing the role of futuring in catalyzing sustainability also requires further analysis and work on the process of futuring itself and other ways of engaging. Envisioning as a process can have great value as a tool for social empowerment and participatory democracy. The visualizations in this project were co-created with the project team and Advisory Group; however, additional sustainable living futures visions and scenarios would be greatly served by a participatory process that engages citizens in co-creating futures.

Implications for Stakeholders, Policy, Pathways and Practice

The insights from this project and the development of the sustainable living futures collection opens the possibility to formulate of pathways to future lifestyles including policy packages and on-the-ground experiments. There are a number of implications for stakeholders. The first is to engage diverse communities in the creative, accessible and compelling visioning of futures and direct dialogue and deliberation about these futures. In particular, combining desirable futures back-casting across diverse scenarios provides a baseline to collectively anticipate, explore and take action on sustainable living.

Imagining Sustainable Living for Transformative Action

At this critical juncture in history, we not only need to be guided by an evidence-based understanding of the nature of the challenge but also the imagination of what could be. This

project highlights how filling gaps in our collective imaginaries raises our sights to the fundamental nature of the problem and how the stories we tell ourselves can catalyze transformative actions.

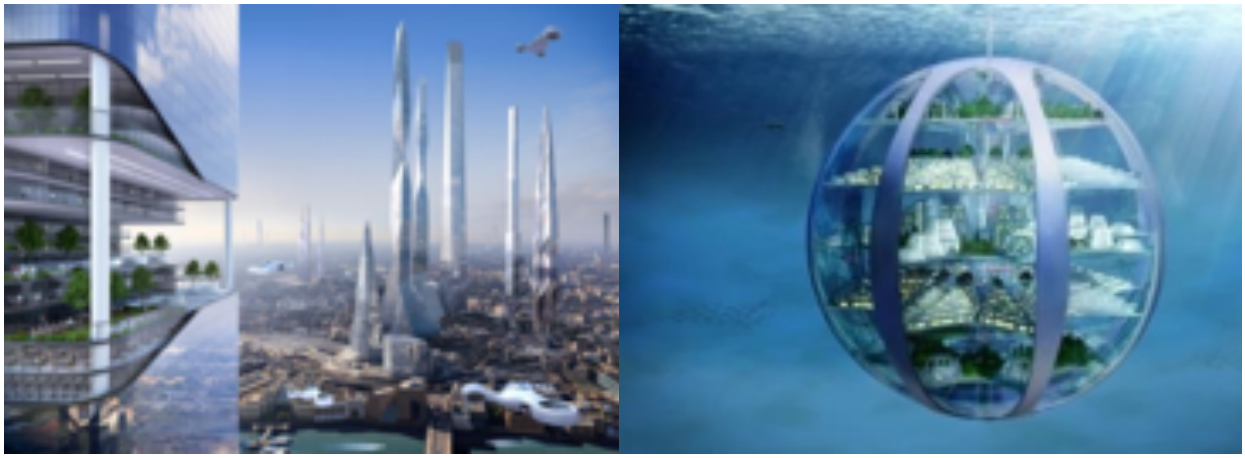
Appendix A: Four Futures Tendencies

Smart green techno-living

Gadgets – ways to support a busy, high consumption life
'Smart' cities
Circular industry clusters
Often companies or city networks

SmartThings Future Living

Samsung
Imagining the high tech future of urban living



Samsung's SmartThings Future Living Report explores how technology will continue to change the way we live. It predicts super skyscrapers, earth-scrapers built into the ground, underwater cities, flying cars, 3-D printed buildings, furniture, and food, and AI permeating all aspects of life. The vision is heavily reliant on technological solutions to the challenges of sustainability, particularly through renewable energy sources and closed-loop material flows.

Critique: This future vision is exceptionally branded and takes an unwaveringly techno-optimistic view of the future. It does not adequately place real people within the vision, featuring technology, gadgets, and infrastructure to the exclusion of almost everything else.

Links:
https://wewanttolearn.files.wordpress.com/2016/03/future-living-report.pdf https://news.samsung.com/global/science-fiction-to-science-fact

City of Tomorrow

Ford Motor Company
Imagining the future of urban mobility

The City of Tomorrow explores how autonomous electric vehicles, ride sharing, and other near-term mobility innovations could affect urban life. Reducing the environmental footprints of cities is an overarching theme of the project, especially in relation to traffic and air pollution. It addresses infrastructural challenges and takes an ecosystems approach to the transit space.

Link:
https://corporate.ford.com/innovation/city-of-tomorrow.html

Smart Nation Singapore

Government of Singapore
Using digital technologies to enhance urban life

Smart Nation Singapore seeks to enable people to live more powerful, meaningful, and fulfilling lives by leveraging digital technologies. Such technologies provide opportunities for individuals and businesses to enhance their strengths, overcome challenges, and develop new ways of prospering.

Links:
https://www.smartnation.sg/
https://www.smartnation.sg/docs/default-source/default-document-library/smart-nation-strategy_nov2018.pdf

Post-Fossil City: African Alternatives

Blake Robinson & Karl Schulschenk

To explore scenarios for future sustainable cities in Africa

The smart city represents a vision of the future akin to those crafted by multinational technology companies and real estate developers, aimed at positioning African cities as a new space of opportunity for the world's elite. This is a city of high security enclaves served by "smart" technologies that seamlessly integrate renewable energy, robotics and private mobility to optimise the convenience of those who can afford to live there. In order to protect the safe and sanitary environment enjoyed by its users, security checkpoints are a way of life. The poor are relegated to living in unserviced informal settlements between wind turbines on the urban edge, or begging on the streets (when they manage to sneak into the city). This city may combine best practice from around the world, but largely ignores what the local context has to offer. Although the modernity and ambition of this city stirs pride in many residents, its promises of a better future for all are hollow as it does little to improve the lives of those living in ever-expanding slums.

Links:
http://postfossil.city/en/finalists/african-alternatives

Sustainable urban and rural design

- Literally green with trees, plants and living walls,
- Focused on green buildings, mobility (bikes, transit, ev cars, walking), energy system, vertical farming, industrial clusters of green industry
- Often for the rich and elite – separately planned
- Unclear how people are living their lives in these futures

Liuzhou Forest City, China

Liuzhou Municipality Urban Planning
Tackling global warming by covering buildings with plants

Forest City, China aims to be the world's first 'forest city' where all buildings are covered in plant life to tackle global warming and air pollution. The city will be covered with 40,000 trees and 1 million local plant species. Planners anticipate that the plant cover will reduce average air temperature, create noise barriers and provide habitat for insects, birds, and other small animals. The city will be linked to a larger metropolis by a rapid train service.

Links:
https://www.stefanoboeriarchitetti.net/en/project/liuzhou-forest-city/
https://www.dailymail.co.uk/news/article-5072693/The-city-trees-China-creates-world-s-Forest-City.html

New York City Steady State

Terreform Inc.
Exploring whether New York City can become self-sufficient

New York City Steady State is a response to the growth of urban population and the increase of food insecurity. The project imagines New York as a self-sufficient area, producing much of its own food and reducing its ecological and carbon footprints. Farms are envisioned between and on top of buildings, and meat production towers, vertical farms, and food growing cells are imagined throughout the city.

Links:
https://www.terreform.info/nyc
ss/
https://www.lushome.com/green-ideas-turn-new-york-city-efficient-urban-farming-area/74456

Zibi, Canada

Dream Unlimited and THEIA Partners
For what purpose?

Zibi is a planned community situated on a river island between Ottawa and Gatineau, Canada. It is made up of thousands of acres of waterfront property and will house luxury accommodations and retail spaces in the heart of two cities. Zibi's development plan will result in a community that lives within the One Planet Community guidelines, including zero-carbon energy, reduced GHGs from transportation and near-zero waste generated.

Critique: While this plan achieves many sustainable development objectives, it is likely to result in a community that is expensive and effectively excludes many from lower income brackets.

Links:
http://www.zibi.ca/
https://www.bioregional.com/zibi/

Future Los Angeles – Urban Agriculture Plan

Los Angeles River Revitalization Corporation

Creating urban agricultural land at the heart of sustainable neighbourhood

The Urban Agriculture Plan addressed the communities around the Los Angeles River, which are characterized by unevenly occupied industrial, commercial and residential properties. The Plan, which looks at 660 acres, is concerned with transforming the area into a healthy, sustainable neighbourhood with urban agriculture.

Link:
https://nextcity.org/daily/entry/los-angeles-design-urban-farm-la-river

Eco-communities

- alternative housing design – including co-housing and earth houses
- walking with some bikes and transit
- urban gardens
- social connectivity and sometimes diversity

Tamera Peace Research Village

TAMERA, Healing Biotope 1
Creating a sustainable, peaceful model of living

Tamera peace research village works towards 'a self-sufficient, sustainable and duplicable communitarian model for nonviolent cooperation and cohabitation between humans, animals, nature, and Creation for a future of peace for all.' The village focuses on community building, energy, ecology, cooperation, and building its international network. Many educational and tourist programs are run at Tamera and provide the bulk of the funding for the project.

Critique: This is a classic eco-village concept and falls into many of the usual traps – difficulty scaling, limited capacity, and reliance on wealthier people spending tourist / workshop dollars to keep the lights on. While it has not failed, it has also not succeeded and may be stuck in place.

Links:
https://www.tamera.org/
https://ideas.ted.com/is-this-portuguese-eco-village-a-21st-century-utopia/

Dome Village and Mentigi Bay Dome Villas

Dome Lombok

Creating an eco-village and resort

Dome Village and Mentigi Bay Dome Villas present a highly stylized aesthetic version of an eco-village. The houses and buildings are reminiscent both of 1960s minimalist architecture and futuristic visions of housing on other planets. The Village and Villas are both a community building project and a luxury Eco-Resort featuring permaculture gardens, farm-to-plate restaurants, co-working spaces, and yoga and artist studios. Construction, power, food, and waste are incorporated into a sustainability ethos. Lombok Village targets wealthier investors and tourists on a 50-year lease model that allows sub-letting with profits shared between Lombok Village and the leaser.

Link:
http://www.dome-lombok.com/

Mafraq Domes

Hamad Nazzal

Creating Natural, Healthy Homes

Mafraq Domes, located 60 km northeast of Amman, Jordan, uses traditional local building methods to create earthen dome houses. The project is designed to demonstrate an environmentally friendly and cost effective alternative method of constructing houses in a country that is heavily reliant on concrete and cements.

The dome house designs are inspired by cutting edge environmental practices, making use of natural lighting and heating solutions and aquaponic gardening.

Link:

https://www.facebook.com/groups/1099689303401001/

Living green expos / trade shows

Gadgets
Domains separately
Individually focused

Green Living Show Canada

Green Living Show

Creating urban agricultural land at the heart of sustainable neighbourhood

Canada's Green Living Show is North America's largest green and healthy living exhibition. Each year it hosts more than 400 exhibitors selling green and sustainable alternative products and services. The Green Living Show also champions many sustainable and healthy living objectives such as movement toward a plastic free future, shifting supply chains toward zero waste and closed loop systems, and making gift giving more sustainable.

Critique: While the Green Living Show does a good job of featuring green and sustainable alternatives to traditional products and services, it does not seem to do a great job of addressing the issues clustered around over-consumption. It remains organized around acquiring things and drawing in as many consumers as possible.

Link:
https://www.greenlivingshow.ca/

Living green expos / trade shows

World Future Energy Summit

Masdar

Promoting sustainability innovation, knowledge exchange and policy making

The World Future Energy Summit, held annually in Dubai, brings together industry, policy, and research leaders in the areas of energy, water, waste, solar, building and mobility to demonstrate products and policies, and exchange knowledge on sustainable technologies and practices. There is a heavy emphasis on engineering and business solutions to the challenges posed by climate change. More than 33,000 people attended in 2018, and over $15 billion in projects were announced at the Summit.

Link:
https://www.worldfutureenergysummit.com/

Living green expos / trade shows

EarthX Eco-Conference and Exhibition

Mission:EarthX

Celebrating Progress, Hope, and Innovation

The EarthX eco-conference and exhibition, first held in Dallas, TX in 2018, is the largest of its kind in the world. It is comprised of a 3-day expo, a five-day group of conferences, and a 10-day film festival. EarthX provides a variety of conference venues for academics, professional experts, and policy makers, as well as welcoming consumers and interested individuals to its EarthXExpo space. EarthX offers six distinct experiences for its guests to sample from: Home, Health & Active Lifestyle; Academic, Culture & Community; Technology & innovation; Natural Resources & Conservation; Policy & Industry; and Children & Family.

The EarthXExpo features hundreds of exhibitors across the full range of sustainable products and services, as well as representatives by activist and advocacy groups. It also hosts many educational opportunity for attendees that offer insights into green living and sustainability.

Link:

https://www.earthx.org/

Appendix B: Futures Case Studies

One Planet Living

BedZED eco-village, the flagship one planet community developed by Bioregional in the United Kingdom, is a living vision of a world in which people enjoy happy, healthy lives within their fair share of the earth's resources, leaving space for wildlife and wilderness.

The BedZED community was initiated by Bioregional, developed by The Peabody Trust in partnership with Bioregional and designed with architects, ZEDFactory (also based in BedZED) and Arup engineers. It comprises 100 apartments and houses, and approximately 2,500 sq m of office space. It aimed to be the world's first large-scale, carbon-neutral housing complex.

An entire network of One Planet Living communities has grown from the experiment of BedZED. Globally, 20 communities have joined Bioregional's network, developing neighbourhoods and communities guided by a One Planet Living framework. The One Planet Living framework comprises ten easy-to-grasp principles. Together, these provide a clear, practical roadmap to create a sustainability action plan for any organisation that can engage hearts as well as minds.

Lead: Bioregional

Duration: 2002 – continuing
Funding: Peabody
Stakeholders: Residents

Country: United Kingdom, Global
Level: Neighbourhood / Community
Urban and Rural

Website: https://www.bioregional.com

Tags:
Sustainable living: wellbeing, time, collective, tech dependent
Domains: food, mobility, housing, goods, leisure, health, water, energy
Systems-wide: beauty, culture, social, advertising, politics, economics, markets, physical infrastructure, technology
Constituency: inclusive

Futures
Mode: real-world experiment, principles
# of futures: 1
Method: development process, framework creation, surveys
Participatory, Interactive, Experiential
Artists engaged

Sustainability Filter:
Ecology: Research carried out by Bioregional suggests that BedZed residents emit 40% less carbon than the average UK household, with the largest savings coming from CHP (18%) and the car club (11%).

Economy: Some aspects of the BedZed property faced challenges in terms of making certain technologies cost effective in the current economy such as the water filtration system.

Society: The sense of community is core to the success of BedZed as lifestyle changes support the ambition of achieving One Planet Living.

Our Cities, Ourselves

Lead: Institute for Transportation and Development Policy

Duration: 2010
Funding: ITDP
Stakeholders: City planners

Country: USA, and Global
Level: City; Neighbourhood; Urban

Website: https://www.itdp.in/our-cities-ourselves/

Tags: Cities; Urban; Transportation
Sustainable living: wellbeing, time, collective, tech dependent
Domains: mobility, housing, leisure, health, energy
Systems-wide: accessibility, beauty, culture, social, mobility, physical infrastructure, technology
Constituency: inclusive

The Institute for Transportation and Development Policy (ITDP) created the Our Cities, Ourselves: The Future of Transportation in Urban Life exhibit as a response to the challenges of increasing urban populations. The exhibit is a series of aspirational visions of ten major global cities composed by world-class architects.

The Institute for Transportation and Development Policy has identified urban population growth as a major challenge for the 21st century. As such, the Our Cities, Ourselves exhibit focuses on visions that depict near-future cities that are redesigned away from the car-dependant model of urban sprawl that has dominated the 20th century city. In its place, Our Cities, Ourselves depicts a more human-centred, equitable, liveable, and sustainable urban future.

The approaches taken by the participating architects resulted in distinct visions that were tailored to the specific needs of their cities. Each vision incorporated different modes of transport: walking, cycling, transit, car, and mixed modal. Some locations heavily emphasized one or two modes of transport over the others. For example, Rio de Janeiro, Brazil mostly depicted walking and cycling, whereas Ahmedabad, India and Mexico City featured a more even mix of cycling, transit and personal automobiles.

Futures
Mode: futures visioning
Method: development process, collaborative, expert-driven
Interactive, Experiential
Artists engaged

Better Living

Sustainability Filter:
Ecology: ITDP included reductions in greenhouse gas emissions, especially those directly sourced from transportation, as a core objective of the Our Cities, Ourselves visioning project.

Economy: Our Cities, Ourselves incorporates a view of how sustainable, multi-modal transport can support an equitable, sustainable economy.

Society: The transportation options envisioned by Our Cities, Ourselves are designed around the needs of local people, with each vision presenting mobility solutions that match the needs of local use patterns and economic activity.

Visions & Pathways 2040

Lead: University of Melbourne, University of New South Wales, and Swinburne University of Technology

Duration: 2005 - present
Funding: Australian Cooperative Research Centre for Low Carbon Living
Stakeholders: City planners

Country: Australia
Level: Cities; Neighbourhood; Urban

Website:
http://www.visionsandpathways.com/
Tags: Cities; Urban
Sustainable living: wellbeing, time, collective, tech dependent
Domains: food, mobility, housing, goods, leisure, health, water, energy
Systems-wide: accessibility, beauty, culture, social, mobility, physical infrastructure, technology
Constituency: inclusive

Visions and Pathways 2040 (V&P 2040) is a four-year research and engagement project funded by the Australian Cooperative Research Centre for Low Carbon Living. The project aims to develop visions and innovation and policy pathways for transforming Australian cities to achieve rapid decarbonisation and increased resilience in the face of climate change.

V&P 2040 has developed a four general scenarios for city life in Australia's future: Clean-tech corporate living; Planned regulated living; Community balanced living; and Networked entrepreneurial living. Each of these scenarios was further explored by envisioning high, medium, and low population density variants to reflect different contexts for the thematic scenarios.

Clean-tech corporate living centres on efficiency through the deployment of circular economy practices and clean technology by large, for-profit companies that can afford to innovate. Planned regulated living emphasizes the role of government in planning and regulating urban design and economic activity through technocratic leadership.

Community balanced living envisions low-consumption cities with populations that value the creation of socially and environmentally meaningful lives. The market economy is still central, but is complemented by a thriving social enterprise sector. Networked entrepreneurial living reflects a city that has become highly self-organized. Informal, digitally connected networks play a strong supporting role in economic and political activities, resulting in a great diversity of businesses and technologies.

Futures
Mode: futures visioning
Method: development process, expert-driven

Diverse inclusive

Sustainability Filter:
Ecology: V&P 2040 aims to address climate change through the redesign of cities toward lower carbon footprints.

Economy: V&P 2040 presents a number of different economic scenarios for future cities, reflecting the diversity of city contexts and local cultures. Embracing multiple economic models is a novel contribution from this visioning exercise.

Society: V&P 2040 has at its core a responsiveness to the needs of different communities. Each vision presented approximates a different type of city with a complex set of cultural and economic needs.

African Alternatives

Lead: Blake Robinson & Karl Schultz-Bonk

Duration: 2017
Funding: (???)
Stakeholders:

Country: South Africa
Level: City

Website:
https://openfutures.city/en/finalists/african-alternatives

Tags: Urban; City; Inclusive; Systemic
Sustainable living: Inclusive; wellbeing;
Domains: food, mobility, housing, goods, leisure, health, water, energy
Systems-wide: beauty, culture, social, economics, markets, physical infrastructure, technology
Constituency: Urban; Inclusive

Within the next four decades, the African city population will almost triple. Currently, more than half of the urban population of sub-Saharan Africa lives in slums. Open the curtain to discover two possible futures. Will the African city become 'smart' for the privileged few? Or is it possible to think of a wiser and more inclusive future?

African Alternatives rejects status quo visions of the future of urban development in Africa, moving beyond 'smart cities' to envision 'wise cities'. the wise city represents a more inclusive vision, centred on meeting the needs of all income groups. This is an egalitarian city, where affordable housing is located close to work opportunities to reduce the time and costs of commuting. This is a city teeming with owner operated stores and markets, instead of big name retailers and shopping malls.

African cities represent the single biggest opportunity for the development of post-fossil cities, and cannot be ignored when envisioning our urban future. These cities have the potential to adopt radically different approaches to development that learn from the successes and mistakes of the rest of the world, and combine these learnings with local wisdom to create inspiring cities that lead us into a post-fossil future.

Futures
Mode:
Method:

Better Living

Sustainability Filter:
Ecology:

Economy:

Society:

WBCSD Good Life 2.0

Lead: World Business Council for Sustainable Development
Duration: 2017 - Present
Funding: WBCSD
Stakeholders: Brands; Companies

Country: United States; Global
Level: Company

Website:
https://www.wbcsd.org/Programs/People/Sustainable-Lifestyles/Resources/The-Good-Life-2.0-Playbook-US-Edition
Tags:
Sustainable living:
Optimistic:
Systems-wide:
Constituency:

WBCSD member companies are exploring the innovations that will make sustainable lifestyles possible and how their brand power can make sustainable lifestyles aspirational.

The World Business Council for Sustainable Development has been investigating the role of marketing in addressing sustainability challenges. The Good life 2.0 is the result of more than three years of discussions with companies around the world and presents a vision of how brands can help to redefine what the good life looks like.

The vision presented by the WBCSD is aspirational. It recognises that many current aspirations are not attainable within a sustainable lifestyle and seeks to shift societal aspirations away from wanting more to wanting better. It asks the question, What if brands were to promote aspirations that build on what makes people truly happy?

The Good Life 2.0 Playbook is designed to be used by marketing teams, helping them to inspire customers to live a life that is both more rewarding and more sustainable. It differs from other brand- or marketing-based efforts in that it is not about 'selling sustainability' or sustainable products. Rather, it is about asking brands to rethink the picture of the world that they depict through their advertising.

The current Playbook focuses on the United States. New versions focused on different geographic regions are in development.

Futures
Mode:
Method:

Sustainability Filter:
Ecology:

Economy:

Society:

GreenDependent

EnergyNeighbourhoods
YOUR ENERGY CHALLENGE

Lead: GreenDependent

Duration: 2011 - Present
Funding:
Stakeholders: Individuals, Households

Country: Hungary
Level: Individual, Household, Community, City

Website: http://greendependent.org/
Tags: Individual; Household; Neighbourhood; Carbon Footprint
Sustainable living:
Domains: food, mobility, housing, goods, leisure, health, water, energy
Systems wide:
Constituency:

Energyfleighbourhoods engages households and groups of people who are connected to one another yet spread across a community to work together to reduce their carbon footprints.

'Energy Neighbourhoods' are composed of five – 12 households which come together for at least five months and compete against other groups to achieve reductions in energy consumption. Energy savings are measured and compared against a baseline of the household's past energy consumption. The program, run by GreenDependent, also provides tips on sustainable eating, mobility and free time in creative ways such as putting together a climate-friendly menu or holiday plan.

Each cluster of five – 12 homes sets common objectives such as reducing energy bills and supporting municipal climate actions, and selects a volunteer Energy Master who coordinates activities across households and promotes problem solving and information sharing. Program staff support the households in achieving their goals.

The success of the EnergyNeighbourhoods campaigns has stemmed from its participatory and diverse approach to meeting the needs of households in Hungary. Supporting a diversity of pathways to lower footprint living has broadened the audience and made engagement easier.

Futures
Mode:
Method:

Sustainability Filter:
Ecology:

Economy:

Society:

Appendix C: Additional Futures Resources

This appendix provides an overview of additional futures resources assembled during the course of this project. It serves a reference for those who are interested in other efforts to depict futures to advance sustainability.

Futures Trends / Studies:

IGES Foresight Study -

https://www.pnas.org/content/115/51/12832

Sustainable Living resources

SITRA 100 Ways to be Smart and Sustainable

Climate Change Futures

Look Ahead - San Francisco - a new mobile app utilizing virtual reality technology to provide a more immersive window into sea-level rise impacts and solutions.
https://climateaccess.org/projects
https://vimeo.com/259377524

Post-Fossil City Contest - Imagine a city that is not addicted to fossil fuels. How would that change the way we live, work, and move around the city? The Urban Futures Studio at Utrecht University launched the Post-Fossil City Contest in 2016 and received 250 submissions from people in over 40 countries, ranging from architects to physical scientists, from designers to musicians. The 10 most innovative, inspiring and imaginative ideas were featured in exhibitions in Utrecht, the Hague and Ghent.
http://postfossil.city/en

Artists engaged in Futuring

Ellie Cosgrave - https://www.ucl.ac.uk/news/staff/staff-news/may-2017/09052017-spotlight-on-ellie-cosgrave; **https://www.ucl.ac.uk/steapp/research/projects/choreographing-the-city/**

Smart Cities

Amsterdam Smart City - Amsterdam Smart City is a public-private partnership organised around leveraging technology and innovation to solve the challenges of urban living and urban growth. It uses online platforms to connect and engage with residents and take cooperative action on objectives covering the social, economic, and ecological aspects of sustainability.

https://amsterdamsmartcity.com/network/amsterdam-smart-city

Eko Atlantic, Nigeria - Eko Atlantic, Nigeria, is a privately-funded development of a planned city near Lagos. It envisions a high-tech and high-luxury coastal city on land reclaimed from the Atlantic Ocean. The city is being designed as part of a larger series of projects to stop the erosion of the coastline of Lagos State.

https://www.ekoatlantic.com/

New Clark City, Philippines - New Clark City is a planned city being developed near Central Luzon, Philippines. The city is designed to take pressure off existing urban infrastructure in nearby cities by supporting satellite offices with high-tech virtual connections to the metropolis. New Clark City's plan is based on efficient resource management for materials, water, energy, and waste, and incorporates sustainability as a core principle.

http://newclarkcityph.com/

Technology

Hyperloop Transit System - A hyperloop transit system is a method of transit that occurs within vacuum-sealed tubes that allows trains or pods to travel free of air resistance or friction. The high speed of pods will dramatically reduce transit times. Hyperloop technology was initially developed by SpaceX but was released as open source technology. It is being pursued by several companies around the world.

https://www.tesla.com/en_CA/blog/hyperloop
https://www.spacex.com/hyperloop
https://hyperloop-one.com/

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[i] US Bureau of Economic Analysis at https://apps.bea.gov/itable/iTable.cfm?ReqID=70&step=1. In inflation-adjusted dollars, Connecticut experienced a total of 0.7% GDP growth from 2004 to 2017.

[ii] Rick Green, "By the numbers: What new data from the U.S. Census says about Connecticut," *The Hartford Courant*, 11 December 2018.

[iii] "Middletown, CT" http://www.cityofmiddletown.com/content/773/1778/default.aspx

[iv] Interestingly, "gentrifiers," who chafe against this term, prefer to call themselves "rebuilders." But regardless of the label, this geographic redistribution—whether in booming US cities in the early 2000s, in post-Soviet Moscow, or in well-planned, survivable cities in 2040s America, the shift in demographics almost always bring class and socio-economic tension.

[v] Shawn R. Beals, "Middletown's Forest City Farms Will Grow Into the Future on City-Owned Parcels," *The Hartford Courant*, 21 August 2017.

[vi] "Why Yardfarm? America's future depends on cultivating the next generation to be yardfarmers," http://yardfarmers.us/why-yardfarm/

[vii] "The State of Obesity in Connecticut," at https://stateofobesity.org/states/ct/

[viii] Shawn R. Beals, "FedEx Ground Has Opened a Sprawling Distribution Center in Middletown: Here's What You Need to Know," *The Hartford Courant*, 21 September 2018.

[ix] Clarice Silber, "Regents Approve Plan to Consolidate Community Colleges in 2023," *The Hartford Courant*, 21 June 2018.

[x] Nancy Lee Wood, "Preparing Vocational Training for the Eco-Technical Transition," in Worldwatch Institute, *EarthEd: Rethinking Education for a Changing Future* (Island Press: 2017).