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CONSTRUCTION ENGINEERING

STUDY PROGRAMME: ARCHITECTURE AND URBAN DESIGN

THE ROLE OF ARCHITECTS in a Shrinking Scenario

ENDLESS GROWTH CANNOT BE SUSTAINED

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ABSTRACT

History is readable through the sequence of paradigms that have shaped civilization over the centuries, thus through the different visions of the world that have molded the imaginary of societies. Paradigms development follows a cyclical process, which does not consider an infinite perduration of a single image of the world. Indeed, every paradigm at a certain point enters a crisis stage that induces a paradigm change and a new perspective of the world. Nowadays, growth is challenged by several elements and trends, such as the biosphere limit, socio-economic inequalities, and population contraction. Notably, the latter aspect is incredibly relevant, given that since the beginning of the century, the population fragment that has experienced the positive effects of growth has started to diminish. The role of intellectuals in history has been based on the constant criticism toward the current paradigm regarding its effects and scale of impact. Architects have always acted as active characters in the criticism process, and they have repeatedly attempted to advance observations and new images of the world through their work and research. The present dissertation aims to investigate the role of architects in the current paradigm reconfiguration and their active critical actions that will support overcoming the current paradigm's crisis. The dissertation would conclude with a manifesto about the role of architects in a degrowth scenario. The declaration condenses the reflections proposed over the thesis about the role of intellectuals, and it represents an invitation toward collective actions to generate awareness and responsibility in the architecture field.

KEYWORDS

Degrowth Paradigm; Growth Paradigm; Paradigm Change; Planetary Boundaries; Shrinking Cities; Population Decline; Role of Architects; Social Actors; Future Scenarios; Terrestrial Architecture Manifesto

ITALIAN SUMMARY

La storia è leggibile attraverso la successione dei paradigmi che hanno plasmato le civiltà nei secoli, e quindi attraverso le diverse visioni del mondo che hanno plasmato l'immaginario delle società. Lo sviluppo dei paradigmi segue un processo ciclico, che non prevede la presenza infinita di una singola immagine del mondo. Ogni paradigma, infatti, a un certo punto entra in una fase di crisi che induce un cambio dello stesso, e quindi un nuovo immaginario.

Il ruolo degli intellettuali nella storia ha riguardato sempre la critica nei confronti del paradigma a loro contemporaneo, per quanto riguarda i suoi effetti e la scala di impatto. In questo processo di critica, gli architetti hanno sempre agito attivamente, attraverso una critica degli effetti del paradigma nel processo produttivo della loro disciplina.

Al giorno d'oggi, quasi l'intera popolazione del pianeta è configurata dal paradigma della crescita basato su un immaginario comune che prefigura un aumento perpetuo dei consumi, del benessere, e dell'accumulo di risorse. Tuttavia, il paradigma della crescita si scontra con i limiti terrestri del nostro pianeta, che consentono un certo livello di sfruttamento in base ai periodi di riproduzione della biosfera. Inoltre, il paradigma della crescita ha generato enormi disuguaglianze tra le diverse aree del pianeta, dato che il benessere prodotto dalla crescita è stato sperimentato solo da una piccola parte della popolazione mondiale, in particolare dai cittadini dei cosiddetti 'paesi sviluppati'.

Nell'ultimo secolo, numerosi intellettuali hanno messo in luce le contraddizioni generate dal paradigma corrente, con

l'intenzione di promuovere consapevolezza e criticità nella popolazione. Parallelamente alle critiche avanzate da diversi studiosi, la crescita è stata frenata da diversi fattori, come il limite riproduttivo della biosfera, le enormi disuguaglianze socio-economiche e la contrazione della popolazione. In particolare, quest'ultimo aspetto è incredibilmente rilevante, dato che dall'inizio del secolo, il frammento di popolazione che ha subito gli effetti positivi della crescita ha iniziato a diminuire. La combinazione di questi fattori ha messo in crisi l'attuale paradigma e ne ha sollecitato il cambiamento.

La consapevolezza della crisi del paradigma ha stimolato gli intellettuali a formularne uno nuovo paradigma per mitigare gli effetti negativi della crescita, e parallelamente sfruttare le opportunità aperte dalla contrazione demografica. La concettualizzazione di questo nuovo immaginario è paragonabile a un processo, iniziato nell'ultima parte del secolo scorso, e che continuerà in futuro come critica nei suoi confronti. Nel corso dei decenni, l'accumulo e lo sviluppo di idee e riflessioni hanno generato le basi per il nuovo paradigma: la Decrescita. Le critiche alla crescita hanno avuto due denominatori comuni: la questione del limite e la necessità della scala globale.

La decrescita aspira a ridurre le disuguaglianze e lo sfruttamento della biosfera attraverso una riconfigurazione della cultura che il paradigma antecedente ha plasmato. Con queste intenzioni, gli intellettuali e gli attivisti sostenitori della decrescita hanno individuato due possibili campi di intervento: sociale e tecnico. La prima riguarda il ruolo attivo degli intellettuali nel decolonizzare l'immaginario della crescita

attraverso la generazione di consapevolezza e responsabilità verso le azioni giornaliere, soprattutto nei consumi e nelle scelte di vita quotidiana. La questione tecnica invece riguarda lo sviluppo tecnologico che sosterrà la transizione verso la decrescita, evitando una totale riconfigurazione delle nostre abitudini attuali.

La presente tesi si propone quindi di indagare il ruolo degli architetti nella riconfigurazione del paradigma attuale, investigando come l'architettura e il proprio processo possano contribuire al superamento della crisi del paradigma attuale. Nella definizione del possibile ruolo degli architetti in un contesto di decrescita è stata posta particolare attenzione agli effetti della seconda contrazione demografica in ambito urbano e sociale. Infatti, la contrazione demografica trasformerà profondamente l'approccio e i principi che hanno plasmato teorie e riflessioni urbane negli ultimi secoli. Il fenomeno della contrazione urbana, sperimentato da alcune città nei decenni precedenti, diventerà la tendenza generale per il futuro, pertanto, gli approcci formulati in questi contesti rappresentano un bacino di esperienze significativo per comprendere il ruolo degli architetti in tale contesti. Per questo motivo, le riflessioni sul ruolo dei progettisti sono accompagnate da casi studio riguardanti città in contrazione del passato, che hanno espresso la necessità di una riconfigurazione del ruolo degli architetti.

Al fine di trasmettere dei possibili futuri scenari di intervento in campo urbano e sociale sono presentate due narrazioni, che riguardano il ruolo dell'architetto in future città in decrescita.

In conclusione, la tesi propone un'ultima riflessione attraverso il manifesto dell'architettura terrestre, che rappresenta un invito ad agire collettivamente per supportare una riconfigurazione del paradigma esistente attraverso il processo architettonico.

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PREFACE

an Introduction of the Growth Paradigm

In the course of history, the intellectuals' role has been a continuous contestation of the present. Which in other words corresponds to a continuous critical approach toward the present paradigm.

Preface

THE CONCEPT OF CYCLICAL PROCESS

The process of urban development along history traces a continuous redefinition pattern influenced by the time's cultural, economic, and political conditions. In history, the combination of cultural, economic, and political aspects has shaped the social imaginary of each time, which has constituted a paradigm. Our use of the term paradigm refers to its historical Greek one, παράδειγμα, that can be translated as a particular vision of the world, as an archetype to imagine possible realities. Throughout history, there have been numerous paradigms; religious conservatism is one, Marxism is another. None are correct, but they highlight different aspects of reality.

"A paradigm is also a simplification that helps to distinguish the background noise of the significant trends of one's time (i.e., those defined by one's paradigm)."¹

According to this premise, the history of cities is readable through the history of paradigms that societies have developed over centuries due to external influences coming from a broad spectrum of spheres.

The passage from a paradigm to

another one has followed cyclical process rather than a linear one; indeed, it would be incorrect to speak about paradigm evolution, but rather about paradigm crisis and reconfiguration. Therefore, the cyclical model of paradigm transformation, an urban and social one, induces us to consider the future stage, not as an evolution of the current one but its crisis.

The cyclical model of paradigm change is based on the idea that at certain moments cities and societies find themselves beyond a critical point that marks the ending of the present paradigm's positive effects. Indeed, once societies have entered the crisis stage, the strategic options are constrained. Thus, the reconfiguration of the paradigm will probably lead to a new wave of positive effects for the society components.

According to the URBACT II report, cities that find themselves in the crisis stage of the cyclical model should set in motion a process of revisioning that may need to be based on capabilities and assets that are different to those which created prosperity in the past.²

The cyclical scheme involves three different stages: a period of linear action - in which the current paradigm provides positive results - a period of constrained action - where strategic options are constrained and the current paradigm provides negative

consequences - and lastly, an emergent action - that included the development of viable visions of the future that differ from those which created prosperity in the past. Hans Schlappa has illustrated the cyclical model, and it can be schematized in the figure below, where:

"The solid line in the model represents the conventional 'performance' part of the cycle on which much contemporary economic development policy is focused. The dotted line represents the 'learning' part of the cycle, a phase characterized by uncertainty and tension between the status quo and possible alternatives. The transition between the different stages is at times seamless but more often is fraught with difficulty."²

The investigation of paradigm's effects, in terms of social inequalities and environmental impact, must correspond to their scale of influence. With this consideration, we want to reflect the importance of using a correct research scale, which must not be limited to national and political borders but rather to those of the paradigm to carry out an analysis corresponding to its effects.

Thus, a critical analysis of the paradigm permits one to comprehend its position within the cyclical process and imagine a paradigm reconfiguration or a continuation of the current one.

GROWTH PARADIGM: ROLE OF INTELLECTUALS

In the course of history, the intellectuals' role has been a continuous contestation of the present.³ Which in other words correspond to a continuous critical approach toward the

present paradigm.

According to Tafuri, intellectuals continually placing in crisis the apparently advanced objectives on which research and debate risk calming down, the critic must - with a rigor which he is obliged to by the historical events in which he operates - stimulate doubts more and more consistent, more and more constructive dissensions, more and more generalized discomforts.⁴

The responsibility of architects over the processes of paradigm criticism depends on the role that we address them. If we assume that architects are suppliers, and so subjected to intricate dynamics which, if on the one hand forbid him to take a position of 'naive' neutrality, on the other hand, lead him to recognize his role as 'specialized operator' in an almost natural way, which induces him to see his project as a moment within a much broader and composite process out of his control.³ Their role within the process of criticism is pure passivity, and they correspond to the Benjaminian category of routiniers, and so those who conform to the habit, who wearily repeat the already known, meaning by it those who renounce to make corrections to the production system.⁵

Nevertheless, in centuries, the figure of architects has rarely been associated with one of the suppliers, but rather has often played the role of adviser and proposer, as well as creator. In not a few occasions, he has also come to immerse himself in the role of the thinker, the utopian, the dreamer, declining the etymology of the project in its most direct and immediate sense: that of an evocation, here and now, of the future.

This process of projection regards the role of architects as 'producers,' which consists in

1. Randers, Jørgen, and G. Bologna. 2013. 2052. Scenari Globali Per I Prossimi Quarant'anni. Rapporto Al Club Di Roma. Milano: Edizioni Ambiente.

2. Schlappa, Hans, and Professor William J V Neil. 2015. From Crisis To Choice: Re-Imagining The Future In Shrinking Cities. Ebook. URBACT. <https://urbact.eu/crisis-choice-re-imagining-future-shrinking-cities>.

3. Marco Biraghi. 2019. L'architetto come Intellettuale. Bologna: Piccola Biblioteca Einaudi.

4. Tafuri, Manfredo, and Franco Purini. 2007. Progetto E Utopia. Architettura E Sviluppo Capitalistico. Bari: Laterza.

5. Walter Benjamin. L'autore come produttore, 1934. In Id. Avanguardia e rivoluzione. Saggi sulla letteratura. Einaudi, Torino 1973.

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Preface

an Introduction to the
Growth Paradigm

the manifestation of his conception of the world in its practice, and so through a critical method.

According to Tafuri, the process of the critic should be assumed as behavior toward the reality, and therefore as an attitude toward the project and the productive system. Indeed, any intellectual position that does not pose as productive is reactionary. But productive means: not only integrated into the production relationship, but capable of transforming the technical-linguistic apparatus into a crisis.⁶ Tafuri continues, keeping in mind the central question, what is the position of a work in its production system, many masterpieces of modern architecture come to assume a secondary or marginal role, and most of the current debates will be relocated to a field of peripheral considerations.

With the present reflection, we agree with the strand of thought that considers architects as intellectuals capable of participating in paradigm criticism. Furthermore, as will be illustrated in the present dissertation, the role of architects in criticizing the currently accepted paradigm is dramatically relevant, and it requires a profound transformation from its contemporary denigration.

In addressing a coherent criticism toward the present paradigm, the study starts with a compendium of the broad spectrum of impacts generated by the currently accepted paradigm. According to the

previous reflections, the research scale is the planetary one because the effects are globally related. In addition, we have investigated the process of expansion of the current paradigm, both in geographical and cultural terms.

In a second moment, according to the state of the art of the world following the present paradigm, we attempt to position it in the cyclical process according to the reflections advanced by several intellectuals over the last decades. According to these considerations and the future trend of the world, in terms of demography, economy, and resources, we propose a critical paradigm shift that will open a large spectrum of opportunities. In particular, a consistent part of the paradigm reconfiguration is addressed to the role of architects in the process.

The latter part of the paper introduces the Manifesto of the paradigm shift, which collected and condensed our reflection towards the future paradigm and its effects on the role of architects. Lastly, according to the manifesto and the reflections collected, and the research, we propose a series of world scenarios according to the new paradigm at different urban scales.

Considering the themes dealt with in the research and the effects generated by the current paradigm, we open our reflections through the words of Raimon Panikkar:

"If, for example, we in Benares, we stop believing that we are at the center of the world and you are on the periphery, this represents suicide for us."⁷

6. Biraghi, Marco. 2005. *Project Of Crisis: Manfredo Tafuri And Contemporary Architecture (Progetto Di Crisi: Manfredo Tafuri E L'architettura Contemporanea)*. Milano: Marinotti.

7. Latouche, S. and Macey, D., 2013. *Farewell to growth*. Cambridge (UK): Polity. 127

01 AN URBANIZING WORLD

the Rise of the Growth Paradigm

People are unevenly distributed around the world, as is the consumption and access to resources. Economic growth is widely regarded as a key goal of national and international economic policies, an implicit assumption that economic growth was synonymous with progress and urbanization. The way in which societies use and care for natural resources fundamentally shapes the well-being of humanity, the environment and the economy.

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World Population and Consumption

Inequalities on a Global Scale

World Population and Consumption

Inequalities on a Global Scale

POPULATION DISTRIBUTION AND FOOTPRINT

The word “demographics” comes from the Ancient Greek word: “demo” meaning people and “graphics” meaning measurement. There is a strong tradition of studying demography as part of economics. Malthus’s writings on population growth are a part of many history-of-thought courses in economics. More recently, as the economy has moved from the financial crisis and the Great Recession to sustainable expansion, attention has shifted from cyclical aspects of the economy to structural factors. In addition, as policy has begun to normalize, the question has been raised: “what is normal?” To answer such a question, we need to understand how the underlying fundamentals of the world are evolving. A critical factor is demographics. Demographic change can influence the underlying growth rate of the economy, structural productivity growth, living standards, savings rates, consumption, and investment. So to understand the global situation, it helps to understand changing demographics and the challenges they pose for monetary and fiscal policymakers.⁸ People are unevenly distributed around

the world. Population distribution is affected by environmental and human factors around the world. Until the early 18th century, world population grew little because high mortality rates offset high fertility rates. But increased knowledge and technological change in the form of advances in medicine, public health, and nutrition began to lower mortality rates. Fertility rates also began to decline.

Until the early 18th century, world population grew little because high mortality rates offset high fertility rates. But increased knowledge and technological change in the form of advances in medicine, public health, and nutrition began to lower mortality rates. Fertility rates also began to decline. According to the latest revision of the United Nations (UN), World Population Prospects, the world’s population is projected to grow from 7.9 billion in 2021 to 11.2 billion in 2100. Although other groups of demographers tend to disagree with this model and project global population leveling at around 9 billion somewhere between 2060 to 2070 and then a start of a decline in population for the first time in history.⁹ Considered part of the four global demographic megatrends, population growth next to population ageing, migration and urbanization, is an important indicator for economic, social and environmental development. For this reason, accurate knowledge of the size, location, and distribution

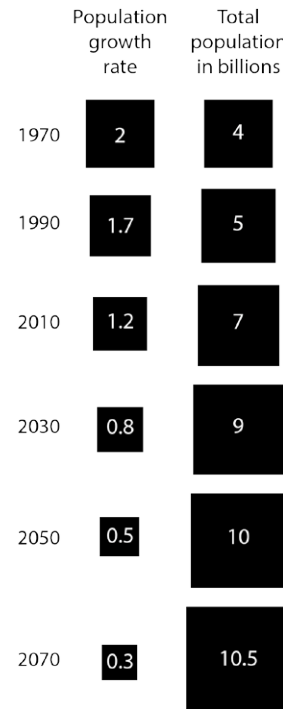


FIG 1.1

of the human population is fundamental for successfully achieving a sustainable future. An effective monitoring of global population change, allows implementing efficient government policies to allocate financial resources, plan interventions and quantify populations at risk. Urbanization poses both challenges and opportunities for sustainable development and environmental management.

How is it possible to offer hospitality to more inhabitants than the planet can sustain, without destroying the biosphere for generations to come?

In the U.S. there were shifting preferences for smaller families because of the rising opportunity costs of having children and the higher costs of raising and educating them. The shift in population from rural to urban areas reduced the need for large families to run farms. There were changes in social norms regarding the use and availability of birth control. Today, the fertility rate in the U.S. is 1.88 births per woman. This is less than the United Nations’ estimated 2.1 replacement rate needed to keep the population stable, and it is considerably less than the fertility rate in 1900, which was over 3. As these demographic changes have played out, the average life expectancy in the U.S. has risen and the population has aged. Average life expectancy at birth is now nearly 80 years old, 30 years higher than it was in 1900. The median age of the U.S. population is approaching 38 years old, nearly 10 years older than in 1970. By 2050, the U.N. projects that the median age in the U.S. will be 42 years old and that the number of people aged 65 or older per 100 of working age people - aged 15 to 64 - will be more than double

If everybody in the world lived like the average EU resident, we would have used up nature’s budget for the year by 10 May, and would need 2.8 planets.

FIG 1.1. Graph illustrating World Population in contrast to growth rate.

8. Mester, Loretta J. 2017. Demographics And Their Implications For The Economy And Policy. Ebook. Washington: Cato Institute. <https://www.clevelandfed.org/newsroom-and-events/speeches/sp-20171116-demographics-and-their-implications-for-the-economy-and-policy>.

9. Assessing Global Resource Use A Systems Approach To Resource Efficiency And Pollution Reduction. 2021. Ebook. UN. <https://www.resourcepanel.org/reports/assessing-global-resource-use>.

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World Population and Consumption

Inequalities on a Global Scale

what it was in 1970. But this is not an effect or situation just emerging in the U.S., it is rather a global one. A number of countries are further along in this demographic transition than the U.S. is, and the process of population aging is accelerating worldwide.¹⁰

In Japan, the population has been shrinking over the past five years, the ratio of older people to working-age people is the highest in the world, and the median age is almost 47 years old. Across Europe, fertility rates have been below the replacement level for some time. In China, the growth rate of the working-age population has slowed since the late 1980s, and partly because of its previous one-child policy, China's population is also rapidly aging. The median age in China has increased from around 19 years in 1970 to 39 years in 2020. On the other hand, many low- and middle-income countries are at a considerably earlier phase in the demographic transition, with young and faster growing populations, and rising labor force participation rates. In India, the median age is around 27 years and the annualized growth rate of the population from 2010 to 2020 has been 1.2 percent.

The U.N. projects that, in seven years, the population of India will surpass that of China - the most populous country - and that India's population will continue to grow through 2050.

Much of the increase in world

population between now and 2050 is projected to be in Africa, where fertility rates remain high - above replacement level. The implications of these global demographic patterns are worth considering because they pose challenges for the future. Indeed, the magnitude of the effects will depend on policy responses. There are of course also Demographic Implications for Economic Growth. The expected slowdown in population growth and labor force participation rates will have implications for economic growth and the composition of growth.

The key determinants of the economy's growth rate are labor force growth and structural productivity growth - how effectively the economy combines its labor and capital inputs to create output. Demographics suggest that labor force growth will be considerably slower than it has been in recent decades, and this will weigh on economic growth.

There are of course also Demographic Implications for Economic Growth. The expected slowdown in population growth and labor force participation rates will have implications for economic growth and the composition of growth.

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the economy combines its labor and capital inputs to create output. Demographics suggest that labor force growth will be considerably slower than it has been in recent decades, and this will weigh on economic growth.

In addition, in theory, the aging of the population may also have a negative effect on structural productivity growth. Demand for healthcare will continue to rise, and an aging population will place different demands on the housing sector than a younger population, affecting the demand for single- versus multi-family properties, for owning versus renting, and for residential improvements that allow older adults to age in place.

RESOURCES USE AND GLOBAL INEQUALITIES

The consumption of resources across the world varies significantly. The access to food, water and energy resources is not shared equally amongst the people of the world. There are massive inequalities (where people have different access to resources) in people's access to clean water, reliable energy supplies and adequate food supplies. The general pattern is for high-income countries HICs to consume a far higher amount of resources than low-income countries LICs. The main challenge is not having enough resources but that the resources that do exist are unevenly distributed. As a LIC develops so too does its demand for resources. This growth in demand, along with population growth, leads to a shortage of resources. Environmental and sustainability policies require a new

evidence base that makes it possible to monitor the scale of the physical economy, that is - the amount of material, energy, water and land used and emissions generated in making, using and providing goods, services and infrastructure systems, allowing for a more even distribution among resources.¹¹

The average calories consumption in the UK is 3450 kilocalories. However, in a LIC such as Eritrea, it is 1590 kilocalories.

There is a clear relationship between areas of greatest population growth and the areas that have the highest levels of undernourishment.

During the period 1970 to 2020, the annual global use of materials grew from 26.7 billion tonnes to 79.6 billion tonnes.

10. Mester, Loretta J. 2017. Demographics And Their Implications For The Economy And Policy. Ebook. Washington: Cato Institute. <https://www.clevelandfed.org/newsroom-and-events/speeches/sp-20171116-demographics-and-their-implications-for-the-economy-and-policy>.

11. "An Overview Of Global Inequalities In The Supply And Consumption Of Resources". 2021. Internet Geography. <https://www.internetgeography.net/topics/an-overview-of-global-inequalities-in-the-supply-and-consumption-of-resources/>.

Children per woman by GDP per capita

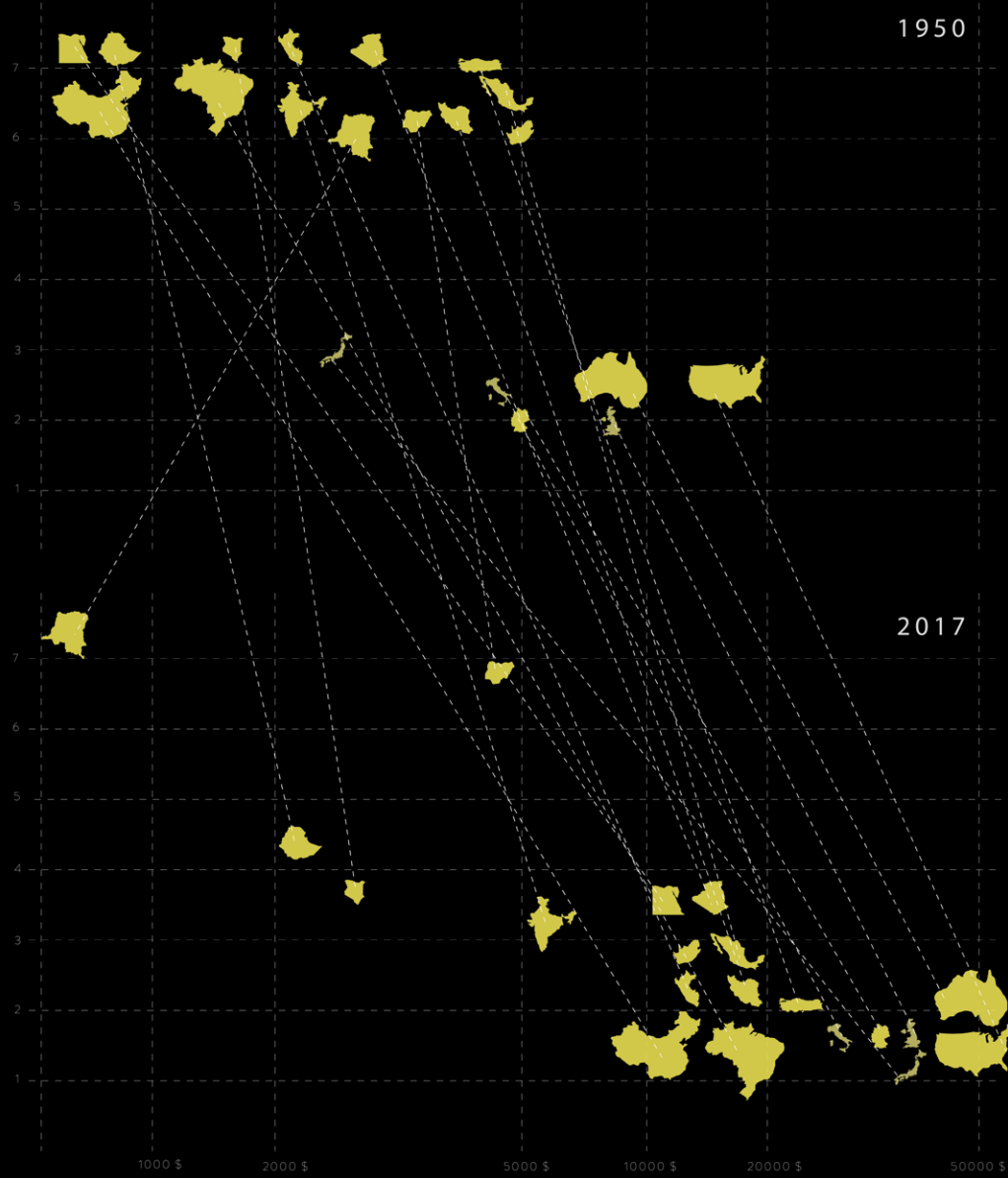


FIG 12.

01/1

World Population and Consumption

Inequalities on a Global Scale

GLOSSARY

LIC: Low-Income Countries with a gross national income (GNI) per capita of US\$1,026 or less.

HIC: High-Income Countries with a gross national income (GNI) per capita of US\$12,696 or more.

12. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson

13. Assessing Global Resource Use A Systems Approach To Resource Efficiency And Pollution Reduction. 2021. Ebook. UN. <https://www.resourcepanel.org/reports/assessing-global-resource-use>.

14. GCSE - Resources Global inequalities An overview of global inequalities in the supply and consumption of resources. [online] Available at: <https://www.coolgeography.co.uk/gcse/CRM_Resources_Global_inequalities.php>.

15. Earth Overshoot Day. 2021. 100 Days of Possibility - #MoveTheDate of Earth Overshoot Day. [online] Available at: <<https://www.overshootday.org/100-days-of-possibility/>>.

Strong growth in natural resource extraction of biomass, fossil fuels, metal ores and non-metallic minerals continues to support the global economy, and also adds to global environmental pressures and impacts. Global material demand has increasingly been supplied by low-income and middle-income regions, indicating outsourcing of local impacts of resource extraction - often for the sake of producing primary exports to high-income countries.

Experts widely agree that human activities are harming the global environment. Since the Industrial Revolution, the world economy has grown dramatically. Overall this is a success story, since rising incomes have lifted millions of people out of poverty. But it has been fueled by population growth and increasing consumption of natural resources. Material demand has continued to shift from biomass and renewable materials to non-renewable materials, creating new waste flows and contributing to higher emissions and pollution.

The global trend of moving away from traditional to modern technologies, and from agriculture - based economies to urban and industrial economies (and their fast - growing new material requirements), further accelerates global material use and creates significant challenges for sustainability policy. Over the past four decades, a large shift has occurred in material extraction

from Europe and North America to Asia and the Pacific and West Asia. Additionally, a considerable share of material extraction has occurred for consumption in wealthy parts of the world, while low-income countries have fallen short of yielding the benefits of their resource base.¹²

Environmental impacts occur at all stages of material utilization, as they result from extraction, transformation, product use and waste management. Some of the growth in negative environmental impacts may be offset by circular economy initiatives where virgin material input is replaced by recycled materials, remanufacturing and reuse.

The UN has projected in its latest reports four Future Scenarios. Each of the four scenarios represents a specific combination of potential future resource use trends and future greenhouse gas emission pathways.

Existing Trend: is calibrated to historical natural resource use trends and greenhouse policies that would see a 3°C increase in temperatures by the end of the century, rising to around 4°C after that. Natural resource use trends are applied across major world regions, accounting for changes in GDP per capita.

Resource Efficiency: assumes the same climate pathway as Existing Trends, but introduces a package of innovations, information, incentives

and regulations to promote ambitious but achievable improvements in resource efficiency, and reductions in total resource Extractions.

Ambitious Climate: assumes the same natural resource use policies as does Existing Trends, but that the world adopts ambitious greenhouse gas abatement policies capable of limiting likely global temperature increases to 2°C above pre-industrial levels.

Efficiency Plus: combines the resource efficiency settings and greenhouse gas abatement settings to explore potential policy interactions. This scenario is found to have a higher chance of limiting climate change to 2°C than any other scenario.¹³

Water supply around the world is limited and unequally distributed. In order to compare water consumption between countries, a water footprint can be calculated. This is the total amount of water used per day, for things such as drinking and washing. It also includes the water it takes to produce energy, food, goods and recycling. As with water and food, there are considerable differences in energy consumption between countries. Demands for energy resources are increasing in LICs as they develop economically. As industry develops, farming becomes mechanised and urbanisation occurs there is a rapid growth in energy consumption.

The reasons for varying consumption of these resources are:

1. Access - some countries have more natural resources than others, and if the resource is evenly shared all can benefit. This is not always the case however.

2. Quantity - how much of a natural resource does a country or population have? If it is

in short supply do they have the means to overcome that? For example, water is in short supply in Dubai but it is building desalination plants to help it cope.

3. Level of wealth - how much money does a place have? The wealthier a place the more options the country has to combat any shortages in key resources.

4. Level of technology and infrastructure - if the country has the technology to deliver energy, water and food to its people. The UK for example has a tiny percentage of its population producing food (about 1%) yet can produce nearly 60% of the nation's needs. Some countries do not have water purification plants or enough power station capacity.

5. Standard of living of the population - the higher this is the more the population expects to get in terms of clean water, energy use and food consumption.

6. Diet - this can influence how many calories are taken in and what foods are eaten. A meat rich diet would be harder for a country to provide for.¹⁴

We are entering a 'storm' of climate change and resource constraints. The earlier we start preparing ourselves for this predictable future, the better positioned we will be.¹⁵

Ecological Footprint measures the demand on and supply of nature. On the demand side, the Ecological Footprint adds up all the productive areas for which a population, a person or a product competes. It measures the ecological assets that a given population or product requires to produce the natural

ECOLOGICAL FOOTPRINT PER PERSON

in the current period



THE WORLD
IN HEMISPHERES.

01/1

World Population and Consumption

Inequalities on a Global Scale

GLOSSARY

Ecological Footprint: is a method promoted by the Global Footprint Network to measure human demand on natural capital, i.e. the quantity of nature it takes to support people or an economy.

Global Hectare: One global hectare is the world's annual amount of biological production for human use and human waste assimilation, per hectare of biologically productive land and fisheries.

resources it consumes (including plant-based food and fiber products, livestock and fish products, timber and other forest products, space for urban infrastructure) and to absorb its waste, especially carbon emissions.

The Ecological Footprint tracks the use of productive surface areas. Typically these areas are: cropland, grazing land, fishing grounds, built-up land, forest area, and carbon demand on land.

On the supply side, a city, state or nation's biocapacity represents the productivity of its ecological assets (including cropland, grazing land, forest land, fishing grounds, and built-up land). These areas, especially if left unharvested, can also serve to absorb the waste we generate, especially our carbon emissions from burning fossil fuel.

When the footprint of consumption worldwide exceeds biocapacity, humans are overshooting, or exceeding the regenerative capacity of Earth's ecosystems. This year, they estimate that humans are using natural resources 1.75 times faster than ecosystems can regenerate – or, put another way, consuming 1.75 Earths.

As an example, the ecological footprint for the United Kingdom is 4.4 global hectares per person, and global biocapacity is 1.63 global hectares per person. Therefore, it would take (4.4 / 1.63) 2.7 Earths if everyone lived like the British.¹⁶

Fighting the climate and resource crisis will be easier with international cooperation. Without it, the need for companies, cities, and countries to prepare themselves for the future becomes even more existential.

The overall pattern is that as populations become wealthier, they have increased access to these basic resources and consume more. This means that as countries become wealthier over time they can expect their populations to consume more natural resources. The way in which societies use and care for natural resources fundamentally shapes the well-being of humanity, the environment and the economy. Better and more efficient use of natural resources can be one of the most cost-efficient and effective ways to reduce impacts on the environment, while also achieving the socio-economic objectives of international sustainable development and climate goals.

What viable pathways exist for society to undertake such decoupling of economic growth from natural resource use and environmental impacts?

1 European cow enjoys a subsidy of 2 euros per day. More than the income of 2.7 billion human beings.

The richest 1 billion people consume 50 % of the world's energy. Only 4% of the world's energy is consumed by the poorest 1 billion.

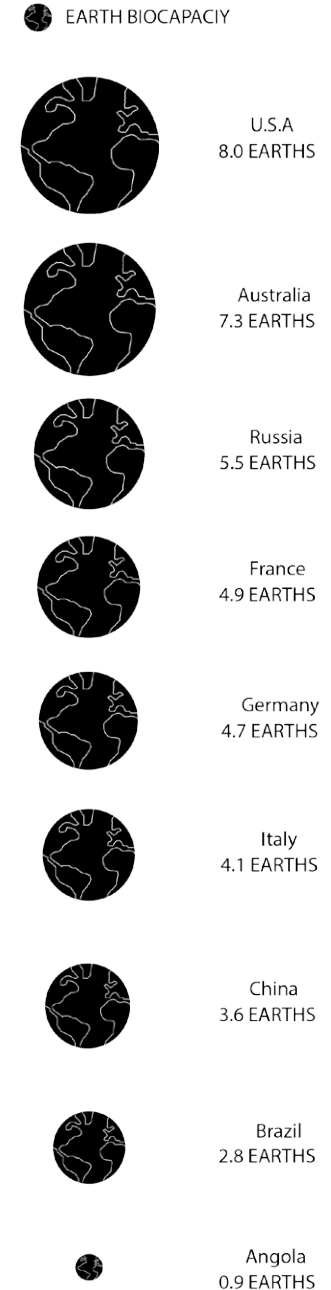


FIG 1.4

01/2

Demographic Trends
Shifts in Population

GLOSSARY

LDC: Least Developed Countries are low-income countries confronting severe structural impediments to sustainable development.

FIG 1.5. Global Population in billions. Source: U.N. Population Division, The Lancet.

17. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson

18. Population.un.org. 2021. World Population Prospects - Population Division - United Nations. [online] Available at: <https://population.un.org/wpp/Maps/>.

Demographic Trends

Shifts in Population

THE WORLD IN NUMBERS

The current world population of 7.9 billion is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100, according to a United Nations report. With roughly 83 million people being added to the world's population every year, the upward trend in population size is expected to continue, even assuming that fertility levels will continue to decline. Although as mentioned before a number of demographers - growing larger each year - disagree with this model. They predict a population peak of around 9 billion before the end of the century and a start of declining population at the end of this century.¹⁷

There are significant shifts in the country's population on the horizon. The new projections include some notable findings. China (1.4 billion inhabitants) and India (1.3 billion inhabitants) remain the two most populous countries, comprising 19% and 18% of the total global population. Around 2024, the population of India is expected to surpass that of China.

Among the ten largest countries worldwide, Nigeria is growing the most rapidly. Consequently, the population of Nigeria, currently the world's 7th largest, is projected to

surpass that of the United States and become the third largest country in the world shortly before 2050. Most of the global increase is attributable to a small number of countries.¹⁸

From 2020 to 2050, it is expected that half of the world's population growth will be concentrated in just nine countries: India, Nigeria, the Democratic Republic of the Congo, Pakistan, Ethiopia, the United Republic of Tanzania, the United States of America, Uganda and Indonesia (ordered by their expected contribution to total growth).

The group of 47 least developed countries or LDCs continues to have a relatively high level of fertility, which stood at 4.3 births per woman in 2010-2020. As a result, the population of these countries has been growing rapidly, at around 2.4% per year. Although this rate of increase is expected to slow significantly over the coming decades, the combined population of the LDCs, roughly one billion in 2020, is projected to increase by 33% between 2020 and 2030, and to reach 1.9 billion in 2050. Similarly, Africa continues to experience high rates of population growth. Between 2020 and 2050, the populations of 26 African countries are projected to expand to at least double their current size.¹⁹

RURAL POPULATION

The alarm over the decrease in the rural population is nothing new.

Xenophon complained that the Greeks loved the city rather than the village.

Varro was sarcastic in his testimony that the Romans preferred the circus to the corn field.

Mirabeau was eloquent in his recommendations of country life and pathetic in his delineation of the destiny of the farm people who moved to town.

During the middle period in English history the politicians and poets lamented bitterly the exodus from country to town.

The rural population of the world has grown slowly since 1950 and is expected to reach its peak in a few years. The global rural population is now close to 3.4 billion and

is expected to rise slightly and then decline to 3.1 billion by 2050. Africa and Asia are home to nearly 90% of the world's rural population in 2020. India has the largest rural population (893 million), followed by China (578 million). Africa is the most rural with 57% of the population living in rural areas.

The two components of population change are natural change and net migration. Natural change is the number of births minus the number of deaths in a place over a period of time. Net migration is the number of people moving to a place minus the number of people moving out. The factors underlying trends in natural change are less volatile than those behind net migration. Birth and death rates – also called fertility and mortality rates – may be influenced by short-term economic conditions to some degree, but longer-term societal factors, educational attainment, and access to health services all play a role too. In contrast, changes in net migration rates are more likely to be driven by short-run changes in economic conditions and

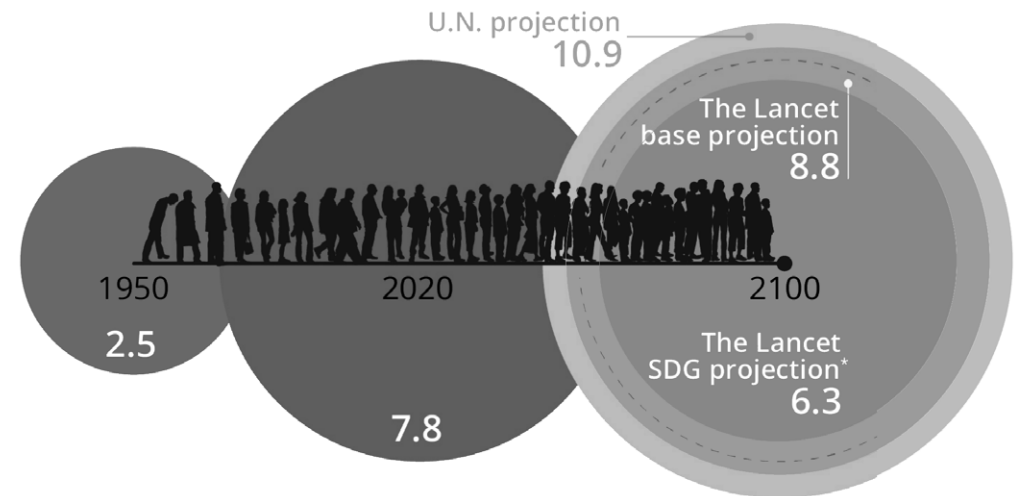


FIG 1.5

01/2

Demographic Trends
Shifts in Population

GLOSSARY

Average Sub-Sahara
Africa annual income:
\$762

Average Asia annual
income: \$1,161

longer-term quality of life factors, such as opportunities for outdoor recreation, a favorable climate, and good schools.²⁰

Urbanization has always been a factor in rural population growth. Since the 19th century, various forces – declining employment in agricultural and extractive industries, the globalization of manufacturing, and economic growth in urban areas – have led many people to leave rural communities for cities and suburbs. Rural population growth slowed for decades, with two rebound periods in the 1970s and 1990s. Economic factors, sometimes termed “regional restructuring,” were advanced as an explanation for the partial recovery of rural populations during both periods. Increases in suburbanization were partly responsible for the 1970s and 1990s rebounds, with rural areas that were closer to urban areas benefiting from an increase in demand for housing and an increase in out-commuting. In addition, during the 1970s, the transformation of the urban economy away from industry toward services and a boom in extractive and manufacturing industries in rural areas drew workers to rural areas. In the 1990s, the rebound was aided by an increase in the availability of jobs in rural areas and the advent of telecommuting. The 1990s rebound was also associated with an increase in retiree in-migration and an overall

increase in in-migration to rural areas with many natural amenities. More recently, rural population loss has become more acute. Between 2010 and 2020, rural areas lost population in absolute terms for the first time. In the past, natural increase more than compensated for the number of people moving from rural areas to urban areas. But declines in the number of births and increases in mortality rates for some rural populations have contributed to a bleaker population outlook for rural communities. These trends are likely to continue, meaning that reversing the population decline for rural communities will require working on reducing out-migration and increasing in-migration. The shrinking of rural populations has both positive and negative effects in terms of what rural-urban migration does to quality of life. Earnings from non-farming activities are estimated to account for 30-50% of rural household income in Africa and about 60% in Asia. Since rural populations do not rely completely on their rural income, the slow rural-urban migration can act as a form of income diversification that can support farming innovation. Small family farms that are well connected to markets can compete with larger, more commercial, farms. In addition, urbanization provides people with better access to previously difficult to access amenities such as health care, social services, and higher-income jobs. This, in time, works to reduce the issue of rural poverty.

This migration removes some farmers from the agriculture industry, causing a declining ratio of food producers to food consumers. As technology improves, an individual farmer can produce more food, freeing people up for other work. The downside is that when many people move to cities in hopes of finding higher income jobs, the large influx of workers to the cities may make it difficult for people to find jobs that pay well despite their qualifications. Impact on the rural environment: Quality of life decreases. People who are seeing rural centers empty are exposed to a loss in the basic services offered (health, education, food, etc.), as the councils themselves are losing their budgets. Moreover, when the depopulation depletes, job prospects vanish, forcing young people to leave in search of a job they will not find in the “countryside.” This loss of economic dynamism leads to impoverishment of the remaining population and the municipalities themselves, which in turn, lose their cultural heritage. Crop abandonment. Rural depopulation not only causes loss of wealth, but local food is also no longer produced and the countryside is “left to waste.” This situation leads to a kind of rural desertification caused by the break of an ecosystem that had been in place for years, maybe even centuries. Such changes also affect the local fauna, which can even disappear. Environmental degradation. Decreased agricultural and livestock production resulting from rural depopulation means that food that was previously locally sourced must be imported, which results in increased pollution from transportation.²¹ Despite the serious consequences that depopulation has for rural areas, we must

not overlook that problems also arise in cities as a result of the constant arrival of new inhabitants. Overpopulation. The first such problem is the increase in the number of inhabitants per square kilometer, i.e. overpopulation, which makes it difficult for public administrations to provide services that are essential for the population’s well-being. Price increases. Increased housing demand also leads to rising rent. This is linked to a generally higher cost of living than in rural areas and relatively low wages due to the extensive supply of constantly arriving workers. Lower quality of life. The above problems result in a worse quality of life, as happens in rural areas, with the added factor that people living in large cities are exposed to more pollution. It comes as no surprise that around 70 percent of the world’s carbon dioxide emissions come from its streets. It’s therefore no wonder that the World Health Organization affirmed in 2016 that nine out of ten people residing in large cities breathed air that did not meet the minimum quality guidelines that the WHO itself considers not harmful to the body. Higher environmental impact. As noted, increased pollution is constant in urban areas. The arrival of new inhabitants and the increase of the urbanized area is a major problem that must be overcome if both the environment and citizens’ health are to be safeguarded. This is why all kinds of sustainable city projects have been implemented to address this undesirable trend if climate change is to be curbed and inequalities between people are to be reduced.²²

20. Hibbard, Benjamin H. “The Decline in Rural Population.” Publications of the American Statistical Association 13, no. 97 (1912): 85–95. <https://doi.org/10.2307/2965053>.

21. Hibbard, Benjamin H. “The Decline in Rural Population.” Publications of the American Statistical Association 13, no. 97 (1912): 85–95. <https://doi.org/10.2307/2965053>.

22. Grupo MAPFRE Corporativo - Acerca de MAPFRE. 2021. Why should rural depopulation be avoided?. [online] Available at: <<https://www.mapfre.com/en/insights/sustainability/rural-depopulation/>>.

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Demographic Trends
Shifts in Population

GLOSSARY

Sub-Saharan Africa: is geographically the area of the continent of Africa that lies south of the Sahara.

23. Un.org. 2021. 68% of the world population projected to live in urban areas by 2050, says UN | UN DESA | United Nations Department of Economic and Social Affairs. [online] Available at: <<https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>>.

24. Assessing Global Resource Use A Systems Approach To Resource Efficiency And Pollution Reduction. 2021. Ebook. UN. <https://www.resourcepanel.org/reports/assessing-global-resource-use>.

25. Martinez-Fernandez, C., et al. (2012), Demographic Change and Local Development: Shrinkage, Regeneration and Social Dynamics, OECD Publishing, Paris, <https://doi.org/>.

26. ID4D. 2021. Demographic change: new horizons for development. [online] Available at: <<https://ideas4development.org/en/demographic-change-horizons-development/>>.

URBAN POPULATION

For most of human history, people across the world lived in small communities. Over the past few centuries - and particularly in recent decades - this has shifted dramatically. There has been a mass migration from Rural to Urban areas.

4.35 billion people, meaning 56% of the global population lives in Urban areas.

Every second person is a city dweller.

Today, 56% of the world's population lives in urban areas, a proportion that is expected to increase to 68% by 2050. Projections show that urbanization, the gradual shift in

residence of the human population from rural to urban areas, combined with the overall growth of the world's population could add another 2.5 billion people to urban areas by 2050, with close to 90% of this increase taking place in Asia and Africa.²³

Future increases in the size of the world's urban population are expected to be highly concentrated in just a few countries. Together, India, China and Nigeria will account for 35% of the projected growth of the world's urban population between 2020 and 2050. By 2050, it is projected that India will have added 416 million urban dwellers, China 255 million and Nigeria 189 million.

The urban population of the world has grown rapidly from 751 million in 1950 to 4.35 billion in 2020.

Asia, despite its relatively lower level of urbanization, is home to 55% of the world's urban population, followed by Europe and Africa with 13% each.

Today, the most urbanized regions include Northern America (with 82% of its population living in urban areas in 2020), Latin America and the Caribbean (81%), Europe (74%) and Oceania (68%). The level of urbanization in Asia is now approximately at 50%. In contrast, Africa remains mostly rural, with 43% of its population living in urban areas.²⁴

In Europe and Central Asia, urban population declined in over half of

low- and middle-income countries between 1991 and 2011. The rise in average age in Eastern Europe and Central Asia is largely attributable to a decrease in fertility rather than to an increase in longevity, which makes aging trends unique. The emigration of young people is reinforcing these trends. The region and its cities will continue to see diverse and contrasting patterns of growth and decline as population aging is expected to accelerate across major cities.

The Latin America and the Caribbean region is among the most urbanized regions in the world, having reached an urban majority by 1960 - a milestone achieved globally only in 2008. Average growth rates in cities today are declining, and some city centers are losing population to the urban periphery. Urbanization is shifting towards small and intermediate cities. The region is starting to age rapidly, a trend that is especially pronounced in urban areas.²⁵

The Middle East and North Africa, is already 64% urbanized. Much of the region's future urban growth—in absolute terms—is projected to occur in the region's primary cities although faster growth—in relative terms—is projected to occur in the region's secondary cities. Conflict and climate-driven migration as well as cross-border movement driven by search for economic opportunity are unique considerations in the region and have been overriding some secular urbanization trends in a subset of countries. Aging is not yet an issue, but is set to rapidly increase over the coming decades. The region's youth bulge, if managed well, could present a significant demographic dividend with potential higher growth rates, especially in urban areas.

Africa is the fastest growing and youngest region in the world. There is great diversity of demographic trends among African

countries and regions. The region has the highest urban growth rates in the world, but a relatively low share of population living in urban areas. As life expectancy increases, between 2020 and 2050, Africa will have the fastest increase in the world in the number of elderly persons. Small and intermediate cities, not the largest ones, will absorb a bulk of the region's urban population growth in the future.²⁶

In South Asia, a combination of increasing life expectancy, falling fertility rates, and low old-age dependency ratios has created the conditions for a "youth bulge" generation. The region has disproportionately fewer women, especially at birth, compared with the global average, which could have long-term implications when it comes to labor market participation, for instance. Despite the common perception, urban population growth is mainly driven by natural growth and in-situ reclassification rather than rural-to-urban migration. Congestion and weak urban management may also undermine South Asian cities' pull factors.

The East Asia and Pacific region is experiencing rapid urban growth, second only to Sub-Saharan Africa. East Asia and Pacific became 50% urban in 2018, with most urban inhabitants residing in secondary cities. The region also has the largest regional population of elderly but there is an enormous diversity of aging-levels within the region, which are correlated with national income levels. Migration likely has a significant role in driving urbanization levels. Understanding the key trends in urbanization likely to unfold over the coming years is crucial to the implementation of a Sustainable Development, including efforts to forge a new framework of urban development.

01/2

Demographic Trends
Shifts in Population

As the world continues to urbanize, sustainable development depends increasingly on the successful management of urban growth, especially in low-income and lower-middle-income countries where the pace of urbanization is projected to be the fastest.

Many countries will face challenges in meeting the needs of their growing urban populations, including for housing, transportation, energy systems and other infrastructure, as well as for employment and basic services such as education and health care.

Integrated policies to improve the lives of both urban and rural dwellers are needed, while strengthening the linkages between urban and rural areas, building on their existing economic, social and environmental ties.

To ensure that the benefits of urbanization are fully shared and inclusive, policies to manage urban growth need to ensure access to infrastructure and social services for all, focusing on the needs of the urban poor and other vulnerable groups for housing, education, health care, decent work and a safe environment.

FACTORS INFLUENCING POPULATION DEVELOPMENT

A reduction in the fertility level results not only in a slower pace of population growth but also in

an older population. Compared to 2020, the number of persons aged 60 or above is expected to more than double by 2050 and to more than triple by 2100, rising from 962 million globally in 2020 to 2.1 billion in 2050 and 3.1 billion in 2100.

The Global fertility rate as of now is at 2.4 births per woman. A 2.1 is needed for a replacement of the population - meaning to stabilize the number of inhabitants on earth. Nevertheless, future predictions show that this rate will go below replacement level by the end of the century. 2.2 in 2050 and 1.94 in 2100. This means that before the end of the century we will enter a global stage of shrinking population, although some countries will continue to grow.

In Europe, 25% of the population is already aged 60 years or over. That proportion is projected to reach 35% in 2050 and to remain around that level in the second half of the century. Populations in other regions are also projected to age significantly over the next several decades and continue through 2100. Africa, which has the youngest age distribution of any region, is projected to experience a rapid ageing of its population. Although the African population will remain relatively young for several more decades, the percentage of its population aged 60 or over is expected to rise from 5% in 2020 to around 9% in 2050, and then to nearly 20% by the end of the century.

Globally, the number of persons aged 80 or over is projected to triple by 2050, from 137 million in 2020 to 425 million in 2050. By 2100 it is expected to increase to 909 million, nearly seven times its value in 2020.

Population ageing is projected to have a profound effect on societies, underscoring the fiscal and political pressures that the health care, old-age pension and social protection systems of many countries are likely to face in the coming decades.²⁷

Substantial improvements in life expectancy have occurred in recent years. Globally, life expectancy at birth has risen from 65 years for men and 69 years for women in 2000-2005 to 69 years for men and 73 years for women in 2010-2015. Nevertheless, large disparities across countries remain.

Although all regions shared in the recent rise of life expectancy, the greatest gains were for Africa, where life expectancy rose by 6.6 years between 2000-2005 and 2010-2015 after rising by less than 2 years over the previous decade.

The gap in life expectancy at birth between the least developed countries and other developing countries narrowed from 11 years in 2000-2005 to 8 years in 2010-2015. Although differences in life expectancy across regions and income groups are projected to persist in future years, such differences are expected to diminish significantly by 2045-2050.²⁸

The increased level and reduced variability in life expectancy have been due to many factors, including a lower under-five mortality rate, which fell by more than 30% in 89 countries in recent years.

There is no point in writing about urban issues with a forward looking perspective without a strong focus on climate change. In

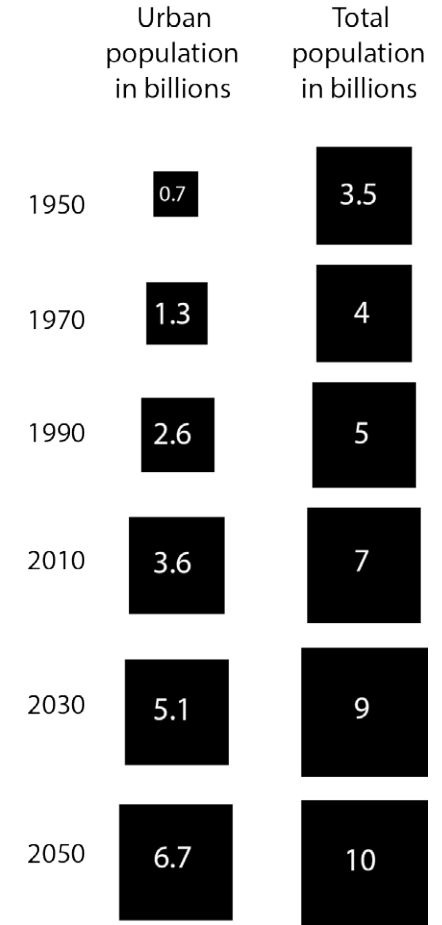


FIG 1.6

More than half of Earth's populations lives in East Asia

FIG 1.6. Urban Population in contrast to World Population Development.

27. Nations, U., 2021. Shifting Demographics | United Nations. [online] United Nations. Available at: <https://www.un.org/en/un75/shifting-demographics>.

28. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson.

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Demographic Trends
Shifts in Population

GLOSSARY

Urbanization: refers to the mass movement of populations from rural to urban settings and the consequent physical changes to urban settings.

Megacity: is a very large city, typically with a population of more than 10 million people.

Levee Dyke: is a structure that is usually earthen and that often runs parallel to the course of a river in its floodplain or along low-lying coastlines.

29. Government.nl. 2021. Causes and effects of population decline. [online] Available at: <<https://www.government.nl/topics/population-decline/causes-and-effects-of-population-decline>>.

30. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson

31. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson.

particular, how urban development must change both in dramatically reducing greenhouse gas emissions and in its capacity and willingness to adapt to climate change's (increasing) impacts.

There are currently 250 million people worldwide living in coastal areas highly vulnerable to flood damage. This number is projected to increase to 630 million by the end of the century. A shortlist of coastal megacities vulnerable to climate-related flood damage includes Kolkata, Mumbai, Dhaka, and Guangzhou, with many other large cities at risk, especially in South and Southeast Asia. This is made all the more disturbing given sea level rise. Jakarta, one of the world's fastest growing cities, could be entirely underwater by 2050, and Shanghai and Hong Kong are also under threat. The developing world's large cities are not the only ones threatened by sea level rise. Recent research shows that Miami, Florida is perhaps the city most vulnerable to climate-related flooding.

Climate change is already increasing the need for disaster risk reduction and response planning by governments, including the need to evacuate cities during extreme weather events.

We need to identify methods of making urbanization more sustainable. In coastal cities, infrastructure upgrades are especially important since the growing threat of climate change requires not only reducing

emissions, but also making coastal floods less severe and more survivable. Amsterdam, with its levees dykes, designated flood areas, and flood-resistant housing, is sometimes cited as a model city for using infrastructure and urban design to reduce vulnerability to catastrophic floods. In drought-affected areas, this also means developing policies and infrastructure to more effectively obtain and manage water. Given the diverse nature of most cities and the relative vulnerability of underprivileged communities, governments, city planners, urban designers and architects will also need to think about how to equitably implement such responses.²⁹

It is important to remember that cities are not just passive victims of climate change, they are also heavy contributors to the problem. As cities are hubs of human activity—industrial and otherwise—they tend to have much larger carbon footprints compared to rural spaces. The presence of factories, the consumption of electricity, and transportation of people from one place to another all generate carbon emissions and can contribute to climate change. Efforts to reduce global carbon emissions will likely require significant improvements to energy efficiency and the quality of infrastructure and more sustainable design with efficiency and sufficiency in mind.

There continue to be large movements of migrants between

regions, often from low- and middle-income countries toward high-income countries. The volume of the net inflow of migrants to high-income countries in 2010-2015 (3.2 million per year) represented a decline from a peak attained in 2005-2010 (4.5 million per year). Although international migration at or around current levels will be insufficient to compensate fully for the expected loss of population tied to low levels of fertility, especially in the European region, the movement of people between countries can help attenuate some of the adverse consequences of population ageing.

POPULATION DECLINE

Several countries are expected to see a population decline by more than 15% by 2050.

In recent years, fertility has declined in nearly all regions of the world. Even in Africa, where fertility levels are the highest of any region, total fertility has fallen from 5.1 births per woman in 2000-2005 to 4.7 in 2010-2020.³⁰ More and more countries, almost all European ones, have fertility rates below the level required for the replacement of successive generations (2.1 births per woman), and some have been in this situation for several decades. During 2010-2020, fertility was below the replacement level in 83 countries comprising 46 % of the world's population. The ten most populous countries in this group are China, the United States of America, Brazil, the Russian Federation, Japan, Vietnam, Germany, the Islamic Republic of Iran, Thailand, and the United Kingdom (in order of population size).

As John Ibbitson and Darrell Bricker wrote in Empty Planet, "the forces driving population decline have been in place since at least the turn of the century."

The biggest force is urbanization. The largest migration in human history has happened over the last century and it continues today as people move from the country to the city. In 1960, one-third of humanity lived in a city. Today, it's almost 60%. Moving from the country to the city changes the economic rewards and penalties for having large families. Many children on the farm means lots of free hands to do the work. Many children in the city means lots of mouths to feed. That's why we do the economically rational thing when we move to the city: we have fewer kids.

Fertility rate also plays a major role in this trend. Moving to the city also changes the lives of women, exposing them to a different version of life than their mothers and grandmothers lived in the country. Urban women are much more likely to have an education and a career, as well as easier access to contraception. Lower birthrates are the inevitable result. That's why first-time mothers today are older and have fewer children, and teenage pregnancies have dramatically declined. In most developed countries, the birthrate of women over 40 has surpassed the rate of women age 20 and younger. We can expect that a great defining moment of the 21st century will occur in three decades or so when the global population starts to decline.³¹

Why does population decline matter?

The abandonment of the territory is accompanied by a progressive emptying

01/2

Demographic Trends
Shifts in Population

and decay of the building heritage. According to the latest Istat census 22.7% of Italian homes are empty or occupied by non-resident families: almost seven million homes, i.e. one in four, which becomes one of its two in small municipalities (Legambiente 2016), with a 350% increase in ten years.³²

Fewer people are good for the climate, but the economic consequences are severe. In the 1960s, there were six people of working age for every retired person. Today, the ratio is three-to-one. By 2035, it will be two-to-one. Some say we must learn to curb our obsession with growth, to become less consumer-obsessed, to learn to manage with a smaller population. That sounds very attractive.

But who will buy the stuff you sell? Who will pay for your healthcare and pension when you get old?

Because soon, humanity will be a lot smaller and older than it is today.

FIG 1.7. Newspaper article of population bomb. Source: https://www.reddit.com/r/populationtalk/comments/hkqs5g/the_population_bomb_threatens_the_peace_of_the/

32. Cassatella, Claudia. 2021. DOWNSCALING, RIGHTSIZING. Contrazione Demografica E Riorganizzazione Spaziale. Planum Publisher e Società Italiana degli Urbanisti.

33. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson.

THE NEW YORK TIMES

THE POPULATION BOMB THREATENS THE PEACE OF THE WORLD



SO WHAT ARE WE DOING ABOUT IT?

Fifteen years ago there were 2.5 billion people on earth. Today there are 3.5 billion—and new comers are arriving on the scene at the rate of more than one million a week! In another fifteen short years there will be a total of 4.5 billion people on this small planet of ours. Most of them hungry. And make no mistake about it, America cannot long remain an island of prosperity in a sea of poverty and hunger.

If corrective measures to check this human flood are not taken right here and now the resulting world-wide

misery, strife, revolutions and wars will make our experience in Viet Nam appear minor by comparison.

President Johnson has said that the population crisis is the greatest problem humanity faces. And the National Academy of Sciences has said that "the Population Bomb can be successfully attacked by developing new methods of fertility regulation and implementing programs of family planning widely and rapidly throughout the world." Yet the accompanying chart reflects the scant amount of attention the population problem is currently

receiving from our Government.

This is your problem and you can do something about it. Tear out this ad and send it to anyone in Washington you think might be helpful. Urge the Government to initiate a cohort program for population stabilization. And write us for two things: (1) Measures the Government can take to implement such a program. (2) Additional things you can do to help.

We can't afford to wait much longer. Every day lost only compounds the problem. The time to act is now.

CURRENT GOVERNMENT PROGRAMS (1965 Estimates from 1969 Budget)	
Space Program	.....\$5 billion
Grants to States for Welfare	.....\$3 billion
Health and Death Control Programs	.....\$2.5 billion
Food for Peace Program	.....\$1.2 billion
Supernutrient Plan (First Model)	.....\$170 million
Ad Pollution	.....\$10 million
Cong. Control	.....\$10 million
Rat Control	.....\$5 million
Population Control (United States)	.....\$3 million
Population Control (Foreign)	.....\$3 million

CAMPAIGN TO CHECK THE POPULATION EXPLOSION
EMERSON FOOT, CHAIRMAN

<p>CAMPAIGN TO CHECK THE POPULATION EXPLOSION 40 EAST 42ND STREET NEW YORK, N.Y. 10017 PHON: (212) 966-6489</p> <p><input type="checkbox"/> Please send me more information and tell me how I can help.</p> <p><input type="checkbox"/> Please send me _____ free reports of this ad.</p> <p>NAME _____ ADDRESS _____ CITY _____ STATE _____ ZIP _____</p>	<p>EUGENE B. BLACK, former head, World Book HAROLD W. BOGROW VOP Transportation Equipment Co. DR. STEVEN BRONCK, President, Rockefeller University THOMAS D. CASH, Chairman, Cyber Corporation VIRGINIUS DABNEY, Editor, Richmond Times Dispatch AUGUST DEBETH, Author GENERAL WILLIAM H. DRAKE, Jr., former Ambassador in NATO MARGUERITE E. SCOTT, former Chairman, Federal Reserve Board ROBERT E. FOLEY, Director, Pillsbury Company</p>	<p>HENRY C. FLOWER, Jr., former Vice Chairman, J. Walter Thompson Co. DR. PHILIP H. HANSEN, University of Chicago ISLAND HAZARD, Pittsburgh-Pleasant Glass Co. BARRY MOORE KEMMEL, the National Assembly MRS. ALBERT D. LASKER MRS. CORDELL A. MAY DR. ASHLEY MONTAGU, Anthropologist RICH MOORE, former Chairman, St. Lawrence Institute Corporation DR. BENJAMIN NEBELINE, Union Theological Seminary JOHN NAYDEN</p>	<p>DR. LINUS PAULING, Nobel Laureate FRANCIS P. PLYMPTON, former Deputy U.S. Rep. in the United Nations ROCKWELL FREUTZ ENZO ROSSI, Public Opinion Analyst JONAS SAIK, Director, The Salt Institute ADOLF W. SCHMIDT, Governor, 1. Mellon & Sons CHARLES E. SCHEFF, Chairman, Scripps Howard Newspapers IRVING L. STRAUSS, former Secretary of Commerce ROBERT G. WEBER, Glassware Brewing Company DR. DONALD WOOD, California Institute of Technology</p>
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Those signing this statement do so in their personal and individual capacity. The institutional and business affiliations are purely descriptive, carrying no implication of authorization or participation by the organization named.



FIG 1.7.

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The Growth Paradigm

a Plane Never Allowed to Land

The Growth Paradigm

a Plane Never Allowed to Land

THE BIRTH OF THE GROWTH PARADIGM

Economic growth is widely regarded as a key goal of national and international economic policies, not only across the political spectrum but also in all countries, and it has been dubbed the most important idea of the twentieth century. Yet, how did the pursuit of economic growth become a key priority taken for granted among social scientists, politicians, and the general public? For a good portion of the 20th century there was an implicit assumption that economic growth was synonymous with progress: an assumption that a growing Gross Domestic Product (GDP) meant life must be getting better.³⁴

“The recent global economic crisis has conspicuously demonstrated how dependent capitalist economies are on growth and how even minor reductions in growth rates were received with almost religious disappointment”

Sedlacek, 2011

John Robert McNeill has argued that the overarching priority of economic growth was easily the most important idea of the twentieth century. Although this statement

might at first seem exaggerated, there are good reasons that justify this view. Not only was the idea of economic growth at the core of the ideologies of the socio-economic and political systems whose competition marked the twentieth century, capitalism and communism in their different varieties. More importantly, the social and economic policies that were the result of the overarching priority of economic growth, or were justified by it, have fundamentally and irreversibly reshaped societies and the planet itself. Over the twentieth century, millions of people have come to take part in the production and consumption of ever increasing quantities of goods and services, even though extremely uneven over time and space.³⁵

At the same time, economic growth has caused environmental changes of unprecedented proportions that are threatening the livelihood of millions of people today, and even more so that of future generations. Ecologists, geologists, and historians have used the concept of the “anthropocene” to mark the fundamental transformations related to the fact that through the global spread of capitalist modes of production and living humanity itself has become the dominant geological force on planet earth.³⁶

Before the 1820s, when economic growth accelerated in the context of the industrial revolution, economic activity around the world had been characterized by periodic ups and

downs, only expanding by an average of 0.05% annually—as far as this can be measured retrospectively—and this was largely due to the slow increase of populations. Even more recently, the term economic growth was not widely used before the middle of the twentieth century, but during the 1950s advanced to become a key notion, not only within economics and other social sciences, but also in political discourses and everyday speech.³⁷

The term “growth paradigm” was first introduced by ecological economist Herman Daly (1972) to characterize the preanalytic vision of mainstream economists that justified their belief in unlimited growth. The term has since been employed rather vaguely by ecologists, political scientists, and in public discourse to describe the worldview associated with growthmanship. Growth has to be analyzed as a social paradigm in the making and legitimation of which the academic community of economists played a key role.³⁸

The idea of economic progress, preliminary growth theories, and macroeconomic policies geared towards expansion already emerged in the nineteenth and early twentieth century. Next, not until the 1950s did economic growth become the primary policy goal, the responsibility of governments, and the most salient indicator for national success and societal welfare. And finally, not before the mid-1950s did the notion that long-term unlimited economic growth was actually achievable gain acceptance, in connection with the birth of the first modern growth theories, and only since then has the narrative of progress become bound up with continuing growth of GDP.³⁹

HOW WAS THE GROWTH PARADIGM IMPLEMENTED IN SOCIETY?

How did growth become a self-evident concept in the postwar period? First, the growth paradigm was based on the claim that economic activity is adequately measured as the level of the national product. While presented as an objective, universal and technical device, the history of the contested making of this international standard reveals not only the inscribed reductions, assumptions and exclusions, but also its power to naturalize a particular mode of seeing the world and its potential for being turned into a universal metric of worth. Based on a long tradition of measuring the riches of kings and countries, official government statistics started to be developed in the context of the Great Depression of the 1930s and the related move to state planning in many countries.⁴⁰

The growth paradigm asserted that economic growth is a universal remedy for some of the most pressing challenges of modern societies and imperative to avoid economic and social crises. While the specific challenges that according to growth discourses could only be met by GDP growth continuously changed in the postwar period, depending on the socio-economic circumstances, the reliance on growth as a panacea has remained stable. The idea of economic growth – of continuously increasing levels of national output – was conspicuously absent from policy debates in the immediate postwar years.

Furthermore, the growth paradigm was reinforced by the belief and often implicit assumption that economic growth was practically the same as or a necessary means

34. THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD) ANNUAL REPORT 2008. 2008. Ebook. Public Affairs Division, Public Affairs and Communications Directorate.

35. McNeill, John Robert. 2000. *Something New Under The Sun: An Environmental History Of The Twentieth-Century World*. United States: W W NORTON & CO (NY).

36. Chakrabarty, Dipesh. “The Climate of History: Four Theses.” *Critical Inquiry* 35, no. 2 (2009): 197–222. <https://doi.org/10.1086/596640>.

37. AYRES, Robert U. *Turning Point: An End of the Growth Paradigm*. LONDON: EARTHSCAN, 1998.

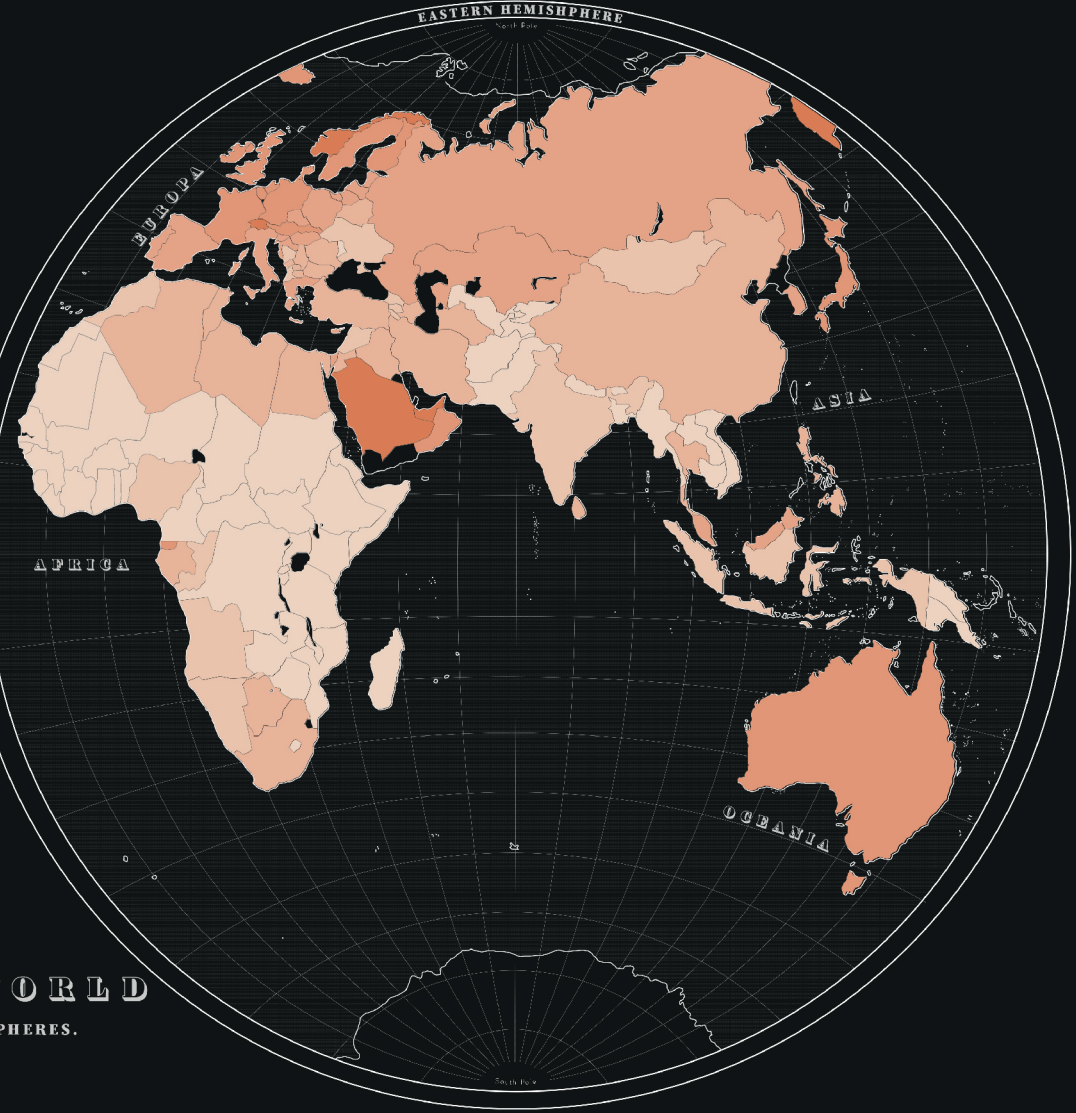
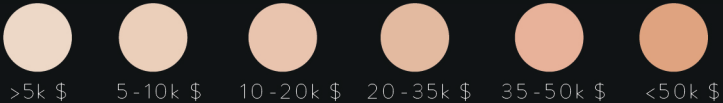
38. Matthias Schmelzer. “The growth paradigm: History, hegemony, and the contested making of economic growthmanship.” *Ecological Economics*, Volume 118, 2015

39. NOWLIN, C. (2017). *Understanding and Undermining the Growth Paradigm*. Dialogue, 56(3)

40. Chassé, Daniel Speich. 2013. *Die Erfindung Des Bruttosozialprodukts*. Vandenhoeck & Ruprecht.

GDP PER CAPITA

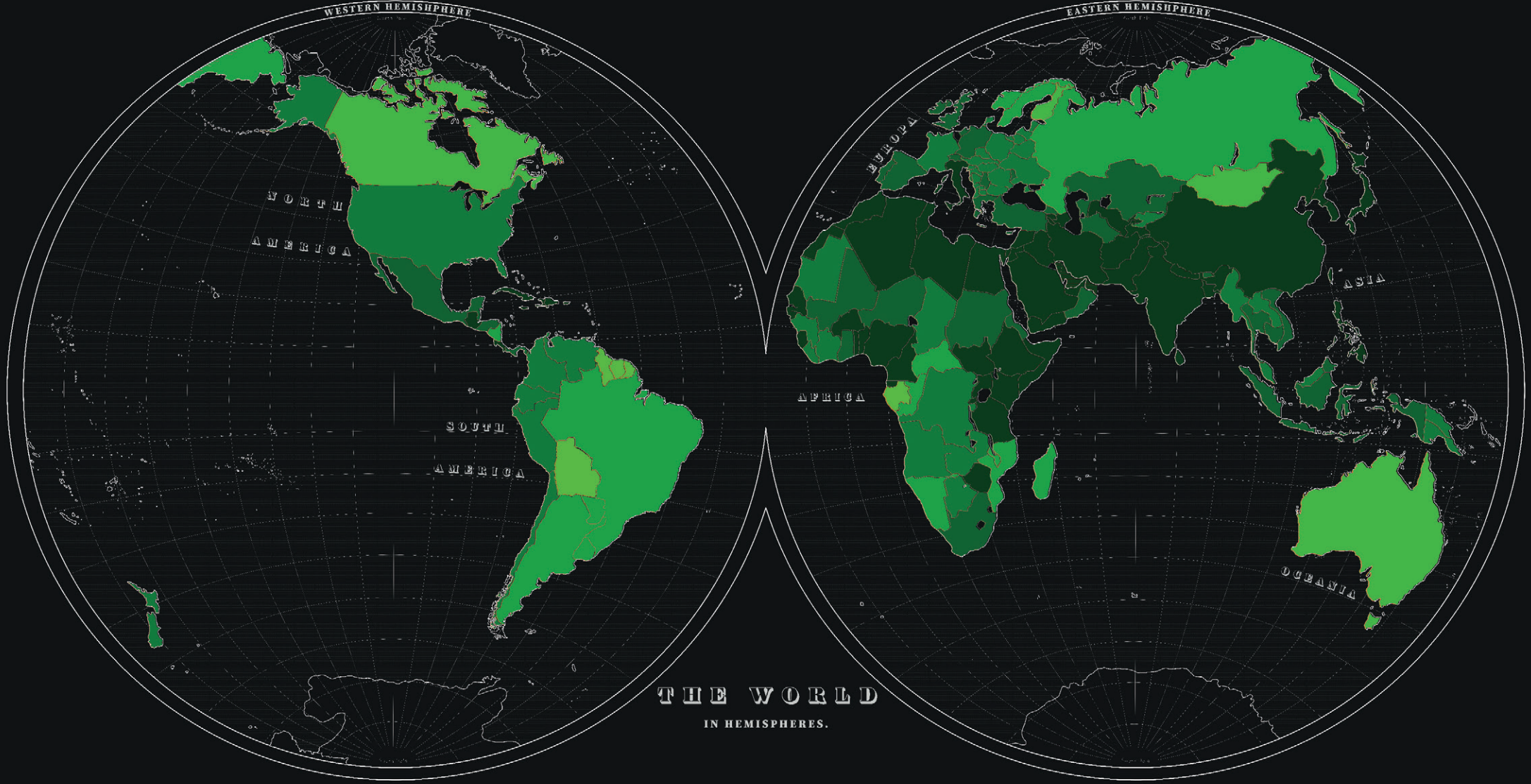
in the current period



THE WORLD
IN HEMISPHERES.

BIOCAPACITY PER PERSON

in the current period



THE WORLD
IN HEMISPHERES.

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The Growth Paradigm
 a Plane Never Allowed
 to Land

GLOSSARY

Great Depression: was a severe worldwide economic depression that took place mostly during the 1930s, beginning in the United States.

GDP: Gross Domestic Product is a monetary measure of the market value of all the final goods and services produced in a specific time period

42. Horkheimer, M., Adorno, T.W., 2006. *Dialektik der Aufklärung: philosophische Fragmente*. 16th ed. Fischer Taschenbuch Verlag, Frankfurt a.M.

43. O'Bryan, S., 2009. *The Growth Idea: Purpose and Prosperity in Postwar Japan*. University of Hawaii Press, Honolulu.

44. Raworth, K., 2018. *Doughnut economics. White River Junction: Chelsea Green Publishing.*

45. LUSARDI, A., & MITCHELL, O. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics and Finance*, 10(4), 497-508. doi:10.1017/S1474747211000448

46. Raworth, K., 2018. *Doughnut economics. White River Junction: Chelsea Green Publishing.*

of achieving some of the most essential ambitions of societies such as social well-being for all, progress, modernity, societal dynamism, national power, or prestige. Steady growth and the prospect of ever increasing consumption helped resurrect the belief in progress, which had been so seriously eroded by the Great Depression and the two World Wars.⁴²

The technical, scientific, and politically neutral aura of growthmanship, which was underwritten by an array of tools for measuring, counting, predicting, and managing growth, could easily be contrasted to what had come to be seen as the irrational management of states in the 1930s, to nationalistic and imperial rivalries, and to the ideology of fascism.⁴³ Yet despite this technocratic appeal, during the 1950s and culminating in the 1960s the idea of economic growth became charged with multifaceted meanings, suffused with arresting symbolisms, and imbued with ardent assumptions, all of which produced the connections between GDP-growth and core societal values mentioned above.

We're financially addicted to growth because today's financial system is designed to pursue the highest rate of monetary return, putting publicly traded companies under constant pressure to deliver growing sales, growing market share and growing profits because banks create money as debt bearing interest which must be repaid with more. A

growing GDP seems a sure way to do that. We are socially addicted to growth because thanks to a century of consumer propaganda, which fascinatingly was created by Edward Bernays, the nephew of Sigmund Freud, who realised that his uncle's psychotherapy could be turned into very lucrative retail therapy. If we could be convinced to believe that we transform ourselves, every time we buy something more.

None of these addictions are insurmountable, but they all deserve far more attention than they currently get. Because the consequences of this Growing Paradigm are here: global GDP is 10 times bigger than it was in 1950. And that increase has brought prosperity to billions of people but the global economy has also become incredibly divisive, with the vast share of returns to wealth now accruing to a fraction of the global 1% and the economy has become incredibly degenerative rapidly destabilising this delicately balanced planet.⁴⁴

It's time to choose a different perspective. Because humanity's 21st century challenge is to meet the needs of all people within the means and resources of this planet, so that we and the rest of nature can thrive. Progress on this goal isn't going to be measured with the metric of money. We need a new dashboard of indicators.

CAN ENDLESS GROWTH BE SUSTAINED WITHIN PLANETARY BOUNDARIES?

A fundamental often-implicit supposition underlying the growth paradigm was that economic growth could potentially continue at least for decades, if not forever, provided the correct governmental and inter-governmental policies were pursued. Most fundamentally, interested in the newly emerging conceptualization of the economy's self-contained totality of monetary flows forming the relations between production, distribution, and consumption within national boundaries.

This notion, which is nowadays largely taken for granted but emerged only in the 1930s and 1940s in connection with the rise of oil, superseded a view of economic processes conceptualized in terms of physical flows of resources, matter, and energy, which suggested limits to growth. In contrast, the new measures such as GDP, which focused on the speed and frequency with which paper money changed hands, could expand without increasing in physical or territorial size.⁴⁵

This paradigm has left us with mass consumerism over half a century later, with economies that have come to expect demand and depend upon non ending growth, because we're financially, politically and socially addicted to it.

Many people don't have the food, healthcare, education, political voice housing that every person needs for life, for dignity and opportunity. At the same time we cannot let our resources overshoot the ecological ceiling because we put so much pressure on the planet that we begin to kick it out of kilter.

Climate breakdown, acidifies the oceans, a hole in the ozone layer, pushing the planetary boundaries of the life supporting systems that have for the last 11,000 years made such a benevolent home to humanity.

This double sided challenge to meet the needs of all within the means of the planet that invites a new shape of progress. No longer this ever rising line of growth. Thriving in dynamic balance between the foundation and the ceiling.

This double sided challenge to meet the needs of all within the means of the planet that invites a new shape of progress. No longer this ever rising line of growth. Thriving in dynamic balance between the foundation and the ceiling.

20th century economists assured that if growth creates inequality, don't try to redistribute because more growth will even things up again, if growth creates pollution, don't try to regulate because more growth will clean things up again. It turns out, it doesn't. We need to create a new paradigm, a new perspective of growth and economies that tackle this shortfall and overshoot. Some still carry the hope of endless green growth. The idea that thanks to dematerialization exponential GDP growth can go on forever while resource use keeps falling. But the data indicates something different. This dependency on unending growth cannot be decoupled from resource use on anything like the scale required to bring us safely back within planetary boundaries. Growth is a phase, many economies like Ethiopia and Nepal today may be in that phase. But look again to nature, nothing in nature grows forever. It is all part of a cyclical process.⁴⁶ Why would we imagine that our economies

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The Growth Paradigm

a Plane Never Allowed to Land

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GLOSSARY

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Ecological Boundaries: a "safe operating space for humanity"

would be the one system that could avoid this trend and succeed by growing forever?

We need economies that thrive, whether or not they grow. It's a profound shift in mindset. This is the shift we needed for humanity to thrive this century.

We need financial, political and social innovations that enable us to overcome this structural dependency on growth. So that we can instead focus on thriving and balance within the social and the ecological boundaries.

"What to do when the increase in real income itself loses its charm?"⁴⁷

————— **W. W. Rostow**

47. Rostow, W. W. 1991. The Stages Of Economic Growth: A Non-Communist Manifesto. 3rd ed. Cambridge: Cambridge University Press.

02

FROM GROWTH TO DEGROWTH

the Cyclical Process of Paradigm Change

The crisis generated by growth has forced us to envisage a new paradigm, and so degrowth.

The new paradigm is formulated around the necessities of using the planet as a reference scale of intervention, and defining limits in terms of resources usage and development.

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the Cyclical Process
a Change of State

GLOSSARY

ONU: United Nations Organization, an international organization of independent states, with its headquarters in New York City, that was formed in 1945 to promote peace and international cooperation and security.

OXFAM: Oxford Committee for Famine Relief, is a global movement, founded in Britain in 1942, of people who are fighting inequality to end poverty and injustice. Across regions, from the local to the global, we work with people to bring change that lasts.

48. Lucrezio. 1989. *Della natura*, Sansoni Firenze

49. Thomas Malthus. *An Essay on the Principle of Population as It Affects the Future Improvement of Society*, with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers (London: J. Johnson, 1798).

50. Raworth, K., 2018. *Doughnut economics*. White River Junction: Chelsea Green Publishing.

51. Stiglitz, J.E., A.Sen, J.-P. Fitoussi. 2009. "Report by the commission on the Measurement of Economic Performance and Social progress", www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf

The Cyclical Process

a Change of State

TEMPORALITY OF PARADIGMS

The current state of the art of the world is comparable to "the fable of young girls in their prime, who collect water in a perforated vessel, which, however, cannot be filled in any way."⁴⁸ The positive image of endless growth promoted over the second half of the last century has finished its cards. The effects of capitalist development have already appeared in terms of enormous social inequalities between developed and developing countries, and even within developed countries themselves, and through a profound environmental impact by human beings. According to the cyclical model of paradigm change, the current one has entered a crisis stage since several decades. As a matter of fact, the problems related to the current vision of the world have appeared since the second part of the last century with a reduced quality of life (due to pollution) and global environmental problems.

Indeed, the doubts advanced since the '70s by numerous intellectuals about the issues related to endless growth have started to raise awareness toward the crisis of the paradigm. We can assume that the current status of our planet and

our society, as a whole, requires a paradigm change.

A paradigm change needs a proper amount of time to proceed because it does not belong to the physical scale but rather to the imaginary one. Thus, in order to be effective the shift from a paradigm to another should be voluntary and assumed as a logical transition.

Indeed, as it is proposed in the following pages, the process of a paradigm change from growth to an alternative one has started several decades ago through the actions of several intellectuals. The process of paradigm reconfiguration has been pursued through an educational initiative that aimed to raise awareness toward the problem of growth, and so through a process of criticism.

Some of the reflections and critiques about the growth paradigm are collected in the following pages, with the intention to generate a path of decolonization of the imaginary that would lead to comprehending the new paradigm exposed in the lasting part of the chapter.

Growth Cannot be Sustained

Thrivingness within Limits

UNSUSTAINABLE ENDLESS GROWTH

The investigation about the current paradigm of growth highlights its global presence and its genesis and effects. The data about population, resources and economic development call attention to a fundamental concept: unlimited growth cannot be sustained in a closed system with finite resources, like our planet. Numerous thinkers from different fields have contradicted the endless growth scenario over the last centuries, spanning from philosophy and economy. These persons underlined in different directions the contradictions of unlimited growth in the close system represented by our planet; indeed, endless growth can be sustained by a constant increase in population that induces a persistent demand in resources, or on the other hand, through a steady rise in commodities demand that causes higher exploitation of resources. Taking, for example, the reflections advanced by Thomas Malthus, that in 'An essay on the principle of population' expressed that: "The constant effort towards population, which is found to act even in the most vicious societies, increases the number of people before the means of subsistence are increased. Therefore, the food which before supported seven millions must now be divided among seven millions and a half or eight millions. The poor consequently must live much worse, and many of them are reduced to severe distress."⁴⁹ The reflections of Malthus regard the impossibility to

imagine a constant population growth, because in terms of natural resources, and especially nourishments one, it will be impossible to produce endless food, even if technological development has helped us to increase the efficiency of our production. On the other hand, the considerations about a new economic indicator as to the doughnut, proposed by Kate Raworth⁵⁰, which paraphrases the words of the philosopher Amartya Sen, tried to create a compass capable of tracing a direction to the economy and society.⁵¹ And so an attestation about the impact of our commodities toward the natural environment, in contradiction to basic social needs such as water, education, and employment, just to mention some of them.

As illustrated in the previous chapter, the effects of unlimited and undirected growth have acquired a global scale in the course of the second half of the last century through a globalized economy that has colonized both physical space and the imagination of humans. Thus, the counteracts started to adopt a global scale with international organizations, such as ONU and OXFAM, and through an educational program to reconfigure the habits of the population. In a nutshell, the reflections advanced by intellectuals about the contradictions of unlimited growth are united by two common denominators: the concept of limit and the global scale.

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Growth cannot be Sustained
Thrivigness within Limits



FIG 2.1. top left. News broadcast about Growth in Post Pandemic Africa. We would like to stress here the contradiction of the data we analysed and this news broadcast. Source: <https://www.africanews.com/>



FIG 2.2. bottom left. News broadcast about Growth in USA. Source: <https://www.youtube.com/watch?v=aB8-Zhhu0R4>

FIG 2.3. top right. News broadcast about Growth in USA of 4.1%. Source: <https://www.nbcnews.com/>

FIG 2.4. bottom right. News broadcast about Growth. Source: <https://www.foxnews.com/>



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Growth cannot be Sustained

Thrivigness within Limits

GLOSSARY

Club of Rome: The Club of Rome was founded in 1968 at Accademia dei Lincei in Rome, Italy. It consists of one hundred full members selected from current and former heads of state and government, UN administrators, high-level politicians and government officials, diplomats, scientists, economists, and business leaders from around the globe. It stimulated considerable public attention in 1972 with the first report to the Club of Rome, *The Limits to Growth*.

52. Boulding, K. (1966) *The Economics of the Coming Spaceship Earth*. In: Jarrett, H., Ed. *Environmental Quality in a Growing Economy, Resources for the Future*/ Johns Hopkins University Press, Baltimore.

53. Heilbroner R. 1970, *Ecological Armageddon*, The New York Review of Books, www.nybooks.com/articles/archives/1970/apr/23/ecological-armageddon/

54. Donella H. Meadows et al., *The Limits to Growth: A Report on the Club of Rome's Project on the Predicament of Mankind* (New York: Universe Books, 1972).

55. Peccei, Aurelio. 2014. *La Qualità Umana*. Roma: Castelvecchi.

THE QUESTION OF LIMIT

The notion of limit has had a lasting presence in the imagination of humankind, both as a boundary toward the investigation and the exploitation of resources with the purpose to maintain an equilibrium between humans and the environment. Pan metron ariston (all things in the right measure), used to say the ancient Greeks with regards to ambition and natural resources usage.

In the last two centuries, the idea of limit has started to reshape our reflection with regards to the limit imposed by our biosphere to regenerate renewable resources. As mentioned earlier, the inner contradiction of unlimited growth stands in the impossibility of perpetuating it in a compact system with finite resources. In the '60s, Kenneth Ewert Boulding has metaphorized the conditions comparing Earth to a "spaceship, in which the availability of anything has a limit, as regards both the possibility of use and the capacity to accept waste, and in which therefore it is necessary to behave as in a closed ecological system capable of regenerating continuously the materials, using only an external relationship of energy."⁵² And, it has stimulated the economist Robert Heilbroner to conclude that, "as in all spaceships, the perpetuation of life requires that a meticulous balance be maintained between the aircraft's ability to sustain life

and the demands expressed by the spacecraft's inhabitants."⁵³

In the second half of the XX century, there have been numerous publications and conferences toward the limitation of human impact on the environment. However, the publication that generated an important debate, and general awareness, about the biological limit of our planet was the 'Limit of Growth' in 1972.⁵⁴ The report was commissioned by the Club of Rome, one of the essential think-tanks at the time and the present day, and it sought to develop future scenarios of the world between 1970 and 2100. The research highlighted the contradictions caused by frenetic growth in material consumption, and it introduced the climate debate in the global agenda. The study suggested that the unlimited rise of material commodities consumption would be the inner problem of environmental issues. At the time, this was in total contradiction with the general paradigm of growth. The report did not talk about unlimited economic growth but rather about unlimited impact growth caused by the exploitation of resources and pollution. The economic growth can be perpetuated but in fields that do not require any resources exploitation, such as education, culture, sport, just to mention some of them. The research has been dramatically influential because it firstly described, in an incredible elementary approach, possible

scenarios of the world according to human impact.

As the title suggests, the whole corpus of reflections gravitates around the notion of limit, in terms of resources exploitation, and so of consumptions, in terms of pollution, and so of emissions, and in terms of population. The strand of thought that led to the maturing of the 'Limits of growth' report can be traced through the words of Aurelio Peccei (the supervisor of the research). The extract comes from the biography of the Italian thinker, and it profoundly expresses the culture of the growth paradigm in that period and its arrogance toward divergent thinking.

The concept that the Earth is a body of finite nature is certainly not new. But the corollary, developed in the report, that, given the finite dimensions of the planet, there are necessarily limits to human growth, was decidedly against the culture of expansion, dominant in the world; and it became emblematic of a new way of thinking, attacked as fiercely as it was fiercely defended. The successes of the material revolutions have made this culture arrogant, which was and is that of a civilization of quantity which neglects quality, and which nevertheless ignores the limits of the real biological capacity of our planet - limits within which life is supported - and exploits the vital resources in a prodigal and capricious way, while it uses insufficiently human capacities. Leaving aside the increase in population for a moment, let's see that of production and consumption. When there are no remedies for the ills of society, it is compensated for by faith in development, and the expansion of the economy is considered in itself a supermedicine. As if to say that, by producing in abundance, it is possible to meet all needs and satisfy any demand;

or, if this is lacking, it can be developed, in order to establish a new balance - always at higher quantitative levels, which, they say, is good for the economy, and therefore for society. For a long time, no one really dared to question that this kind of material growth really possessed thaumaturgical powers, and that economic expansion was a good in itself. It has only recently become clear that an abundance policy can actually solve some problems and alleviate others, but that sometimes it is only a palliative; and that certain causes of human dissatisfaction cannot be eliminated by hiding them under a bag of products. However, even if growth can solve all problems, the report showed that material growth cannot continue forever. From this central argument, the report went on to describe how some of the factors analyzed - exhaustible resources, persistent reliance on growth, long decision delays, short-term planning horizons - are causes of instability, overproduction and ultimately collapse. Partly under the influence of the relationship, the myth of growth began to deflate like a balloon stung by a pin. It is no wonder that reactions to such an unorthodox position were mixed.⁵⁵

The words of Peccei synthesize the concept of limit, both in terms of consumption and production and of population growth. In addition, a third important reflection advanced by Peccei regards the connections between material consumption and wellbeing, which will be discussed in a later section of the present chapter.

Nowadays, the contradictions between growth and natural resources are more aggravated than in the decades when Peccei wrote his considerations. As shown in the maps below, most of the nations' ecological

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56. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti.

57. Lakoff, George, and Mark Johnson. 2017. *Metaphors We Live By*. Chicago, Ill: University of Chicago Press.

58. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti.

59. United Nations Department of Economic and Social Affairs, Sustainable development. Conferences, <https://sdgs.un.org/conferences>, Accessed November 2021

60. Mauna Loa Observatory. Trends in atmospheric carbon dioxide. <https://gml.noaa.gov/ccgg/trends/>, Accessed November 2021

61. <https://climate.nasa.gov/vital-signs/carbon-dioxide/>

62. IPCC. Report, <https://www.ipcc.ch/reports/>, Accessed November 2021,

63. Ulrich Beck. 1992, *Risk society: Towards a new modernity*. New York, Sage Publication Ltd

footprint is negative, so these territories demand more resources than those available.

Regarding most consumer countries, if the whole current population would live with the U.S. standards of life, we would need almost eight planets to produce the required resources, and around four if we would live with Italian or Greek ones. Thus, not having even two planets at our disposal, we are required to impose a limit toward our consumption dramatically. As described by Wolfgang Sachs, the dilemma of natural resources exploitation can be read as the clash between two different time scales: the time scale of modernity that collides with the time scale that governs life on earth. Indeed, the imposition of industrial time on natural rhythms cannot be sustained without paying an impressive price. Animals are kept in appalling conditions; the disease spreads, pollution advances, soil degrades, species diversity shrinks, and evolution does not have enough time to adapt.⁵⁶

The emergency to re-equilibrate production rhythms to the natural ones is mandatory, and it requires the creation of a limit about our production. As defined by the physicist W. Pauli:

“Don’t expect the earth to produce more. Expect humans to do more with what the earth produces.”

The indispensable alignment should

be advanced at two levels, the physical one and most importantly at the imaginary one. Indeed, as illustrated by George Lakoff and Mark Johnson in their book *Metaphors We Live By*, the Western culture is molded by the notion of progress and development.⁵⁷

In the last part of the current chapter, we discuss the primary need to decolonize the imaginary growth paradigm, in order to accept a nonlinear growth in the future. The limitation of human production appears to dictate a boundary to human development and wellbeing; however, “limits have a dual nature, being able to have both a constricting and a facilitating function: they function as a constraint only for a particular category of things, but they open up possibilities for another order. On the one hand, the borders of the canvas restrict the surface available to the painter, on the other, however, they determine the basis from which a sophisticated creation can arise.”⁵⁸

In a nutshell, limits can generate profound new possibilities in terms of creativity, use of resources, and especially in the use of time.

THE NECESSITY OF THE GLOBAL SCALE

The second common denominator among the reflections about the contradictions of growth is the global scale.

Indeed, as mentioned in the preface, the paradigm scale should be addressed according to the scale of the effects rather than to political or geographical borders. Thus, as highlighted in the previous chapter, the consequences of growth have spread globally through the process of globalization, and they require a parallel global set of responses to mitigate them. Despite some of the provisions of The limits of growth being incorrect, given the large audience, the research has motivated the formation of Conferences and Commissions about the question of environment and human impact, such as the United Nations Conference on the Human Environment held in Stockholm, 1972, in Rio, 1992, and in Kyoto, 1997.⁵⁹ The awareness that climate change and resource contractions would not be limited to a geographical area but rather to the planet-scale has motivated numerous nations to collaborate with the purpose of mitigating these effects. However, until today these conferences and collaborations have not managed to alleviate the most

critical environmental impact factors, such as deforestation, carbon emission, and consumption. Taking for example, the concentration of carbon dioxide in the atmosphere since 1959, when the Mauna Loa Observatory has started to collect data:⁶⁰ An equal trend is visible in fertilized, deforestation, and biodiversity concentration, as stated in the IPCC reports over the years.⁶² Unfortunately, these international collaborations have not managed to mitigate the environmental effect of the growth paradigm strongly. The global results are perfectly described by the definition of a Global risk society that is not ‘safe’ in any part of the planet. Indeed, “those distances that once kept the zones of accumulation well separated from those of exploitation and the winners from the losers are shortening. As a result of globalization, the world has become smaller not in the positive aspects but also in the negative ones”.⁶³ The effects of the current paradigm have surpassed national borders and geographical ones, and they requested an equal international perspective. The

- in 1959 the concentration was in the region of 315,98 ppm;
- in 1987 the concentration reached 348,98 ppm (so fifteen years after the first UN conference about climate), and it was the last year in which the amount remained below the threshold of 350 ppm, which is defined as the planetary boundary;
- in 1992 the concentration raised to 356,27 ppm, the same year in which was organized the Rio de Janeiro UN summit about the environment;
- in 1997 the concentration increased to 363,47 ppm, the same year in which was approved the Kyoto Protocol;
- in 2009 the concentration raised again to 387,35 ppm, the same year in which it was signed the document that limited the global temperature rise to 2°C in respect to the preindustrial one;
- in 2015 the concentration increased steadily to 402,22 ppm, the same year in which was held the New York UN summit about the environment;
- in 2021 the concentration reached its peak of 416,87 ppm.⁶¹

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world meetings have highlighted the necessity of international cooperation about the limit of growth and the global effects generated by endless consumption. The session's common denominator has been the definition of 'limit' in terms of emission, production, consumption, and of course, growth. Furthermore, international cooperation was proof of the consequences of the global nature of the growth paradigm; thus, it would have been ineffective to develop separate national policies and interventions. The difficulties in comprehending the world on its scale and long-term perspective were highlighted at the beginning of the present chapter. Still, it has become a requirement in the XXI century debate about paradigm. The inner crisis of the growth paradigm, generated by the contradictions it has created, has been highlighted by several critics to give rise to a paradigm shift, as shown in the previous pages. However, to imagine a paradigm that would generate positive results in global terms, the thinkers have encountered numerous dialectic themes such as efficiency and sufficiency, environment and equity, local and international responsibility.

These themes have raised numerous questions, such as who are the beneficiaries of growth? And of ecological transformations? What's the personal role of the reconfiguration? What does ecology

mean? Taking, for example, the confrontation between two themes: environment and justice, in which 20% of the world's population that benefits from the highest incomes claims for themselves 85% of the forest, 75% of mineral reserves, and 70% of the energy existing on the planet, it is unthinkable - even taking into account a significant savings potential - that equity can be based on such a standard of living.⁶⁴

A paradigm reconfiguration should address these ethical problems, and at the same time, respond to climate change and human consumption. Thus, the complexity of the questions requires a broad perspective that could manage to reflect globally and in long-term scenarios.

Starting from these condensed observations about the contradictions and crisis of the growth paradigm, we would like to introduce the result of these decades of reflections by presenting a new paradigm for the present and the future: Degrowth.

We would like to present the new paradigm and conclude with the present one through a question advanced by Wolfgang Sachs:

"How is it possible to offer hospitality to more than double the current inhabitants of the planet, without destroying the biosphere for generations to come?"

64. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti.

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FIG 2.2. Snapshots from the movie Sci-Fi Movie They Live in 1988 where the protagonist appears to see the "true message" behind the advertisements when he wears some "special glasses".
Source: <https://www.youtube.com/watch?v=g4XiKChyK7A>

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GLOSSARY

Third World: was derogatory phrase that has been used historically to describe a class of economically developing nations.

65. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity.

66. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti

67. Raworth, K., 2018. Doughnut economics. White River Junction: Chelsea Green Publishing.

68. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.59.

69. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.60.

70. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.12.

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THE INTRODUCTION OF DEGROWTH

Degrowth does not resemble any sustainable growth or development perspective presented in recent years; it ultimately embeds the notion that growth is no longer possible. The concept of degrowth as the new paradigm should be comprehended as a process of a series of reflections that started in the late 19th century with John Ruskin, Thomas Henry Huxley, and others, appeared in the '70s through the publication of intellectuals as Nicholas Georgescu-Roegen, E.F. Schumacher, and Ivan Illich, and still continues today.

Indeed, the notion of degrowth should not be grasped as an illumination that instantly appeared in a certain period but rather as an accumulation of investigations over a century, an open contemplation that needs constant criticism and stimulation. Indeed degrowth is simply a slogan that brings together groups and individuals who have formulated a radical critique of development and are interested in identifying the elements of an alternative project for a post-development policy. It is, therefore, a proposal to reopen the space of inventiveness and creativity of the imaginary, blocked by economists,

developmental and progressive totalitarianism.⁶⁵

Degrowth has gathered together intellectuals and activists from a broad spectrum of fields that share a common belief toward ecology, but ecology is defined as global citizenship. It is the search for a civilization that can extend the hospitality of the planet to twice the number of people today without ruining the biosphere for subsequent generations.⁶⁶

The new paradigm is based on the imagination of an alternative world idea based on a worldwide balanced redistribution of resources and services that would allow a world social basement for living. Indeed, degrowth takes as a reference scale of action the entire planet.

As mentioned in the previous paragraphs, the effects of the growth paradigm have reached almost every part of the globe, and so the crisis of it would affect an equal area. So, the reconfiguration of growth would be global or it would not be possible, and it would overcome national and political barriers.⁶⁷

As a matter of fact, the problems in terms of inequalities and environmental impact are not self-generated within a defined territory but rather determined by a complex system of factors spread worldwide. Indeed, if we could think of a less destructive mode of production for the environment, we would have made a truly desirable "leap backward." Because, in reality,

what for us would be a turning back, would represent a great advantage for the peoples of the Third World. It would simply question the comfort of the life of a small minority of the world population who have lived up to now in a completely normal way.⁶⁸

The new paradigm requires a 'step-back by 'developed countries' inhabitants in terms of consumption, use of resources, and pollution, that will allow in the longer period to mitigate the environmental impact of humankind, and at the same time to transfer part of this reduction to 'less developed' countries that have not had access to such wellness. Degrowth recalls incredible importance to the ethic of mutual aid, and it calls attention to a global transformation that everyone will benefit from. Indeed, the demand for society at global risk will, first of all, presuppose the lowering or at least the transformation of the higher levels instead of raising the lower ones. Against the backdrop of a drastic global inequality in the use of resources, it is the North, with its outlets in the South, that needs structural adjustment. In addition to the redistribution of wealth, the North is called upon to redefine its production and consumption models in such a way as to allow the South to have the right to use resources as well.⁶⁹

The so-called 'step-back' is favored by the demographic change occurring in the most consumeristic regions such as the U.S., Europe, Japan, Australia, and Canada. Indeed, for the first time in history, these areas are experiencing a steady population decline that will impose the necessity of degrowth. Indeed, the demographic contraction of these regions, and their aging, require a paradigm reconfiguration that will use this

population trend to generate positive effects worldwide. In addition, assuming that in the future the global population will have an equal demographic trend of these countries, the demographic shrinkage scenario would affect the entire planet, and degrowth as well. Population contraction implies a reduction in the number of users, and so of consumers, as well as in the number of producers. Thus, it can be assumed that differently from growth, the degrowth status is surplus rather than scarcity. If in the past a growing population would require an increasing number of services, commodities, and infrastructure such as school, food, and cinema, in a shrinking population scenario the number of these services would exceed the actual demand, creating a constant status of surpluses. The population downtrend implies a whole reconfiguration in the economic, social, and political sphere. In addition, the contraction in the use of resources in the most developed countries would transfer them to less-developed ones, letting them reach the so-called 'social basement.' As a matter of fact, speaking of social justice means speaking of the availability of resources, and using the planet as a scale of reference, and so the world population as a sample, population shrinkage in some areas would allow the humans in deprived areas to make use of the surplus resources.⁷⁰

On the other hand, population decline in the regions mentioned above will have a positive impact in environmental terms, indeed those areas correspond to the one with the higher footprint, and so with the higher effect toward nature. The reduction in the population will reduce the natural total impact of those regions to mitigate the impacts of climate change in the future.

Despite the possibilities unveiled by

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GLOSSARY

Imaginary: existing only
in the imagination.

Decolonization:
is the undoing of
colonialism, here it is
used metaphorically to
intensify the separation
needed from the
imaginary.

population shrinkage in terms of human impact over the environment and inequalities among 'developed' and 'not developed' regions, the time needed to generate positive effects solely through population decline do not correspond to the urgency of environmental impact and the inequalities generated by growth over the last centuries.

DECOLONIZATION OF THE IMAGINARY

With the purpose to generate positive effects, in the short and medium long-period, for the environment and social inequalities, a paradigm reconfiguration towards degrowth is required. As a matter of fact, the 'step-back' should be assumed as a voluntary action from the most developed countries' populations with the purpose of achieving the positive effects presented ahead. The current society can be defined as a society of growth and so be dominated by a growth economy principle. - Growth for growth becomes the main goal of life, if not the only one.⁷¹

Alternatively, a degrowth society is led by the idea that the only permissible principle is that every citizen of the world has an equal right to use natural resources. It should be added, however, that this principle must not be confused with a planetary redistribution plan; rather, it is an ethical principle that concerns the way we behave.

Thus, considering that the natural resources used by most developed countries are exploited at the expense of less developed ones, a degrowth society would react with a 'step-back.' It will reduce its consumption, and it will completely reconfigure its own set of values and ideas, which were earlier based on growth, and especially economic growth.

As a matter of fact, a growing volume of objects for thousands of needs makes sense only in the context of a view in which happiness grows with the increase of goods. With each new generation of commodities resists the promise that further accumulation of goods will cause human satisfaction to rise again. However, a growing volume of objects does not correspond to an equal increase in happiness, and on the other hand, cannot be sustained on our planet. Nevertheless, the products no longer play a role in the battle for survival, but in that of experience. In such a context, the relationship between the consumer and the product is primarily forged in the imagination. Therefore, the expectation that rich societies may one day reach a level of saturation has not yet come true: when commodities become cultural symbols, there is no end to economic expansion.⁷²

According to this point, the problem of the growth paradigm is that it belongs to the sphere of the imaginary, and it can only

be eradicated through any technical approach. Indeed, the process of imaginary decolonization could be carried out by recognizing our imaginary and awareness about the contradictions and effects that our choices produce according to the paradigm in position.

Recognizing that our culture and our involuntary actions produce effects that overcome our imagination, would help decolonize our imaginary and accept degrowth. It is fundamental to recognize our contribution to the growth paradigm establishment and perpetuation and our more relevance in the reconfiguration of the paradigm.

Therefore, degrowth is partly based on self-responsibility in our habits, interests, and environmental impact. In this sense, degrowth is based on voluntary action and a voluntary reconfiguration of the paradigm that will not be imposed from above but rather acquired through a process of imaginary transformation. Indeed, "the fact that Jewish people lived to worship God, while we live to increase the internal product is not a given of nature, nor fruit of the economy or sexuality. On the contrary, these are constitutive and fundamental orientations of the imaginary that give meaning to existence."⁷³

The self-mitigation of our impact toward resource exploitation can be compared as a process based on sufficiency, where sufficiency mirrors our awareness and responsibility about the effects of our choices. Indeed, the imaginary transformation is based on the idea that the awareness about the negative and positive impact of our decision, in terms of consumption and use of resources, would possibly lead to reconfiguring our paradigm through

voluntary action. In this sense, the imaginary reconfiguration would put in crisis the whole aspect of a capitalistic economy based on material accumulation without boundaries. Thus, reconfiguring the imaginary toward degrowth would be possible solely if we knew our choices' impact and inequalities. So, in a period like this, political scientists and militants (those with a passion for the common thing), must criticize the present and remind people that there have been historical epochs in which man was different, in which he acted in a historically creative way, in which he acted as an establisher. Intellectuals and activists should remind us that our habits and our imaginary are an artificial construction molded by the society in which we live. Therefore, degrowth does represent a unique occasion to deconstruct our imaginary growth that is ruining the biosphere and creating enormous inequalities in the world. As described by Paul Ariès, We are growth objectors - because it will no longer be possible to continue with the dynamics followed up to now. Our battle is, above all, a battle of values. We reject this society of work and consumption in the atrocity of its ordinariness and not only in its excesses.

The difficulties in reconfiguring the current imaginary are due to its systematicity; indeed, the current values are aroused and encouraged by the system (in particular economic) and that these, in turn, contribute to strengthening it." It requires a whole cultural reconfiguration that would allow to 'disarm' the Western culture.⁷⁴

Under these conditions, how can the consumer get rid of his bewilderment? How can he remove the desire for money and access his desire?

71. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. *Ambiente e giustizia sociale. I limiti della globalizzazione*. Roma: Editori Riuniti

72. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. *Ambiente e giustizia sociale. I limiti della globalizzazione*. Roma: Editori Riuniti

73. C. Castoriadis, 2005, *Une société à la dérive*. Paris, Seuil.

74. Latouche, S. and Macey, D., 2013. *Farewell to growth*. Cambridge (UK): Polity. P. 97-101

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FIG 2.3. Graphic illustrating the increasing amount of aged and retired people.

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GLOSSARY

LETS economy: A local exchange trading system is a locally initiated, democratically organised, not-for-profit community enterprise that provides a community information service and records transactions of members exchanging goods and services by using locally created currency.

75. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.103.

76. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.109.

77. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.64.

78. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p.114.

79. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti

80. Hoppers, Gert-Jan, and Nol Reverda. Managing Population Decline in Europe's Urban and Rural Areas. Cham: Springer, 2015.

81. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity.

As argued by Castoriadis, all this can happen in collective terms, single individuals and single organizations can simply criticize, incite, identify single orientations.⁷⁵ The transformation toward degrowth and a different imaginary should be comprehended as a realistic possibility. In addition, the conversion should not be imposed by constriction through acts or laws, but rather it must be through self-transformation. There is a need to question the current paradigm and system entirely. Thus, to proceed toward a self-transformation process, it is necessary to delegitimize the system of values, manipulation, and contradiction that the paradigm generates. In this sense, It is necessary to do or to promote a will, and carry out a practice; a reasoned and deliberate practice that allows realizing this freedom as a possibility embodied in one's desires⁷⁶ In the process of decolonization, intellectuals and activists are fundamental. Indeed, their role in expressing the contradictions of the current system, such as the exploitation of other human beings, the environmental impact of everyday choices, and the limits imposed by our biosphere, would help to lead toward a change of paradigm.

Thus, these figures have an educational purpose toward the decolonization of the imaginary. Furthermore, in the different fields of action, they can operate

decolonization, such as the contradiction in architecture and urban planning toward an increasing expansion paradigm that contradicts the current and future demographic trend. In addition, these activists should advance and promote a diversified praxis. Indeed, citizens' constitution is constantly generated by confrontation and practical learning in everyday life, molded by everything we encounter. Lastly, these persons should give examples in transforming the imaginary and habits, through a great expression of charisma. Hans Jonas insists on the need to envisage not a retreat, but an advance towards a great conscious and voluntary sobriety that fully participates in degrowth.⁷⁷ These fields of actions toward reconfiguring the paradigm would help to rediscover what Berthoud defines with common sense. Common sense is above all the awareness of each of his humanity or of being one of the members of the one community of living beings. Once again, the awareness toward a single community of living beings⁷⁸ imposes a reflection about limits in terms of consumption, of resources not only toward humans but even toward other species.

The paradigm reconfiguration would lead to finding other possibilities of happiness that diverge from material commodities. "Material satisfaction is obtained by purchasing and using certain objects or materials; for example, by buying food and eating different

courses, the stomach's need will be satisfied. Intangible satisfaction comes from the way objects and materials are used; for example, enjoying Italian cuisine and convivial company at dinner gives another dimension of pleasure."⁷⁹

So degrowth expresses the importance of relational goods, which will help avoid simplistic trading.

Then, the possibility to express the importance of these relational goods through a system of local collaboration and organization, such as the LETS economy help to demonstrate a diversified form of economy which is not based on servilism and exploitation.⁸⁰

However, the process of decolonization of the imaginary requires time because its proceeding requires active involvement and it is not an instant change. In addition, getting rid of the consumeristic palliative of induces us to reflect on our own interests and passion that will make us feel happy in other ways.

Thus, one of the most interesting social and economic reconfigurations advanced by degrowth theories is reducing working hours. The possibility of having a higher quantity of free time would help us to find another form of happiness not based on accumulation, such as relational goods, culture, art, and sports. And in this process of finding the intellectuals can provide assistance in the research of them, and in the possibilities opened by degrowth. The reduction of working hours, and therefore of productive effects toward the whole apparatus. Indeed, it will coincide with a decrease in the number of commodities and services produced and a reduction of resource exploitation that will be available for other human beings.

The reduction of working hours has been adopted in several countries, such as the Netherlands, and its positive effects would be discussed in the next chapter.

The decolonization of the imaginary produces a change of values, beliefs, mentality, lifestyles to build other systems of representation through which to think about the world and live it, in other words, to face practical life through other concepts. A total overturning of the social relations of production, division, and distribution is thus produced. The imaginary reconfiguration would be made possible through a systemic approach as described in the previous pages, it will make possible the transition from growth to degrowth. The paradigm transition will be able to take advantage of the opportunities unveiled by demographic shrinkage, which is illustrated in the following chapter. The change of paradigm would enhance people's behavior toward mutual support and a shared future development direction. Indeed, the paradigm reconfiguration would be possible only through the articulation of an ethic of voluntary degrowth with a collective political project.⁸¹

Thus, if the ethic of voluntary degrowth can be compared to the sufficiency attitude, and so about the change of imaginary described in the previous paragraphs, the collective political project can be compared to a reconfiguration of social organization and priorities, such as in investment about renewable energies rather than in other sectors. As a matter of fact, degrowth requires active involvement in change, decisions, and practical activities. Thus, the political involvement that would probably be generated by greater participation will increase the self-reliance of communities

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FIG 2.4. Photo Collage on an ad wall in Venice creating awareness about global inequalities.

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and regions and a possible decentralization of decisions.

As pointed in the present pages, the process of imaginary colonization is non-instant, and it requires a constant moment of criticism. Growth colonization has lasted for several decades, and it requires an appropriate amount of time to be eradicated.

The reflections advanced about the process of paradigm change toward degrowth could be resumed through the interpretation that Karl Wagner moved about future societies:

The current and obsolete paradigm will disappear faster than you think. Realities will change out of pure necessity; there is not enough space on the planet for business as usual. A new belief system will replace the old one:

consumerism will be replaced by a culture focused on long-term satisfaction, increasing basic well-being and happiness;

the dominant interpretation of Darwin's theory, that life on earth evolved through the competition and survival of the best-adapted species, will be replaced by the awareness that life at a higher level of development has evolved through collaboration and not with domination;

cultures will move closer to each other, and the current clash of civilizations will be a chapter of a higher-level global society;

a new concept of community will emerge, which will combine community values with a more benevolent form of individualism, capable of grasping the importance of collective solutions.⁸²

THE QUESTION OF EFFICIENCY

Simultaneously to the personal change of imaginary, that regards a psychological and sociological approach, the technical apparatus should be developed as well. Indeed, the important technological development of the recent decades has helped to reduce human impact. So, parallel to the personal awareness and attitude toward degrowth, an efficiency process must be implemented to reduce human impact and inequalities through technologies. For example, implementing renewable energy production or the possibility of better-isolated dwellings reducing emissions is part of the technological process that would help mitigate human impact on a global scale. Technological development would be able to create affordable renewable energy production for developing economies and help to mitigate regional inequalities.

However, it would be incorrect to consider that technology development alone would solve the growth contradiction; indeed the spillover effects are those that come directly from the improvements

in efficiency, stimulating new expansion. For example, more energy and a cost-efficient system can cause people to use more heat since it can be had for the same price. Technological efficiency has led to a net increase in resource consumption. Particularly in the presence of competitive conditions, any improvement in efficiency - no matter if economic, ecological or in terms of time - pushes actors to convert the capital, resources or time saved into an expansion of output.

Thus, any report on efficiency relating to the micro-level remains of reduced relevance as long as it is not linked to hypotheses on the development of absolute volumes at the macro-level. There is no logical link between the relative efficiency reports and those of absolute scale, but what matters ultimately is the absolute scale of resource consumption.⁸³

Over the decades, the rebound effects generated by technological improvement were dramatically visible. Taking, for example, the case of airplane trips, that in the last decades were dramatically lower in number due to their higher prices, however, once the technological development allowed them to significantly reduce their prices, the number of them increase and now account for about 14% of carbon emission among the whole transportation sector in Europe.⁸⁴

Another practical example regards the use of electricity; the increased use of it has been accompanied and stimulated by lower prices due to significant technological development. However, if the energy produced by renewable resources would not be matched with a reduction in energy use in the future, its positive effects will be dramatically reduced.

It is for this reason that the perspective of

efficiency, if it becomes significant, must be inserted in a broader perspective of sufficient. The transition towards sustainability can only be acquired through a strategy that follows two parallel paths: an intelligent reinvention of the means together with a prudent moderation of the ends. Thus, the previous reflection about the imaginary reconfiguration toward degrowth will help to generate a voluntary action toward sufficiency, that together with efficiency development, would allow a correct transition toward degrowth.

The decision to associate efficiency with micro-level scale derives from the reflections advanced by Wolfgang Sachs about the two-scale of action toward environmental responsibility. Indeed, the efficiency gains on the micro-level are - over time - as if devoured by the growth in volume on the macro level. While they save time in the short run in the face of ecological limits, they are bound to be insufficient in the long run.⁸⁵

So, the micro-scale level efficiency made possible thanks to technological development in different spheres such as houses emission and insulation, more efficient renewable energies, fewer pollutant cars must be anticipated and followed by a self politic of sufficiency. In a nutshell, the double approach: efficiency and sufficiency, should be implemented simultaneously to proceed with a paradigm reconfiguration and reduce human impact.

ENVIRONMENT AND EQUITY

As mentioned earlier, a critical debate of reflection within the paradigm reconfiguration is between environment

82. Randers, Jørgen, and G. Bologna. 2013. 2052. Scenari Globali Per I Prossimi Quarant'anni. Rapporto Al Club Di Roma. Milano: Edizioni Ambiente.

83. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti

84. Info Data. 2021. Blog | Quanto inquinano gli aerei? Il settore produce il 2% circa delle emissioni di CO2 - Info Data. [online] Available at: <<https://www.infodata.ilssole24ore.com/2019/09/23/quanto-inquinano-gli-aerei/>>.

85. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti

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FIG 2.5. Photo Collage on a billboard in Vegas showing the impact of consumption.

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GLOSSARY

Intellectual: is a person who engages in critical thinking, research, and reflection about the reality of society, and who proposes solutions for the normative problems of society, and thus gains authority as a public intellectual

86. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. *Ambiente e giustizia sociale. I limiti della globalizzazione*. Roma: Editori Riuniti

87. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. *Ambiente e giustizia sociale. I limiti della globalizzazione*. Roma: Editori Riuniti

88. Earth Overshoot Day. 2021. Past Earth Overshoot Days - #MoveTheDate of Earth Overshoot Day. [online] Available at: <<https://www.overshootday.org/newsroom/past-earth-overshoot-days/>>.

89. Latouche, S. and Macey, D., 2013. *Farewell to growth*. Cambridge (UK): Polity. p.102.

90. Perniola, Mario. 2013. *L'avventura Situazionista. Storia Critica Dell'ultima Avanguardia Del XX Secolo*. Sesto San Giovanni (Milano): Mimesis.

and equity. The global urgency to implement a series of world policies and self-action to mitigate human impact on the environment is opposed to the claim of 'less developed' countries to have the so-called 'social basement.' Indeed, a global transition toward degrowth will represent a continuation of their deprivation state for these exploited regions compared to others. So the necessity toward the environment is conflicting with the request for a higher standard of living in some areas, which implies a continuous growth in some specific areas.

The quality and standard of life of 'developed economies' not being the model given that it usually requires more than four planets to be sustained at the world level, the equity reflection aims to invert the conventional thinking of development. Indeed, conventional development thinking implicitly defines equity as a problem of the poor. For development proponents, the gap that separates the rich from the poor is seen primarily as a lack of the weak rather than excessive greed by the powerful.⁸⁶ Despite the foundation importance to the environment, it should be addressed as a paradigm and a view of the world that considers equity, ethics, health, and education as a standing point of reflection.

Thus, the less developed countries that are mainly located in Africa, Asia, and South America should

be allowed to develop themselves until they reach an acceptable social basement, that will allow their population to have access to high-level education, health services, dwellings, and employment opportunities. The growth of these countries, however, should follow the principles of degrowth and ecology. Indeed, they should not proceed along the whole process of fossil consumption that Western countries have experienced, as well as the same urbanization process led by a growth paradigm. Assuming that these regions will start to shrink as well as Western countries in the present days, they should undertake a developing path that will prepare their inhabitants about degrowth and shrinkage and their technical and planning system. The certainty of degrowth will require these countries to use the technological development of Western regions to adapt their story according to future degrowth.

The growth process in developing regions and degrowth in developed ones is comparable to a convergent and divergent process. Indeed, on the one hand, the former group of countries will proceed toward the quality of living of most developed countries through controlled growth. But, in contrast, the latter regions, Western ones, will proceed with a divergent process compared to the previous (endless expansion). The point of intersection between the convergent path undertaken

by developing countries and the divergent one undertaken by developed ones would be assumed as a point of resource world equilibrium among human beings.

In fact, "the environmental space that could legitimately be claimed by society is constrained, on the one hand, by the limits of ecological resources, and on the other, by the rights of different communities.

Based on this criterion, the only permissible principle is that every world citizen has an equal right to use natural resources. It should be added, however, that this principle must not be confused with a planetary redistribution plan; instead, it is an ethical principle that concerns the way we behave.⁸⁷

The call for reconfiguration that developed countries are called to undertake is of primary importance in their agenda. Indeed, the environmental impact of humankind is increasing in size every year, as demonstrated by the Earth's overshoot day contraction over the decades.⁸⁸

The variety and complexity of a paradigm change have been expressed in the previous pages and it does not belong solely to a mere technical development, but rather it constitutes a complete cultural reimagination that comprehends education, daily life, habits, and social relationship. Society as a whole is called to adopt degrowth as a leading paradigm with the purpose to reduce our environmental impact and generate a more balanced standard of life across the world.

In recent years have been formulated several degrowth programs, as the '8 R' one by Serge Latouche, that aim to imagine a logical path of degrowth once the paradigm has been adopted by society.⁸⁹

Despite the possible economic, urban, and social technical responses to degrowth, the most complicated part of the process remains paradigm-changing. Indeed, the necessary 'step-back' that Western countries' inhabitants should undertake requires social solid action and participation.

In this sense, the role of activists and intellectuals becomes highly relevant to succeed in the paradigm reconfiguration at the global level. But, on the other hand, it would not be effective if the paradigm change were recused to a strict portion of the society or a rigid region.

Thus, intellectuals, activists, and inhabitants have dramatical relevant importance in the paradigm reconfiguration process requiring enormous responsibility. The following pages illustrate the role of these figures in the diffusion of degrowth and their importance in the configuration of a degrowth society for the near future.

In conclusion, the final purpose of the intellectuals and activists commissioned to promote the paradigm change should be to present everyone the possibility of a profound, immediate personal change.⁹⁰

THE TASK OF INTELLECTUALS

The transition toward degrowth requires a shared strategy among intellectuals and activists of different fields. Indeed, among the broad spectrum of criticism toward the growth paradigm, there should be a joint agreement about the transition process toward degrowth and its opportunities for the future. With regards to this point, in recent years, several research groups about Degrowth have emerged that have to gather together experts and activists from numerous

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GLOSSARY

Pedagogy: most commonly understood as the approach to teaching, is the theory and practice of learning, and how this process influences, and is influenced by, the social, political and psychological development of learners.

91. Decrescita.it. 2021. Associazione | Decrescita. [online] Available at: <<https://www.decrescita.it/associazione/>>.

92. Degrowth. 2021. Degrowth. [online] Available at: <<https://www.degrowth.info/en/history>>.

93. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p. 179.

94. Marco Biraghi. 2019. L'architetto come Intellettuale. Bologna: Piccola Biblioteca Einaudi.

95. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity. p. 119.

96. Perniola, Mario. 2013. L'avventura Situazionista. Storia Critica Dell'ultima Avanguardia Del XX Secolo. Sesto San Giovanni (Milano): Mimesis.

fields, from biology to anthropology, to reflect on a collective action toward paradigm reconfiguration. With regards to the Italian scenario, the collective *La decrescita*⁹¹ has started to promote ideas since 2005, in France, the group is named *Aquitaine Décroissance* and the others are mainly located in Europe and U.S.

These collectives have promoted awareness and actions toward degrowth through lectures, associations, and publications; indeed, more than 100 academic papers on degrowth have been published in international journals since 2008, including several special issues. Furthermore, books dealing with degrowth are available in major parts of the global North and published in various languages.⁹²

The importance of promoting and realizing the paradigm shift in advance would prevent catastrophic events in the near future. Indeed, as in the case of the '60s, the emergence of world-scale reflections among intellectuals and activists about cities and culture was caused by solid urbanization and the historical events of the period, which have imposed the necessity for world awareness. Thus, the effects and consequences of determining phenomena have provoked a cultural reconfiguration and attention.

However, if we wait for the phenomena to reconfigure our paradigm, it will be an environmental

feature, and its effects are uncontrollable. Therefore, the quest of our period is to anticipate the shocking events that will induce a paradigm change in the future, such as natural events due to climate change or enormous riots in developing countries for access to resources. Some thinkers believe that the cultural reconfiguration will be produced solely through shocking events given until the present days the numerous campaigns of sensibilization have not delivered a robust cultural shift.

The aforementioned strand of thought is united by the belief in the Pedagogy of disasters, which derives from the reflection advanced by Denis de Rougemont in his writings: I hear a series of catastrophes coming caused by our diligent although unconscious concerns. If these catastrophes were powerful enough to wake up the world, and not too much to crush it, I would say that they could take on a pedagogical value, it would be the only way to overcome our inertia and the invincible propensity of chroniclers to trace as 'psychosis of the 'Apocalypse' any denunciation of an actual dangerous condition. Future catastrophes would have a dramatic impact on the environment, and their scale and effects are unpredictable. The intellectuals that believe in this pedagogy are waiting for the disaster as an educational moment; on the other hand, the thinkers that believe in a possible paradigm shift toward degrowth are

convinced in the possibility of educating the human person.⁹³

The second strand of thought accepts the idea that every man is an intellectual, given that he carries out some intellectual activity, that is, he is a philosopher, an artist, a man of taste, participates in a conception of the world, and has a conscious line of moral conduct. Therefore he contributes to supporting or modifying a conception of the world, that is, to arouse new ways of thinking. Thus, assuming that every human being produces reflection and action toward the world according to his conception, it is a requirement of the intellectual class to motivate and extract the intellectual activity in every person. And so, to encourage people to reflect and be critical toward their conception of the world, that will find a proper declination in their work. The position of the intellectuals class "can no longer consist in eloquence, the outward and momentary motive of affections and passions, but in actively mingling in practical life, as a builder, organizer, permanent persuader.⁹⁴ The work of intellectuals can and must play an essential role with the irreplaceable force of example and dissidence. Alain Gras suggests to "take advantage of our 'advantage' over the rest of the planet to give an example of becoming aware of the recklessness of our way of life.⁹⁵ According to this reflection, intellectuals should not be external to society and passively reflect on problematics and possible scenarios. Still, they should get off of the podium and work synergically with people. Suppose these figures would not have become activists in the first person. In that case, it will be impossible to generate a self paradigm change within people. The persuasion perpetuated by the growth paradigm through advertisement,

newspapers, and television is dramatically predominant.

As stated by Gramsci, the intellectual work should be based solely on reflection and education, but rather it should be integrated with a praxis. And so, through the examples of different ways of living, using and producing in first person. Accepting this role by activists would allow them to walk out from their state of survival, which is caused by frustration and impotence.⁹⁶

Indeed, as illustrated in chapter one, the effect of the growth paradigm and capitalist organization has generated separate specialized classes that are profoundly alienated and lack a whole conception of the world. Differently, the occasion of the degrowth paradigm allows us to induce a critical reflection about our alienated situation and to work according to the new paradigm actively.

In the case that degrowth would be embraced by intellectual classes and the active role of intellectuals accepted, as mentioned earlier, there are different possible fields of action to generate self-criticism among people, and so of approaches. There is the chance to instaurate a self-critic process by expressing our system's contradiction and inequalities. In this sense, publications, conferences, and educational programs would contribute to creating criticism, in addition, to counteract growth imaginary with degrowth one; it would be helpful to use tools such as cinema, art, provoking advertisement that will disconcert the interactor.

The second path of interaction with people is giving examples of alternative habits, daily actions according to the new paradigm, and their positive effects. Of course, this approach

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FIG 2.6. Photo Collage in a metro station of Milano promoting collective economy contradicting the current state.

needs to reflect in advance on possible alternative praxis that people can adapt according to their cultural habits.

Thus, the active role of intellectuals should not be equal worldwide in terms of options and alternatives, but rather, it should be grounded at the cultural level. In this sense, the reconfiguration of use and the approach to generate a critical reflection among people would not be the same in China and in Perù; given that the meaning that these populations give to a particular aspect of daily life differs greatly, and their relationship with nature and object are probably divergent. Thus, given that there is no objectivist way to deal with needs and desires, customs and rules, perceptions and paradigms, fears and hopes.⁹⁷ It is fundamental to place the investigations advanced by historians, anthropologists, philosophers, and psychologists about the interpretation of meaning in the different regions of the world. It is crucial to adapt paradigm shift toward degrowth to regions' culture and work synergically with the aforementioned regional figures. Without reflections about paradigm change that start from the cultural construction of different populations, the transition toward degrowth will represent new colonialism. Therefore, intellectuals should operate in specific regions where they know the cultural structure of the people, and they manage to develop a critical path

starting from it. The actions of these activists across the world would be adapted to the cultural construction of the region. However, they will be united by the familiar perspective of degrowth.

As mentioned earlier, the process aims to generate a self-reconfiguration among people through a series of perturbations about the growth paradigm. Thus, the reconfiguration focuses on the creation of a self-responsibilization on the effects of habits and choices. Responsibilization can be assumed as the ending purpose of the degrowth imaginary, indeed it will produce even in the future an awareness that would possibly lead to other paradigm reconfiguration. In the words of Hans Jonas, our duties and responsibilities as human beings must be shown to be so incontrovertible that even atheists must recognize them.⁹⁸

In fact, the effects generated by our choices are objective and everyone should be aware of them. The possibility to generate self-responsibility in the largest possible pool would allow making the general awareness that would possibly avoid the pedagogy of catastrophe. As it will be explored in the following chapter, population decline opens possibilities toward self-responsibility and it will help activists to generate the mentioned awareness.

Parallel to the activist's work, which aims to instill the concept

of sufficiency, the intellectuals should investigate the theme of efficiency and how to reduce the impact of humankind through technologies. This investigation represents the technical part of degrowth and so an essential section of it. Indeed, without the implementation of technologies that would reduce our footprint, the social basement would be accessible to everyone. In this sense, the research of experts and technicians should be guided by the degrowth paradigm and by adopting an ethic of degrowth. In addition to the technical part, the intellectuals should investigate future degrowth scenarios that will possibly be implemented, as the '8R' praxis of Latouche. These praxes will allow reconfiguring the whole aspects of society according to the degrowth paradigm, and so it will be possible solely if degrowth is primarily accepted.

The dual nature of intellectuals, technical and social activists, should not be considered two separate specializations but rather two branches of the same tree. Indeed, it is of primary importance to constantly cooperate among the two-sphere to provide a critical asset to the paradigm reconfiguration and implementation. Once the paradigm becomes accepted by the most significant number of human beings, it will require constant revision and criticism. The process of degrowth must be an open one that will gather necessities and solutions among the most extensive possible basin of people, as such, degrowth is not a concrete alternative, but it is above all the matrix that generates an abundance of alternatives. Any concrete or counter-proposed proposal is both necessary and problematic.⁹⁹

The critic advanced in the first chapter toward the growth paradigm, and the reflection proposed in the present one about

degrowth wanted to install the first process of decolonization of the imaginary, exposing the contradictions of endless growth. Decolonization is of primary importance to propose the degrowth scenario in the architecture sphere, and especially in one of the cities. The population trend will require a complete reconfiguration of urban areas, which will constantly lose population in the future, and planners are required to imagine possible new scenarios. It will be illustrated that demographic change opens exciting possibilities in terms of social reconfiguration both in political and economic terms. In particular, these possibilities would help the paradigm transition given that it requires an essential shift in the attitude and responsibility of inhabitants.

In the process of shrinkage, What is the position and role of architects as intellectuals?

How do they manage to propose new ways of living according to degrowth?

How do they make degrowth acceptable to the inhabitants?

These questions open the reflections about the important role of architects in supporting the transition toward degrowth through the opportunities unveiled by shrinkage.

In conclusion, we would like to open chapter three with a reflection by Murray Bookchin:

"We must consciously create our own world, not according to mindless customs and destructive prejudices, but according to the canons of reason, reflection, and discourse that uniquely belong to our own species."

97. Wolfgang Sachs, Onufrio, G., Lo Voi, E., Di Gaetano, C. and Raudner, A., 2002. Ambiente e giustizia sociale. I limiti della globalizzazione. Roma: Editori Riuniti

98. Jonas, Hans, 1985. The Imperative Of Responsibility In Search Of An Ethics For The Technological Age. Chicago: University of Chicago Press.

99. Latouche, S. and Macey, D., 2013. Farewell to growth. Cambridge (UK): Polity.

03

THE ROLE OF ARCHITECTS

in a Shrinking Scenario

The role of architects would be to merge the opportunities of shrinking cities with the necessity of degrowth. Thus, starting from a reflection about the current architecture process, architects are called to become producers, and so able to transform it from inside. According to the degrowth necessity to increase responsibility toward actions, the architecture production should contribute to the process.

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Earth's Population is Getting Old
Shrinking Population

Earth's Population is Getting Old Shrinking Population

DEMOGRAPHIC CHANGE THE SECOND DEMOGRAPHIC TRANSITION

In less than half a century (2000-2050), the world population will have undergone two major trends: more young people in the developing world and more old people in the "rich" countries. Demographics are changing both within the borders of countries and beyond. This trend is affecting geopolitical, economic, societal, and environmental balances around the world and, more broadly, development models. The United Nations forecasts that nearly 11 billion people will be living on Earth by the end of the century, but other demographic research groups project that population will peak earlier and at a much lower level. As a result, the researchers expect the number of people on the planet to peak at 9.7 billion around 2064, before falling down to 8.8 billion by the end of the century.¹⁰⁰ Some countries, such as Latvia, Japan, Venezuela, Syria, and Italy, have shrinking populations already, whether it be due to high rates of emigration or a declining birth rate. Japan is one of very few Asian countries experiencing population shrinkage, with the

population expected to drop from 126.5 million in 2020 to 105.8 million in 2050.¹⁰¹ The main factor involved in population shrinkage in Japan is the low fertility rate. This is driven by later marriages, fewer marriages, involvement of women in the workplace, and high cost of living.¹⁰² According to prof. Christopher Murray, "most of the world is transitioning into natural population decline." As the Earth's population continues to shrink at various rates in regions around the world, issues of population decline and the economic ramifications it brings are sure to be on the minds of citizens, intellectuals, policymakers, and social planners. It is key to carefully examine the causes and impacts of population decline before implementing policies and measures to address these issues.

According to the research conducted by prof. Philipp Oswalt, in the past population decline was a combination of factors that spanned from war to natural demographic decline. In particular, in the past natural decrease of fertility has never played an important role in population decline, while in the future it will be of primary importance. Indeed, the future global reduction in fertility would become the leading cause of shrinkage, with a broad spectrum of consequences. According to the recent data, in 2100, 183 countries out of 195 will have fertility rates below replacement level by 2100.¹⁰³

The current and future change in fertility rate in most of the countries have been addressed by some scholars as the 'Second demographic transition'.¹⁰⁴ And so a period characterized by low fertility rate and an increase in elderly share. Therefore, it is fundamental to understand the effects of population shrinkage, and in particular to envisage on them the possibility to establish a path toward degrowth.

EFFECTS OF POPULATION DECLINE

The effects of population decline are visible in many shrinkage cities of the past, as well as in many rural areas that have been afflicted by severe out-migrations. The effects of shrinkage, and especially in consequence to the second demographic transition would be an increasing share of elderly people in the total population. Indeed, the decrease in fertility rate will correspond to an increase in the mean age. Take for example China, where its population will fall from 1.41 billion now to about 730 million in 2100. If that happens, the population pyramid would essentially flip. Instead of a base of young workers supporting a narrower band of retirees, China would have as many 85-year-olds as 18-year-olds. China's rust belt, in the northeast, saw its population drop by 1.2 percent in the past decade. In 2016, Heilongjiang Province became the first in the country to have its pension system run out of money. In Hegang, a "ghost city" in the province that has lost almost 10 percent of its population since 2010, homes cost so little that people compare them to cabbage.¹⁰⁵ The demographic change will represent a change in workforce, and so in taxes revenues

from the governments. In addition, the increasing number of elderly will increase the amount of retired people, and so an increase of outcome from governments. Thus, the primary effects of population decline is the contraction in economic resources from governments, which corresponds to a decrease in the maintenance and provision of services, infrastructure, and public resources management. In response to the phenomena, countries, including the UK, have used migration to boost their population and compensate for falling fertility rates in response to the phenomena. However, this stops being the answer once nearly every country's population is shrinking. Others have increased the retirement age of citizens. Many countries are beginning to accept the need to adapt, not just resist. In Sweden, some cities have shifted resources from schools to elder care. Governments in the future will have an increasing number of difficulties in providing services and support to their citizens, given the continuous reduction in population and so in revenues in an oversized system. In a nutshell, the government would reduce its contribution in maintaining the quality of life. The case study of Altena in the following pages express the situation in which government, and local councils, will find themselves to be in a shrinking scenario

On the other hand, according to the shrinking examples of the past, population decline has a second important effect, the reduction of market support and investment in the declining region. Indeed, according to our growth-oriented market system, population reduction coincides with a useful investment. Indeed, an increasing lower number of people would purchase commodities or use private

100. Ibbitson John, and Darrell Bricker. 2019. Empty Planet: The Shock Of Global Population Decline. London, United Kingdom: Robinson.

101. BBC News. 2021. Fertility rate: 'Jaw-dropping' global crash in children being born. [online] Available at: <<https://www.bbc.com/news/health-53409521>>.

102. BBC News. 2021. Fertility rate: 'Jaw-dropping' global crash in children being born. [online] Available at: <<https://www.bbc.com/news/health-53409521>>.

103. World Population Likely to Shrink after Mid-Century, Forecasting Major Shifts in Global Population and Economic Power. ScienceDaily. ScienceDaily, July 15, 2020.

104. World Population Likely to Shrink after Mid-Century, Forecasting Major Shifts in Global Population and Economic Power. ScienceDaily. ScienceDaily, July 15, 2020.

105. BBC News. 2021. Fertility rate: 'Jaw-dropping' global crash in children being born. [online] Available at: <<https://www.bbc.com/news/health-53409521>>.

FERTILITY RATE

in the current period

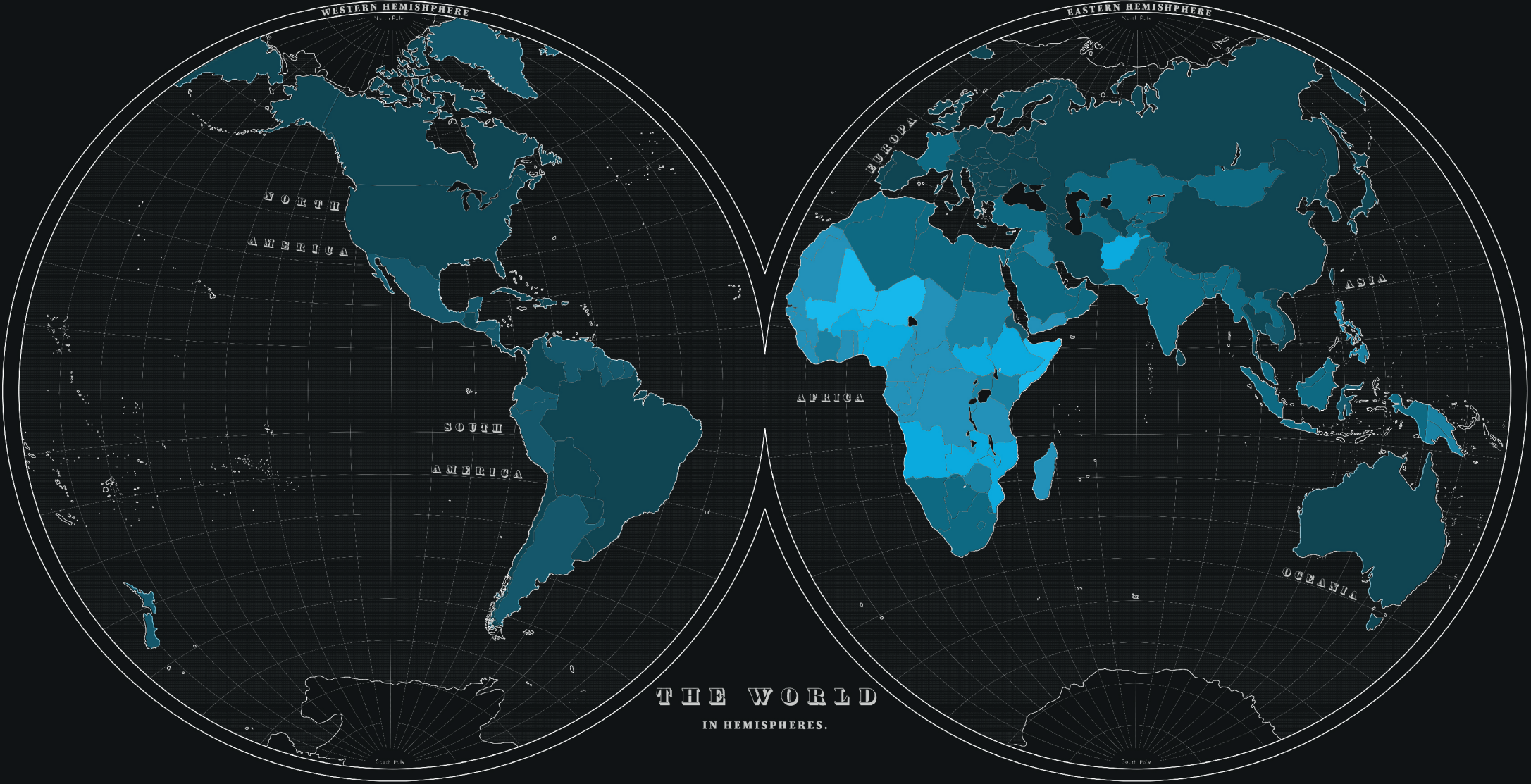


FIG 3.1.

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Earth's Population is Getting Old
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GLOSSARY

Civil Society: can be understood as the "third sector" of society, distinct from government and business, and including the family and the private sphere

services, there would be no profit. Moreover, in almost every shrinking area of the past, population decline has coincided with the closure of local shops, offices, and services, with a corresponding reduction in job opportunities, which has led to an increasing decline in population number. Thus, as in the case of the government, in a context of shrinkage the market will reduce its presence as a supporter of the quality of life.

In such a climate of apparent recession, who would be in charge of maintaining and supporting citizens' quality of life? Who would be in charge of managing and maintaining the infrastructure?

In their studies on depopulating regions, Gert-Jan Hospers and Nol Reverda adopted the analytical triangle to represent society and explain the effects and opportunities of shrinkage. According to the analytical triangle model, the society can be comprehended as the relation among three macro groups: the Government/State, the Market/Economy, and the Civil society/Society. In which, the Government is defined as the component which "cares about the organization of society by developing solid legislation and regulation, it is responsible for the construction of infrastructure and the preservation of the cultural heritage". The Market "is to generate trade and industry that are both foundations of material

security and prosperity". And the Civil Society "is the development of useful and meaningful institutions from which people can derive their individual and collective identity. It promotes social integration and mutual support relationships. The Civil Society creates the framework in which citizens can give their formal and informal activities shape and content. Social networks offer citizens the opportunity to expand themselves and to usefully arrange the direct environment with others."¹⁰⁶

The three components of the 'analytical triangle', and therefore of society, are interdependent among the others, and in an ideal situation in perfect balance among them. The quality of life of a society is determined by the relation of the analytical triangle elements, and it can be operationalized in six qualities: the political and physical quality of the government, the social and cultural quality of the civil society and the ecological quality of the market.

Political quality refers to "the relation between public administration and citizens, the participation and engagement of citizens in the political debate". On the other hand, the physical quality "refers to the core dimensions such as residential areas, infrastructure and public space." The responsibility for both the political and physical quality lies mostly on the government but even,

as it will be illustrated in the next chapters, on the civil society as well.

The social quality of civil society refers to "the social cohesion and diversity, the facilities that were created for this purpose and the presence of clubs, associations and networks of active citizens. The availability of education, nurseries and sport facilities belongs to the quality of civil society".

Secondly, the cultural quality concerns "all forms of art and culture, it refers not only to consuming culture but even to participating and contributing to the cultural climate of society." Those qualities of civil society are fundamental for identity formation and perception of the area among the citizens.

Lastly, economic and ecological quality are two factors that can be unified on a unique element under the name of sustainability. So, creating a trade system that would make use of the available resources and allow them to the broadest public.

Thus, according to the two scholars, these six life quality macro groups together shape the overall quality of life. However, as expressed earlier, in depopulation regions, the power and presence of both governments and markets will decrease. And so, the quality of life as well. The decrease in quality of life has generated a climate of necessity in shrinking areas among citizens. And the need has enhanced them to take action in the provision and maintenance of their quality of life. Indeed, according to the scholars, depopulating regions have shown a higher degree of participation from civil society in life quality maintenance through a system of cooperation that took care of the management of public space and generated a different sustainable economic system, the

LETS economy. Thus, the analytical triangle in a shrinking scenario is maintained stable by the growing participation of civil society in its equilibrium. In such a scenario, the importance of 'Civil society is dramatically higher than the governments and the markets in keeping the quality of life stable.'¹⁰⁷

The climate of necessity has driven civil society to take action, become critical, and experiment with alternative ways of maintaining the quality of life stable. With this intention, citizens have found the necessity to collaborate and cooperate in providing services and support to their community. Thus, depopulation offers the opportunity to find the value of social relationships, mutual help, and the sense of community and belonging again. In addition, citizens would become more responsible and so more careful of their choices over the process. The process of responsabilization and activation of civil society in a shrinking scenario opens stimulus reflections about the possibility of assimilating citizens' degrowth. Indeed, as illustrated in the following chapter, the phenomenon of shrinkage will open the opportunity for a paradigm change.

106. Hospers, Gert-Jan, and Nol Reverda. *Managing Population Decline in Europe's Urban and Rural Areas*. Cham: Springer, 2015.

107. Hospers, Gert-Jan, and Nol Reverda. *Managing Population Decline in Europe's Urban and Rural Areas*. Cham: Springer, 2015.

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Shrinking Cities and
Population Declinea Matter of Urban
Equality

GLOSSARY

GM: General Motors Company is an American multinational automotive manufacturing company headquartered in Detroit, Michigan, United States.

108. Romano, Onofrio. *Towards a Society of Degrowth*. London: Taylor & Francis, 2021.

109. Romano, Onofrio. *Towards a Society of Degrowth*. London: Taylor & Francis, 2021.

110. "Theoretical Approaches of Shrinking Cities - Researchgate.net." Accessed December, 2021. https://www.researchgate.net/publication/289122839-Theoretical_approaches_of_shrinking_cities.

111. "Varieties of Shrinkage in European Cities - Researchgate.net." Accessed December 5, 2021. https://www.researchgate.net/publication/269601741-Varieties_of_Shrinkage_in_European_Cities.

112. Oswalt, Philipp, and Tim Rieniets. *Atlas of Shrinking Cities*. Ostfildern: Hatje Cantz, 2006.

Shrinking Cities and Population Decline

a Matter of Urban Equality

A PAST MODEL FOR THE FUTURE

The transition toward degrowth would have critical reflections on the organization and liveability of cities. The reconfiguration of urban areas would be carried out by the necessities imposed by the second demographic transition' and the shift toward a degrowth paradigm. The second demographic transition has been experienced since the second half of the last century by an increasing number of regions worldwide. However, the consequences of natural population decline in urban areas have not been visible due to the constant immigration of residents from rural and peri-urban zones.

According to the current and future urbanization and demographic trends, the region experiencing an invisible demographic transition will have visible effects in the coming decades. The need to reconfigure our imaginary according to the principle of degrowth and demographic change would strongly collide with the current urban planning imaginary set in a growth paradigm. Indeed, nowadays, cities, or city-regions, could be assumed as spaces of competition, or rather as a 'space of competitiveness'.¹⁰⁸ In

these territories of competition, urban centers jostle for incoming investments in housing, commercial spaces, entertainment facilities, and public facilities. Thus, urban areas compete to attract highly skilled human capital, jobs, and green spaces. They also strive to displace or prevent less beneficial or negative functions, such as waste facilities, landfills, heavy industry, and large social-housing estates.¹⁰⁹

The growth-oriented imaginary in urban planning sustains a constant attraction process, which is firstly based on human capital attraction. However, the current mindset directly contrasts with the future population trend, as demonstrated by the second demographic transition. Indeed, the coming demographic contraction would reduce the number of people in almost every urban area, and the interests of city management would redirect toward the adaptation to these changes rather than to attract new residents.

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interests of city management would redirect toward the adaptation to these changes rather than to attract new residents. Population decline and urban area contraction would open a broad spectrum of possibilities in terms of governance, economy, liveability, and responsibility that have different directions and foundations compared to growth-oriented imaginary. The opportunities unveiled by those phenomena address particular responsibilities and roles to the figure of the architects that should become essential activists in degrowth. The competition among cities for residents and capital would be ineffective in a degrowth scenario, and the attention would focus on the inside rather than on the outside. Thus, the concept of liveability, habitability, and sustainability would follow the needs and expectations of the inside population rather than as indicators to attract new residents. Indeed, the case of Detroit is exemplary to demonstrate the ineffectiveness of growth policies and imaginary to solve the problems of a city that is losing population. In fact, over the last decades, cities or regions that have experienced a particular stagnation period of growth have tried, if the resources would have allowed, to reshape the image and particularly the imaginary bonds to the city through a series of flagship projects. In the case of Detroit, the GM Renaissance Center has been built to attract and remodel the town's image through significant investment and projects. Nonetheless, the 'attraction approach' would be ineffective in a situation of natural demographic contraction because at a certain point, the natural depopulation would regard even the urban areas that have won the battle of attraction.

The future trend of urban areas (contraction) has been anticipated in the recent past by the phenomenon of 'Shrinking cities', so regions that have experienced a contraction in the population. The term shrinking cities was firstly used in 1947 by the economist Mabel Walker as a metaphor applied to North American cities.¹¹⁰ Then, the notion started to be used in the '70s to address U.S. urban areas undergoing an intense deindustrialization and suburbanization process, causing an enormous reduction in the number of city inhabitants.

Shrinking cities in the past have undergone the process of outstanding competition primarily due to external phenomena, such as globalization, war, politics, and disease. The wonders of shrinkage can be considered a systemic process. Indeed several causes contemporarily interplay to generate the phenomenon. Urban shrinkage of the past, and mainly of the present, can be considered as a spatially and temporally inhomogeneous phenomenon, economic downturn is sufficient but by no means the necessary cause of shrinkage and that a more differentiated understanding of shrinkage also needs to include demographic change and suburbanization.¹¹¹

According to the investigation conducted by Philipp Oswalt and Tim Rieniets, *Atlas of Shrinking Cities*, the possible causes can be grouped into twelve different categories according to the theme. They regard demography, environment, war, economic transition, migration, offshoring, disease, just to mention some of them.¹¹² Nevertheless, these twelve groups of causes intend to highlight the systemic nature of urban shrinkage processes in the past. With the connotation systemic, it refers

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to a complex of interconnected elements, organized with coherence to pursue something.

The complexity of urban shrinkage causes, generates an equally broad range of effects/consequences that span from dwellings abandonment & surplus real estate to segregation. Urban shrinkage effects open the doors to a wide spectrum of possible strategies and occasions, such as social cohesion, new forms of economies and appropriation, new forms of property, and an experimental form of urban planning.

The past shrinking cities should be assumed as anticipators of the future global trend that would be possible based on a degrowth paradigm. The opportunities proposed by demographic contraction and urban one are known thanks to the shrinking cities of the past. These urban areas have set a paradigm reconfiguration that diverged from the growth one to use shrinkage effects to generate positive impacts. In addition, the literature and investigation about shrinking cities have unveiled the difference from the classic notion of urban decline. Indeed, urban shrinkage should be conceptualized as an empirical phenomenon resulting from the interplay of changing drivers of shrinkage at different spatial levels (from regional to global) that produces a decline in population at the local scale. Therefore, shrinking evolves when the place-

specific interplay of economic transformation, suburbanization, and demographic change leads to population decline.

Despite the shared opportunities that would unify shrinking cities in the past with the future ones, the causes of the phenomenon have differed. In fact, in the past, urban shrinkage was caused by multi-casual drivers that span from economic decline to suburbanization and, of course, natural population decline. While, future perspectives for shrinking cities depend decisively on the respective national population trajectories, and the relative performance of their urban economies, in comparison to the countryside and smaller settlements.¹¹³

The current demographic transition would become the leading contributor to urban shrinkage, and given its presence in almost all developed countries, the phenomenon would become the leading one. In fact, in the past, the process of global shrinkage particularly affected cities that are not or no longer able to "hook up" to the networks of modern global capitalism. This is the case of smaller cities in Europe, many of which have undergone stagnation and decline. These cities, with few resources in the areas of research, education and qualified employment, and sometimes underserved by transport infrastructures, are unable to keep pace with competition from the large cities.¹¹⁴

Currently, the shrinking phenomenon is already enormously present in the majority of cities. In fact, the UN-HABITAT world cities report in 2008 analyzed the shrinking cities phenomenon worldwide. It showed that the negative growth trend is largely associated with cities in North America and Europe. In the United States alone, 39 cities have endured population loss, while in the United Kingdom, Germany, and Italy, 49, 48, and 34 cities, respectively, shrank in size between 1990 and 2000.¹¹⁵ In addition, concerning the world scale, the report has shown that almost 10 percent of the analyzed cities in the 'developing countries' have experienced a reduction in population in the analyzed decade.

Despite the increasing scale of the shrinking phenomena, shrinkage is still seen by many politicians and planners as an exception, as a temporary and localized phenomenon. In contrast, nearly one-third (29 %) of all municipalities in Europe faced an annual population loss of more than 0.15 % between 1990 and 2010. Little more than half of all analyzed municipalities (56 %) experienced an increasing population during these 20 years.

The disinterest toward shrinkage is generated by the negative image that the term has in our imaginary. Indeed, shrinkage or affiliated terms like decline are generally seen as adverse developments that planning strategies should work against; growth, on the other hand, is seen as positive and desirable.¹¹⁶

In fact, the predominant task of urban policies and urban planning remained to reverse the economic decline by restrengthening the economic competitiveness of shrinking

cities and going for new economic and demographic growth. In most cases, the administrative system in shrinking cities persisted as solely growth orientated.

Urban areas that have experienced shrinkage in the past have provided several interesting points of reflection, and urban planning in a structurally shrinking city or region is in many respects very different from planning in a city or region experiencing long-term growth. While planning laws, systems, and strategies in most European countries are still mostly growth-oriented, possibilities to adapt to a situation in which shrinkage may become the rule rather than the exception should be considered more seriously than before.¹¹⁷ In addition, the various experiences of shrinkage have shown that a 'one-size-fits-all' recipe for combating urban shrinkage is not available, feasible, or even desirable.¹¹⁸

Even if the cause of shrinkage in the future would be almost entirely produced by demographic decline, the approach toward shrinkage and degrowth should vary in every city according to its cultural and unique urban organization. The possibility to undertake the process of paradigm shift should be grounded in the cultural configuration of each region. Therefore, the process of shrinkage planning should be adapted to the particular situation of the city. Despite the unique adaptation that shrinkage requires for each city, the effects produced by shrinkage would unify the terrain of reflection. Indeed, the economic and social effects of the vicious circle at stake in shrinking cities are the same everywhere: cities experience loss in tax bases and revenues,¹¹⁹ while at the same time public expenditures to maintain infrastructures and

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the built environment increase. The result is less capital available for investment and for the maintenance of public social infrastructure. To make it worse, the stigma of the shrinking city image affects the possibility of new investment and amplifies the declining process.¹²⁰

With the intention to open a reflection about the role of architects in degrowth, particularly in the future context of shrinking cities, it is fundamental to display the consequences of shrinkage and, therefore, the opportunities it generates.

EFFECTS OF SHRINKAGE

The effects of urban shrinkage are multiple, and they involve several aspects of physical, social, economic, and political nature; it is often impossible to isolate the impact of shrinkage per se from other factors.¹²¹ The current literature is mostly based on the effects of shrinkage phenomena of the past, and so caused by a broad spectrum of interplayed causes; however, most of these consequences would be present in the shrinking cities of the future.

The primary effect of urban shrinkage is demographic change; the population loss of specific age groups, for example, youth people, can lead to a demographic shift in terms of average age and the aging

of residents. The number of elderly usually increases at the expense of the younger generations. This phenomenon is connected to the outmigration of young residents to other cities, regions, or countries, which increases the percentage of elderly within society. Regarding the current demographic transition, the number of elderly will increase mainly because of the substantial decline in the fertility rate and life expectancy.

A second fundamental effect of urban shrinkage is building abandonment & surplus real estate. With decreasing population numbers, less demand is generated for the existing housing stock, leading to a fall in rents and housing prices, a cut in real estate investment and growing residential vacancies.¹²² As a matter of fact, the number of dwellings/offices exceeds the effective number of residents/employees of the city. Abandonment can be defined as real estate that is neither being marketed for rent or sale nor being held for any other purpose. In addition, besides the abandonment of real estate the general supply of real estate on the market is higher due to little demand for houses in such areas or cities.¹²³ The reduction in building investment, and so a decrease in the real estate market, induces a reduction in land consumption. However as many examples around the world, and especially in the U.S. have

demonstrated, the building investment market can be redirected toward other areas, such as suburbs or new cities. Besides its effect on real estate and construction companies, a lack of occupancy leads to a general devaluation of vacant sites, lower prices, a loss of mortgage value, and greater marketing expenditures for all those who are selling apartments.¹²⁴

The third group of effects regards infrastructure/services shrinking cities have an enormous impact on the infrastructural networks, such as underground pipes for water and energy, road structures, and services such as schools and public transport. These infrastructures/services are optimized for a specific demand, usually based on population density and commercial or industrial activities. Thus, once the number of users turns smaller than the optimal threshold, these services become underused, and their cost of maintenance and operation ability cannot be sustained. For the operation of all these infrastructural networks, a decline in customer numbers creates numerous economic and technical challenges. As network utilization levels have a fundamental impact on the efficiency of operation and economic viability, the main problem here is underutilization. In sewage and wastewater disposal, lower flow rates lead to sediment deposition in large sewers.¹²⁵ As a matter of fact, for certain types of infrastructure, for example, waterworks, the under-used usually results in increased costs for residents who still use the infrastructure. The reason is that the whole network needs to be maintained independently of the number of people using it, while there are fewer people to share the cost. On the other hand, for example, social infrastructure

such as schools, the deconcentration of infrastructure (to sustain the expenditure) will result in longer traveling times to reach certain facilities. In such a scenario, municipalities have a limited number of choices as to how to react: they can try to raise taxes to offset rising expenditures; they can cut services, contract out, downsize and reorganize public administration; and they can engage vigorously in economic development activities seeking to raise additional revenues by growing the indigenous tax base.¹²⁶ The fourth effect of urban shrinkage is segregation; the phenomenon has occurred in several shrinkage cities but not in their totality. Nevertheless, if segregation can be defined as the separation of a specific group from the rest of society on such grounds as race, religion or gender, the population of shrinking cities can be defined as segregated according to several factors such as services, work, and income. Profit losses, the devaluation of vacant sites, low and falling house prices, depreciating mortgage values, negative equity, and the growing expenditure on marketing are the key phrases that describe the effect of urban shrinkage on real estate markets in these cities.¹²⁷

These phenomena impact services, works, and commerce that would follow the higher-income groups that have usually out migrated from shrinking cities. The combination of rising maintenance costs and falling incomes can plunge shrinking cities into a vicious circle of declining liveability.¹²⁸ Urban shrinkage can induce the separation of groups within a city based on race, ethnicity, and income. Segregation in a degrowing scenario has primarily taken place in U.S. cities, which have experienced an extensive

suburbanization process that has transformed the inner-city core into a segregated area for low-income residents who could not afford to move in the suburbs.

According to the second demographic transition, the segregation phenomena would probably be moderated due to the global transition rather than a localized one. However, it is possible to imagine rather than regional or national segregation, a world one, in which a large number of shrinking areas of the world are 'left alone' in the process of shrinkage.

In addition to segregation, shrinking cities have been demonstrated to have problems at the social cohesion level. Social cohesion is defined as a multidimensional concept, including dimensions such as common values and a civic culture; social order and social control; social solidarity and reduction in wealth disparities; place attachment and identity; social networks and social capital.¹³⁷

Shrinkage has impacted social cohesion due to social polarisation, social and urban decay, and social and urban segregation. Indeed, the reduction in population and the lack of services, maintenance, and support from the market and government has increased the sense of abandonment and isolation in shrinking cities. In fact, social cohesion can be enhanced from top-bottom approaches and

bottom-up ones. However, the economic constraints of national and local governments have reduced the possibility of increasing social cohesion from a top-bottom perspective. Moreover, the personal problems related to employment and services access have reduced the intention to generate bottom-up social cohesion processes.

The second-last group of effects regards the economic transformation of shrinking cities. The reduction in the population number leads to a decrease in investment and in the commerce in the town, which cannot be sustained anymore according to the growth principle. Indeed, local shops and commercial activities within shrinkage cities should be reconfigured to a non-growth direction to adapt to the degrowth scenario; otherwise, they cannot be sustained. The need for additional resources, which cannot be found at the local level, thus becomes a common feature for both local councils and locally fixed capital in shrinking cities.¹³⁸ In many cases of shrinking urban areas, the reduction in private investment has always followed population decline.

The decrease in the amount of consumption has led private companies to search for profit elsewhere. These companies have included grocery shops, daily-life commodities stores, and offices as well. Furthermore, the contraction in public investment due to a

reduction in tax revenues would amplify the decline in economic support for maintaining open basic activities.

Lastly, shrinkage has enhanced the differentiation of public open spaces. Underused parts of the city have experienced increased spontaneous vegetation growth, which has been named 'urban jungle'.¹³⁹ The involuntary return of nature to the city has recaptured open spaces such as vacant dwellings, new roads, and brownfields. Moreover, it has diversified the appearance and possible appropriation of these spaces for public purposes.

At first glance, the effects of shrinkage seem to lead to a downturn in the quality of life and liveability within urban areas. Indeed, the deconstruction of social cohesion, the lack of public and private investment, the increased number of vacant and derelict buildings appear to lead toward a period of stagnation and isolation. In addition, given the world scale impact of the second demographic transition, the effects of shrinkage would spread globally.

Nevertheless, the shrinkage effects could be assumed as opportunities for adopting a paradigm shift toward degrowth. Indeed, shrinkage consequences unveiled a broad spectrum of possibilities in maintaining the quality of life within urban areas through adopting a paradigm that differs from growth. Therefore, shrinkage effects can be assumed as a first shock, possibly leading to a paradigm change. Urban inhabitants would be required to reconfigure their attitude in terms of choice, responsibility, usage of the city, and social relationship due to the necessity imposed by demographic contraction.

The questions that arose in the past decades regarding the sustainability and life quality in shrinking cities would reflect the opportunities that demographic decline offers to shrinking cities to undertake a paradigm shift toward degrowth.

If the population decline continues, how will spatial conditions change, and will vacant lots and houses increase and damage the character of the community?

Which new land uses replace existing urban functions when a city becomes subject to decline?

What new uses emerge in which place and in which physical form?

What will be the impacts of increasing costs to supply and manage public services because of decreasing density?¹⁴⁰

NEW DIRECTIONS FOR SHRINKING CITIES ORIENTED TOWARD DEGROWTH

The opportunities and requirements originating from population decline highlight the importance of directing attention toward the current urban residents rather than finding the solution to attract newcomers. The atmosphere of competition among cities would be demystified in a future global demographic contraction, and the attention will be posed toward the quality of life inside urban areas. The reconfiguration from an exogenous to an endogenous model demands a transition from eliminating depopulation to guiding it.

The guide across population decline intends to maintain an acceptable quality of life

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among shrinking areas, however as described earlier, the quality of life is obtained through the balance between market, government, and civil society. In the depopulated regions, the role of civil society is fundamental to maintaining the quality of life, given that the market and the government would lose economic resources. The increase in vacant dwellings, lack of private investment, and the decline of public intervention would require the support of civil society. Indeed, the absence of market and government in the maintenance and provision of services, commodities, and infrastructure will generate a climate of need among citizens. The lack in the provision of these services would affect the quality of life in shrinking regions, and the civil society would be required to participate in the provision of them to re-equilibrate the living quality. A higher degree of participation in civil society would become such a necessity that it will be inevitable. Thus, the relationship between citizens and politics in shrinking regions will change to more active citizenship. In depopulated regions, citizens are asked to relate to their surroundings and subsequently form new alliances; even if it was just because the old, growth-related habits no longer functioned.¹⁴¹

In a situation of need, the civil society would investigate solutions and methodologies for providing services and infrastructure according

to their needs, rather than following a growth principle as pursued by the market and government. The condition of need and the act of humans in such a situation is perfectly described in the Politics of Aristotle in which he described that the greatest crimes are committed not in the name of necessity but in the name of the superfluous. Men do not become tyrants to protect themselves from the cold.¹⁴² Thus, the climate of necessity would pursue the satisfaction of the need rather than their growth in terms of accumulation. In addition, the absence in the provision of services and commodities would probably generate a process of reflection about the importance, and absolute necessity, of the different services and commodities.

In the shrinking cities of the past, these services and infrastructure that were provided by civil society regarded grocery shops, urban maintenance, public transportation, and elderly caring just to mention some of them.

The citizens are called to become 'critical citizens', and so the relation to the government changes from a waiting relationship to a relationship-focused on involvement. In addition, the civic engagement would not be conducted through solitary and individual actions but rather at the collective and plural level, thus civic engagement goes beyond negotiating consensus in terms of growth. It also involves co-

The responsibility for the direct living environment demands volunteer work, informal care, and civil initiative (the active citizen)¹⁴³

producing narratives, day-to-day solutions for quality of life, and long-term learning and innovation networks.¹⁴⁴

In a nutshell, Dealing with the impacts of shrinkage should start with sustaining the quality of life for the remaining population and making adaptations rather than prioritizing competition for regrowth and external private investment.¹⁴⁵ This requires both recognizing the changing demographic and social profile¹⁴⁶ and re-organizing socio-technical infrastructures for the new socio-spatial patterns.¹⁴⁷ Regarding the future social composition, the elderly will turn out to be a significant share within the demographic spectrum. Therefore, their participation and engagement in the maintenance of the quality of life would be fundamental. The support of the elderly should be accomplished through a different retirement system that will integrate social working in the retirement period, corresponding to the physical possibility of each person.

The process of civil society engagement in providing services and commodities in consequence of a requirement imposed by a constrained need will highlight the importance of social capital in the context of shrinkage. The shrinking regions of the past that had an antecedent structured social capital in terms of social relationship, civil participation, and mutual aid have shown a higher degree of adaptability to the requirement imposed by shrinkage. Indeed, societies with a lot of social capital characterize themselves by an active involvement and the participation of civilians in political, religious, and social organization and association.¹⁴⁸ In addition, informal networks such as café, sports canteens, neighborhood contacts, book clubs, volunteering centers are considered truly

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helpful in forming social capital. In a shrinking situation, the shared feeling of need about the commodities and services that the market and government could no longer provide will induce collective action and civic engagement, and so the generation of social capital. In these terms, social capital refers to the capacity of a society to create interactions and networks between its members. Indeed, the need to organize the management and the provision of services and infrastructure will dramatically increase the interactions among members. However, the social deconstruction caused by demographic shrinkage can negate the creation of collective action if the condition of isolation prevails. Then, the social role of intellectuals, especially architects concerning urban management and organization, would contemplate the support in creating this social capital and promoting interaction among citizens. However, this point will be investigated later in the section about the role of architects. The process of organization and provision of the society would allow recognizing the importance of immaterial satisfaction and social relationship. In addition, the voluntary support within the community will lead to the reconquest of the importance of work as a value within society.¹⁴⁹

They considered degrowth based on the idea that the awareness of global

contradictions activates a local action that introduces the process of change¹⁵⁰ and change in terms of paradigm. Population shrinkage would allow enormous possibilities of local actions in maintenance, use of the spaces, appropriation, and control of the resources. Indeed, local actions responsibility represents a unique chance to direct the local activities according to the degrowth paradigm. In this sense, the role of architects in guiding depopulation in shrinkage regions should be based on degrowth principles as reduction of consumption, re-use, and repair of spaces and commodities, recycling of resources, and deceleration of activities. In addition, architects should investigate methodologies to communicate the global contradictions in the city's current use to create awareness about everyday choices impacts. Thus, the increased responsibility for local actions and the attention of global contradiction among citizens could lead to a paradigm shift toward degrowth. The possibilities and direct efforts of architects in the process of guiding toward degrowth and responsabilization would be deepened in the following section through a series of case studies.

The citizen's participation in social activities would require time, and in the current mean daily organization is available over the weekend or in the evening. However, services such as public maintenance and elderly or

youngster caring would be required over the whole week. Indeed, as mentioned before, a great responsibility would be given to the elderly citizens through a different system of retirement that includes community support.

Nevertheless, to help the elderly, degrowth advocates, such as Latouche and Harribey, support the idea that reducing working hours would assist the transition toward degrowth. Indeed, the consumer does not have an innate awareness of his own happiness, and the possibility to investigate its status, interest, and new direction of happiness that diverge from material satisfaction would help the path toward degrowth. According to Latouche, this regaining of free time is a necessary condition for the decolonization of the imagination. Indeed, a reduction in working hours would contribute to removing from our imagination the specter of having.¹⁵¹ The process of decolonization would require time, and the process could last for years; indeed, degrowth advocates believe that getting immaterial satisfaction requires attention, involvement, and therefore, time.¹⁵² The immaterial satisfaction includes, for example, the whole spectrum of social activities listed earlier that are unified by the common denominator of relational goods or by cultural and sports activities that do not imply any material gain. Nowadays, most people in their non-working hours enjoy spending their time in those activities based on leisure.

The reduction of working hours, the implementation of the cooperative organization to maintain and provide services, commodities, and infrastructure seems to substitute the role of institutions. However, there might not be much bottom-

up power to contribute unless financial and organizational support are provided to activate social capital.¹⁵³

In the reconfiguration process, institutions have fundamental responsibilities that span from the support in the implementation of social capital to the management and planning of infrastructure and the implementation of policies that would support degrowth. The problems related to shrinkage in cities such as oversized infrastructure, segregation, and unemployment should be faced by institutions through policies and public interventions. The first step to tackle these issues is accepting the prospect of long-term shrinkage.¹⁵⁴

Many institutions in the past promoted growth-oriented policies and planning instruments to counteract shrinkage, and they proved to be completely ineffective, and they have contributed to exacerbating the impact of demographic contraction. Indeed, re-assessing existing planning instruments is also a key adaptation process and should include the information system for managing fixed assets, supply-focused land development planning, and instruments for coordinated downsizing and land re-purposing.¹⁵⁵

Planning in a shrinking scenario differs significantly from the one in a growing city, indeed as assessed in the Urbact relation about shrinking cities, Planning for a shrinking area is far more difficult than planning for a growing city. Right from the beginning, ideas should be developed with the people. The city could give up central control and give it to neighborhoods and communities instead, trusting that locals know these areas best and can therefore come up with plans for their future. In addition, if you have a strategic

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planning process for a shrinking place in which you try to develop perspective, it is more promising to involve citizens, the public sector and civil society.¹⁵⁶

The involvement and participation of local stakeholders should be the foundation of planning in a shrinkage scenario; however, this does not induce a retirement from the planning of institutions. Indeed, civil society could contribute to formulating the proposal and bottom-up initiatives about using spaces and services.

Still, it does not have the knowledge and the resources to undertake and analyze complex urban reconfiguration. Therefore, the urban planning advanced by institutions should implement policies that would take advantage of the opportunities and requirements of shrinkage. Given the enormous differentiation in terms of past planning and organization, a single planning solution cannot be identified for shrinking cities; in fact, shrinkage in the U.S. completely differs from the European and Japanese ones.

However, there have been identified some urban planning trends among shrinking cities in the past, such as the condensation of the urban fabric, the downsizing of infrastructure, the empowerment of social capital activities, punctual demolition of buildings, the increase in green and public space, and the management of the stagnant land market.

These interventions should be tackled by institutions parallel to the implementation of bottom-up initiatives from civil society. Indeed, In shrinking cities, it is inevitable that at some point citizens will also have to make use of their own resources to improve the local quality of life. Civic engagement, however, is not something that can be dictated. If city councils want citizens to care for their community, they must enable them to do so.

Civic engagement requires the engagement of local government as well. After all, it takes two to tango.¹⁵⁷

The role of institutions in shrinkage would be investigated parallel to one of the architects in the following section, with attention to particular case studies.

Civil society's engagement and institutions' participation in the transition from growth-oriented city to a shrinkage-oriented one represents a moment of reflection to operate a paradigm shift toward degrowth. Indeed, the opportunities open by demographic contraction would allow a reconfiguration of the social relationships among citizens, their active role in maintaining the quality of life, and a critical reflection about their conditions in the growth paradigm.

Moreover, the civic engagement would allow counteracting the impact of shrinkage, especially in terms of segregation and isolation;

indeed, a higher degree of participation would allow overcoming the community deconstruction by shrinkage and promote new social relationship paths.

On the other hand, the urban policies coming from the government in terms of the housing market and infrastructure provision would counteract the technical impact of shrinkage and allow an equilibration in the quality of life in shrinkage regions.

The urban reconfiguration and the civil society engagement in the reconfiguration of urban spaces would require an active role by architects.

In addition, urban planning in terms of density, allocation of resources, infrastructure management, and use of space would require an equally active role of architects. The following section collects a series of shrinking cities case studies in which it is possible to reflect the position of architects in a shrinkage scenario and their importance in the shifts toward degrowth.

The reconfiguration process could be assumed as a revolution if revolution is accepted in the terms advanced by Castoriadis, and so as neither civil war nor bloodshed. Revolution is the change of some fundamental institutions of society through the activity of society itself, the clear self-transformation of society condensed in a short time. Revolution means the participation of the majority of the community in a phase of political activity, that is, institution. The social imaginary gets to work and deliberately tries to bring about the transformation of existing institutions.¹⁵⁸

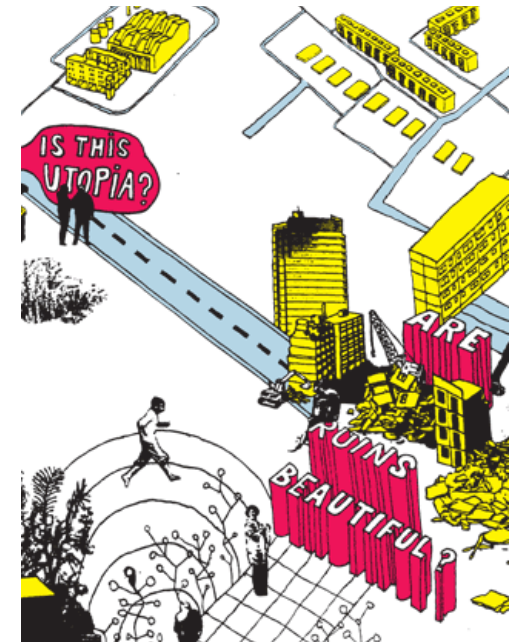


FIG 3.3. Illustration of Philipp Oswalt about shrinking cities and cities in decay. Source:

156. Schlappa, Hans, and Professor William J V Neil. 2015. From Crisis To Choice: Re-Imagining The Future In Shrinking Cities. Ebook. URBACT. <https://urbact.eu/crisis-choice-re-imagining-future-shrinking-cities>

157. Schlappa, Hans, and Professor William J V Neil. 2015. From Crisis To Choice: Re-Imagining The Future In Shrinking Cities. Ebook. URBACT. <https://urbact.eu/crisis-choice-re-imagining-future-shrinking-cities>

158. C. Castoriadis. 2005. Une société à la dérive. Paris, Seuil.

FIG 3.3.

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FROM SUPPLIER TO PRODUCER

The growth paradigm has exacerbated the inequalities at a global scale, and it has created a dramatic environmental problem in terms of availability and access to resources.

As expressed in the previous chapters, the paradigm reconfiguration toward degrowth could moderate the effects of the current paradigm.

In support of the paradigm reconfiguration, the second demographic transition would open a series of possibilities toward degrowth in terms of the use of resources and the responsabilization of citizens. In the process of responsabilization and paradigm change, What is the role of architects?

How can architecture support the paradigm shift?

The degrowth paradigm would require theoretical and practical activism among its advocates to produce a paradigm change. Architects, as intellectuals, are needed to comprehend and investigate critically the production and social conditions of its time and the impacts of its choices to develop

strategies that would support the reconfiguration. With the intention to support a paradigm change toward degrowth that would allow mitigation regarding inequalities and biosphere exploitation, architects are called to act as producers rather than suppliers.

hus, as described by Biraghi, architects are defined as producers or suppliers only in relation to the position that each of them assumes in the concrete reality of the production processes of architecture - if it accepts them passively by making it simple through them or if instead, it reinterprets them critically to the point of being able to transform them under some profile from the inside.

In fact, each architect makes his or her choice every day, at every moment, often unconsciously, and just as often in an inconspicuous, undeclared way.

As producers, architects must comprehend architecture as a project that elaborates production models. Thus, Architecture as a project does not indicate a project for it or with it: rather it indicates being a project itself. It is a project that is not simply a confirmation but a transformative one of the productive apparatuses; a crisis project.¹⁵⁹

In these terms, architecture is a transformative process that allows elaborating production models.

From a degrowth perspective:

Does the current production process of architecture support the reconfiguration toward degrowth? If not, what would be a possible productive apparatus that would support a reconfiguration toward degrowth?

AN ARCHITECTURAL PRODUCTION PROCESS ENHANCING DEGROWTH

As mentioned earlier, the current production process of architecture has constantly increased the specialization and denigration of architects over the years. Indeed, nowadays, architects appear subjected to intricate dynamics which, if on the one hand forbid him to take a position of 'naive' neutrality, on the other hand, these dynamics lead him to recognize his role as 'specialized operator' in an almost 'natural' way, which induces him to see his project as a moment within a much broader and composite process out of his control.¹⁶⁰ Thus, the overspecialization of the architecture process has induced architects to strongly believe in the incapability to install a change through their discipline.

In addition, the development of modern cities has induced an expropriation of the design and creative capacity of its inhabitants. In addition, much of the cities are structured and predefined and translates into an extreme and daily conditioning of people's lives. The space, pre-established in the organization of uses, is one of the tools or simply the intermediary and mediation of this strong conditioning, it is a device that allows the regulation of lifetimes through the regulation of spaces and their use.¹⁶¹

The current productive apparatus of architecture at different scales has isolated and alienated both architects and users, creating a typical passivity toward the production of architecture.

The passivity has induced the retreat of reflections and conception of alternative productive models and an annoying feeling of seclusion from collective action. The shared sense of isolation and inactivity is not solely attributed to architecture but the production process and the shared imaginary. Several aspects of the cultural environment of our time have contributed to enhancing isolation, as in the case of consumerism, which Bauman describes as an activity that is done individually, even in the middle of a crowded room. In which cooperation is not only unnecessary but superfluous.¹⁶²

The second chapter states that the growth paradigm has molded many productive processes to perpetuate itself and many involuntary actions.

How can architecture contribute to reconfiguring the imaginary and the paradigm in this complex pattern in which architecture and humans found themselves?

According to the degrowth principles presented in the previous chapter, the degrowth transition requires an important self-responsibility and activation toward change. These two elements are not supported by the current state of the art of the architectural productive process. Therefore, the productive process of architecture should activate citizens rather than perpetuate the feeling of isolation. Thus, architects should investigate an alternative productive procedure that would enhance

159. Biraghi, Marco. 2005. Project Of Crisis: Manfredo Tafuri And Contemporary Architecture (Progetto Di Crisi: Manfredo Tafuri E L'architettura Contemporanea). Milano: Marinotti.

160. Biraghi, Marco. 2005. Project Of Crisis: Manfredo Tafuri And Contemporary Architecture (Progetto Di Crisi: Manfredo Tafuri E L'architettura Contemporanea). Milano: Marinotti.

161. Carlo Cellamare. 2019. Città fai-da-te. Tra Antagonismo e Cittadinanza. Storie di autorganizzazione Urbana. Roma: Saggine, Donzelli Editore Roma.

162. Zygmunt Bauman. 2000. Liquid modernity. New York, Polity.

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Second Demographic Transition: entails sustained sub-replacement fertility, a multitude of living arrangements other than marriage, the disconnection between marriage and procreation, and no stationary population.

163. Gramsci, Antonio, and Valentino Gerratana. *Quaderni Del Carcere*. Torino: Einaudi, 2014.

164. Carlo Cellamare. 2019. *Città fai-da-te. Tra Antagonismo e Cittadinanza. Storie di autorganizzazione Urbana*. Roma: Saggine, Donzelli Editore Roma.

165. William J.V.Neill and Hand Schlappa. 2016. *Future directions for the European shrinking city*. New York, Routledge

166. Matthias Bernst. *Partnerships for Demolition: The Governance of Urban Renewal in East Germany's Shrinking Cities*. Accessed December 5, 2021. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2427.2009.00856.x>

the activation and responsabilization of citizens. In the last century, there have been several architects that proposed different approaches in architecture production. And the production is regarded as the whole spectrum of relations developable within the architecture project production chain, such as relations with the public administration, relations with the suppliers, and relations with citizens, just to mention some of them. In particular, the theories and practices that have been advanced about the activation and responsabilization of citizens have tried to empower them in architecture production. These architects, such as Giancarlo De Carlo, Yona Friedman, Aldo Van Eyck, have demonstrated to re-imagining the figure and role of architects, in line with the role of intellectuals imagined by Gramsci: for the builder, for the organizer - and therefore also for the architect - intellectual activity is no longer expressed in eloquence but in actively mingling with practical life.¹⁶³

At the present state of the art of the world, and the future projection, the role of architects, should combine, as imagined by Gramsci, a critical comprehension of the productive process of architecture to active involvement in the architecture production reconfiguration. Thus, intellectual activity is no longer expressed in eloquence but in actively mingling with practical

life. Therefore, as expressed in the second chapter regarding the role of intellectuals, architects should act with citizens and be actively involved in society rather than adopting an egalitarian approach toward change.

The second demographic transition would support the architect's role reconfiguration and the transformation of the architecture production. The demand for higher participation and responsabilization of citizens in maintaining the quality of life would require architects to adapt and imagine an architecture production suitable for these changes. On the other hand, the architecture production reconfiguration would support the participation and responsabilization of citizens.

The role of architects in the process of activation and responsabilization of citizens to support the paradigm change toward degrowth would be better understandable through practical case studies that highlight the citizen's role reconfiguration over the second demographic transition. The case studies represent past experiences of shrinking cities, and they would provide a framework and a possible scenario for urban areas in the future. These practical experiences would unveil a possible urban situation in which architects are called to work. They would open the floor to reflect on the architect's role in a shrinking scenario.

We would introduce the cases studies through the notion of generative politics advanced by Guglielmo Minervini, and we would suggest remembering the idea over the reading of the following pages:

It is based on the recognition of the value of people and aims to awaken the power of each one: these are the conditions for releasing a widespread force of change capable of influencing the course of events. Only in this way can politics return to governing events with ideas. While the old politics absorbs power from the citizens, generative politics gives it back. While in the old politics the citizens are spectators, in the generative politics they become the main protagonists.¹⁶⁴

ALTENA: NECESSITY GENERATES COLLABORATIVE ACTION

The future scenario of urban areas in terms of economic, social, and resources in a context of demographic decline is possibly readable through the recent history of Altena, a town located in the state region of North-Rhine Westphalia. Indeed, the city was a flourishing center over the last century due to mining and manufacturing centers located in the area. However, starting from the 1970s onwards, Altena began to lose parts of its industries. Between 1974 and 2021, the number of jobs declined by almost 50 percent, and the population shrank from 32,000 to 18,000. The municipality expects to continue to shrink by 1.5-3 percent each year over the next twenty years, reaching an equilibrium at around 12,00 residents in 2030.¹⁶⁵ The dramatic decrease in population number was accentuated by the outward migration

of economically active citizens. The rapid and robust demographic variations have had numerous impacts, such as the rapid fall of property values, the reduction in municipal revenues, and the deterioration of services and physical infrastructure. These effects as presented in the past express the decreased amount of resources provided by both market and government in the maintenance of the quality of life. Regarding government lack of financing, the reason is relatively simple given that "since the only way for municipalities to get independent revenues is the taxation of inhabitants and companies, a decline in their economy and population is directly reflected in lower tax revenues. So, decreasing population rates and a declining economy almost automatically lead to problems on the revenue side of municipal budgets too. As a consequence, increasing expenses are met with a tendency to decrease revenues."¹⁶⁶ On the other hand, the market fleet should be assessed to delocalize production sites in different regions or parts of the world, and the demographic downturn, which made Altena a non suitable place for investment.

The response of the local administration to the shrinkage phenomena should be located in the crisis stage of the paradigm change. Indeed, the local administration found itself in a period of complete incapability to offer viable solutions to counteract the demographic decline, and so it assumed the shrinkage situation as a temporary one, that in the future, will be reversed. Thus, infrastructure and services needed to be maintained as much as possible until growth returned. Despite the positivistic approach toward the phenomena, demographic shrinkage has continued over the years, and the maintenance cost of infrastructure and

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OECD: Organisation for Economic Co-operation and Development is an intergovernmental economic organisation with 38 member countries, founded in 1961 to stimulate economic progress and world trade.

167. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.p34

168. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.p36

169. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.p44

170. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.p42

171. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.p40

services steadily increased. When a new administration was elected in the late '80s, the city was still in a situation of decline, so "the new mayor struggled to 'open the eyes' of citizens to the reality and persistence of shrinkage." However, every proposal that aimed to close or reduce the facilities within the city as schools, libraries and nurseries raised strong protests among citizens. In contrast to these protests, a communication strategy aimed at raising Altena's profile as a city in need of support and which emphasised that Altena was the city with the highest degree of population loss in Germany did not unlock additional resources, nor did it change the attitudes of local citizens. In addition, when the mayor used a prime-time television broadcast to describe Altena as a city with no hope of ever regaining its former economic prosperity the citizens of Altena were outraged. They felt betrayed - their leader had accepted defeat.¹⁶⁷

Stagnation, protests, and incapability to communicate between institutions and civil society continue till the beginning of the current century. In that period, the municipality and the local citizens have gone through a period of profound confusion and crisis. Citizens required a solid response by the government, and on the other hand, the government required citizens to accept Altena as a shrinking city. The lack of vision and

the effective investigation ended in 2005 when the Bertelsmann Foundation sponsored a research project about possible alternatives for small towns undergoing population shrinkage and aging that lasted two years. The study opened a serious public debate in the town, and it began to explore how the people of Altena could contribute to the improvement of their situation. The public discussion focused on possible interventions related to shrinkage that would improve the quality of life in the town. The debate required a change in the mindset of local actors, away from ideas about strengthening economic competitiveness and reversing population loss and towards finding ways of controlling and if possible benefitting from the shrinkage process.¹⁶⁸

The two years roundtable debate with citizens focuses on managing shrinkage and creating new choices for the town. And one of the principal key findings of the reflections was that citizens had to contribute in some way to the services and improvements they wanted to see.¹⁶⁹ The key findings in Altena have been confirmed by a recent OECD report on shrinkage and demographic change which warns that government cannot rely on the market to halt or reverse the process of urban shrinkage, but calls for supporting public agencies in developing their abilities to engage local stakeholders to collaboratively

create new places out of decline and shrinkage seem to go unheard. The emergent vision for Altena shifted from creating new economic prosperity and focusing on the possible intervention that could be achieved through local resources and agencies that citizens could manage. The possible actions for the city were achievable solely through strong collaboration and support from civil society and mainly through volunteering. Indeed, the government started a campaign encouraging volunteering and reactivating the local voluntary sector networks. The local volunteer exchange bureau was given office space and modest resources to connect volunteers with people in need of support, such as shopping, transport or home maintenance. Combining funding for small projects with access to municipal buildings enables citizens to provide arts and fitness classes, healthy living and falls prevention workshops, after-school clubs, youth and sport clubs and more. Decisions on what to do, and where and how, were taken collectively between public agencies and residents.¹⁷⁰ Regarding urban reconfiguration, the city of Altena represents an essential example of co-production in urban transformation. Indeed, the city transformation's riverside was on the municipality's planning agenda for many years, but the economic constraints have continuously postponed the realization. The modification consisted of the pedestrianization of the riverside where parking lots were located in the past that were oversized due to population contraction. According to the developing collaborative action of citizens, the municipality decided to pursue the riverside transformation through the support of civil society. Thus,

the municipality purchased the building materials, arranged for road closures at weekend and called on the people of Altena to get their hands dirty. Over the months, the citizens have worked together to create the new riverside. They demonstrated that solely through their collaborative action, they could achieve what in the past seemed impossible. Indeed, the project demonstrated that budgetary as well as regulatory frameworks could be stretched to accommodate new ways of working which generated tangible improvements.¹⁷¹ With regards to collaborative economic development that guarantees the quality of life, Altena provides an interesting testimony. Indeed, in one of its neighborhoods, the local supermarket closed in the 1990s, and the citizens were not provided with a local grocery shop for many years. In the strand of the collaborative action, the citizens took a bearing of the past supermarket, which serves the citizens who are the shareholders. In the process, the municipality acts as a guarantor to manage commercial risk. These practices condense the reflection advanced earlier about the role and importance of civil society in shrinking cities. In particular, the capability of citizens to formulate strategies and collaborative action in situations of need. In addition, Altena's experiences of collective action highlight the need, especially in the former period, to support citizens in creating awareness and comprehension toward shrinkage. The collaborative processes developed in Altena have unconsciously generated politics of degrowth. Indeed, coordinated actions have enhanced the creation of social relationships among citizens, forming debates and discussions about the situation in which citizens found themselves.

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172. Sustainable development commission. 2007, Redefining prosperity. Accessed December 5, 2021. www.sd-commission.org.uk/pages/redefining-prosperity.html

173. Carlo Cellamare. 2019. Città fai-da-te. Tra Antagonismo e Cittadinanza. Storie di autorganizzazione Urbana. Roma: Saggine, Donzelli Editore Roma.

174. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge

175. Mariko, IKEDA. "Temporary Use of Vacant Urban Spaces in Berlin: Three Case Studies in the Former Eastern Inner-City District Friedrichshain." Geographical review of Japan series B. The Association of Japanese Geographers, June 30, 2018.

176. Oswald, Philipp, and Tim Rieniets. Atlas of Shrinking Cities. Ostfildern: Hatje Cantz, 2006.

177. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.

These discussions have led to the awareness that a growth-oriented mindset is not the only possibility to maintain and provide quality of life. In addition, the collaborative actions have assisted to recognize the importance of non-material attributes of wellbeing such as cultural activities, sports and mutual help that have been ones of the first activities to be implemented. In fact, shrinking cities offer scope to test out new ways to tackle decline by bringing about forms of socio-economic development that are not rooted in narrow economic terms but focus more on non-material attributes of wellbeing.¹⁷²

BERLIN - DESSAU: APPROPRIATION AS A CONDITION

Among the broad spectrum of effects that involve shrinking cities, the one relating to vacant houses and land directly concerns the field of architecture and urbanism. The demographic decline will dramatically increase the rate of vacancy in urban and rural areas, with direct consequences such as decay and depreciation. In the past shrinking cities, the increasing rate of vacant buildings has forced the government to demolish part of them, reduce the infrastructure and maintenance cost, and improve the aesthetic quality.

Nonetheless, in many cities such as Berlin and Leipzig, citizens recognize

vacant lands and buildings as an opportunity to adapt them for their needs and desires. In others, such as Rome, the availability of vacant buildings and areas have been recognized as an opportunity to respond to primary needs such as security, leisure and education.

The possibility of appropriation, especially among urban areas, is carried out as collective action, to change the use of part of the cities according to the group's desire. The processes of appropriation of vacant lands and buildings represent a response to community needs in terms of uses available in the city. The practice of appropriation corresponds to a process of self-organization and responsibility. Indeed, people need to collaboratively decide:

What would be the new usage of the space? How would it be managed? What are the tools necessary to transform it?

In a nutshell, the practices of appropriation and forms of self-organization respond to a practical need, to a shared personal and social need which cannot be answered, especially by public policies, and which may also concern in particular some fundamental needs.¹⁷³

Both the themes of appropriation as an opportunity to adapt them for desires and appropriation as an opportunity to respond

to primary needs perfectly describe the scenario of a shrinking city. A large number of vacant buildings and lands would open the room for appropriation in a broad spectrum of meaning. Indeed, the possibility of investigating appropriation and its effects in the process of self-organization and responsabilization of civil society is dramatically relevant. In this sense, the two case studies that regard the impacts and opportunities of appropriation in civil society responsabilization and activation are Berlin and Rome.

As described by the Berlin government in 2007, skate-parks in abandoned industrial estates, ponies grazing alongside the Berlin Wall, flea markets in disused warehouses, music and fashion in hard-to-let stores and climbing walls in empty buildings lots - scarcely a city in Europe has been so radically characterised by temporary use projects as has Berlin.¹⁷⁴

The phenomenon of temporary use is an intrinsic characteristic of the city of Berlin; in fact, after the reunification, numerous vacant lots and buildings were present in Berlin, especially in the East Side that, after WWII, has never been completely rebuilt. In addition, after the fall of the curtain wall, the housing policy of East Berlin was concentrated on the construction of new large-scale prefabricated buildings, and therefore, the remaining housing stock in the inner city was neglected.¹⁷⁵ In the former period of the appropriation process, the vacant lots and buildings were mostly squatted. However, over the decades, the diverse nature of the appropriators and their intentions have created a broad spectrum of usage and appropriation forms, that in times of reduced public spending, temporary

uses are perceived as an inexpensive way to reactivate vacant lots, establish new public spaces, stabilize socially disadvantaged quarters, and promote a positive image of an area, which can lead to further revitalization or upgrading.

According to Oswald, the actors in temporary uses have limited financial resources but are often creative, socially connected, and show great dedication and willingness to improvise. Temporary uses initiated by these actors comprise open-air bars, campsites, ateliers, galleries and open-air exhibition spaces, flea markets, gardens, music clubs, sports facilities, shops, offices, etc.

The most interesting experiences in temporary uses in Berlin are collected below and help to reflect about the role that civil society could play in imagining new uses of the city according to its needs.¹⁷⁶

The experiences in temporary uses in Berlin have dealt with a wide range of programs and purposes, such as Green usage with the transformation of 6,000 square meters of derelict land into thriving urban agriculture in the Kreuzberg districts. The reconfiguration has generated a network of over 1,000 volunteers and 13 employees. In addition to being a mid-sized business, it is also a social meeting point incorporating a café. Or for sport and leisure, as in the conversion of the riverside into beaches with volleyball courts and skateboarding parks demonstrated. And even the appropriation process has generated alternative living forms such as eco-coop condominiums in the district of Neukölln.¹⁷⁷

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The conditions of Berlin are dramatically similar to the one of shrinking cities, lack of resources by the government, large availability of vacant land and buildings, and rising importance in the maintenance of the quality of life to civil society.

The German capital is a laboratory of ideas and experimentalism in dealing with temporary usage in creative ways.¹⁷⁸ As illustrated earlier, the possibility to activate and responsabilize civil society to create a path toward degrowth could be supported, allowing citizens to appropriate the city and create a path that generates social relationships and is based on collaborative action.

Appropriation actions can often become an opportunity for profound cultural and political re-elaboration, supported by debate and comparison activities.¹⁷⁹ Lastly, the city's temporary usages that the civil society in Berlin consciously or unconsciously are in line with the Degrowth program.

Indeed, the relocation of agricultural activity in the city, in the case of Prinzessinnengarten, and so the creation of food in the proximity of users, would have positive effects in reducing transportation emission and exploitation resources in other parts of the planet.

On the other hand, the revitalization and reutilization of urban resources such as vacant dwellings and lands for cultural and leisure activity instead of demanding new buildings have had positive

effects in terms of environmental impact and responsabilization.

Berlin's citizen's appropriation process has been experienced in many other shrinking cities, and even on a larger scale. One of the most interesting experiences in this sense is the city of Dessau, still in Germany. The German city has experienced the phenomena of urban perforation over its downsizing process. This means that landscape, agricultural land or parks can be recovered, complemented and interconnected by land which has been used for housing, industry or infrastructure. Emerging spaces of perforation allow the creation of new open space qualities, contributing to climate mitigation and biodiversity, recreation and water management, and easy circulation for pedestrians and cyclists.¹⁸⁰

In the process of perforation, the question is whether open spaces can be provided and managed within a restrictive budget and are adaptable in a highly dynamic situation of urban transformation. The city of Dessau-Rosslau provides stimulating reflection to this question thanks to the opportunities the inhabitants and government envisaged in the shrinking phenomenon. The shrinking phenomenon in Dessau was part of broader conditions that exacerbated Eastern Germany after the fall of the Curtain Wall when many Eastern residents moved to Western cities.

FIG 3.5. Picture showing people in Berlin establishing a social garden colony in an empty space of the city. Source:

FIG 3.6. Picture showing the peoples' will in Berlin to take matters of the city into their own hands. Source:

178. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.

179. Carlo Cellamare. 2019. Città fai-da-te. Tra Antagonismo e Cittadinanza. Storie di autorganizzazione Urbana. Roma: Saggine, Donzelli Editore Roma.

180. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.



FIG 3.5



FIG 3.6

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FIG 3.7. Re-Usage of Space for personal Garden in Dassau
Source:

FIG 3.8. Picture showing People in Berlin reusing an abandoned swimming pool as a theater.
Source:

181. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge

182. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge

183. "Dessau - Rosslau Urban Core Areas and Landscape Zones." StadtumbauDassau. https://www.fad.cat/citytocty/2/cat/wp-content/uploads/guanyadora/booklet_dessau.pdf.

184. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge.

The demographic decline was dramatically severe for large parts of Eastern cities, and their planning instruments and actions proved to be ineffective. In fact, with rapidly and severely changing economic and demographic factors, traditional zoning plans may become an obstacle to experimental, temporary or future-oriented land use.¹⁸¹

While, informal instruments and concepts of spatial development with a high degree of stakeholder involvement can be used as a sensitive source of information about potential directions for future development. The crisis stage in instrument and planning that afflicted shrinking German cities has opened a series of reflections about alternative solutions that ultimately agreed on the importance of integrated urban planning and public participation. The concept even underlined in the Leipzig Charter on Sustainable European cities¹⁸² recall the importance of the impossibility to provide an adequate framework for future development given the wide spectrum of factors that could occur in the future, such as changes in society, economy, and ecology. Therefore, development corridors are visible in areas where there is a variability of use, providing responsive structures to accommodate the changing interests of inhabitants and the alterations in the preferences of owners, administration, and politics. Indeed, the integrated participation of civil society in

the planning development has proven to be dramatically effective in shrinking scenarios, where the land use destinations lack a future perspective from the institutions.

Regarding the city of Dessau, the demographic decline started in the early '90s, and since then, it has never stopped, with a reduction of over half of the population. In 2000, there were large disused industrial plots and about 6,000 empty flats, and about 2,300 of them were demolished in the following years.¹⁸³

The situation motivated the city to develop a new spatial model named 'Urban Cores - Landscape Zones' in 2002, comprehending the generation of a 'Landscape Belt' in the Southern part of the city. The spatial model aimed to densify the city's core areas while demolishing redundant buildings of the external area and transforming it into a unique landscape. This intention brought the conception of the 'Landscape Belt', and so a project conceived as mainly open extensive meadowland and components of green infrastructure serving the inner urban neighborhoods and improving connectivity for pedestrians and cyclists.¹⁸⁴

In order to provide orientation in the vast area of the Belt, some historic buildings were maintained as landmarks and focal points, and a series of new spatial elements like treelines and group planting of oak were inserted.



FIG 3.7



FIG 3.8

Dessau-Roßlau From pixels to planes

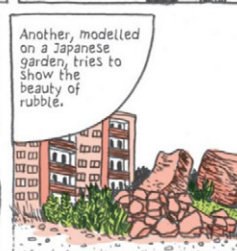


FIG 3.9. The IBA-project for the city of Dessau as a comic story. Published on Oct 6, 2010 Source: https://issuu.com/bauhaus/docs/dessau_en

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185. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge

186. Bruckner, H. 2010, Landscape creates town: Where building fall, New open spaces are created, International Building exhibition Urban redevelopment Saxony-Anhalt 2010. Less is Future. 19 cities- 19 themes, Berlin.

187. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge

188. William J.V.Neill and Hand Schlappa. 2016, Future directions for the European shrinking city. New York, Routledge

189. "Dessau - Rosslau Urban Core Areas and Landscape Zones." StadtumbauDassau. https://www.fad.cat/citycity/2/cat/wp-content/uploads/guanyadora/booklet_dessau.pdf, n.d.

190. Biraghi, Marco. 2005. Project Of Crisis: Manfredo Tafuri And Contemporary Architecture (Progetto Di Crisi: Manfredo Tafuri E L'architettura Contemporanea). Milano: Marinotti.

According to prof. Sigrun Langner, who has worked in the implementation and ideation of the 'Belt', First it was important to develop unconventional ideas in an open interdisciplinary workshop process. The landscape corridor needed a concept of ecological and aesthetic management offering a framework for voluntary involvement. Conditions change, so we have to develop our planning philosophy into an attitude of constant 'navigation' in a dynamic open process of development.¹⁸⁵

The dynamic open process of development was realized involving citizens in the use and maintenance of the Belt. In order to involve civil society, there have been numerous open workshops and debate sessions about the possible organization and management of the area. Thus, with the purpose to generate a project that would include the broadest diversity of uses and functions, and therefore respond to the broadest spectrum of necessity, the Belt are has been subjected to a process of 'pixelation'. Indeed, the region has been divided in a series of patches of 20 meters by 20 meters, so-called 'claims', that could be appropriated by stakeholders for interim use. Citizens were invited to participate and appropriate their selected 'claim', so that the 'Belt' would materialize as a townscape growing out of concrete action taken by participants.¹⁸⁶

In accordance with the reflection advanced by Heike Bruckner, one

of the authors of a participatory project in the Dessau 'Belt', The urban Landscape Belt offers space where people can do what they are able to do. Fortunately, within some programmes of urban restructuring, financial resources for local participation were available alongside investive projects. The active involvement of people brought about many more ideas to use open space than sites on hand in that early phase. It was important to have a permanent 'Planning Workshop' to negotiate different ideas, interests, activities and resources in an open process. Thus, the Landscape Belt has transformed the effects of shrinkage into opportunities that have helped the inhabitants create social relationships and enable a process of care and management of the city landscape. The process of participation and involvement has been slow but constant, and the number of people interested in the activities and in managing a 'claim' has constantly increased. Indeed, an increasing number of redundant sites are added to the landscape corridor. In fact, several community uses on 400-square meter claims were consolidated, including even private initiatives. The participation process raises the necessity of collective discussion among users, in particular about certain typologies of use that would ruin the 'Belt'. For example, "a pasture with goats as an experiment for low-cost maintenance proved controversial among neighborhoods", while "the

planting of fruit trees and soft fruit shrubs and vegetable beds prepared, seeded and harvested have seen wide acceptance.¹⁸⁷ Participation requires citizens to discuss and dialogue about collective choices and collective actions for the Belt. Several community associations have arisen over the years, such as 'Urban farm' that supports gardeners and is developing orchards and environmental learning opportunities with educational institutions. In the future, the association is planning to create a neighborhood kitchen for local produce and a small biogas plant to ostensibly show decentralised forms of post-fossil urban living.¹⁸⁸ The multitude of uses of the Belt is largely appreciated by residents; indeed children and teenagers have been discovered to have a large basin of appropriation opportunities in it, and in proof of that, some of them have collaboratively established a BMX track along the area. On the other hand, the elderly are the major users of the Belt given that they have a larger amount of time in respect to different ages. In the process of appropriation, the municipal council has played an important role, which has continuously acquire and managed the land where the Landscape Belt is growing and then offered it to local stakeholders. The possibility for the appropriation of 'claims' has proven to be extremely helpful in creating a process of self-management and responsibility among citizens, and therefore a far-sighted policy. According to Sonja Beeck, one of the responsible of the project, the Belt has occurred "a paradigm switch", from the previous planning method that was entirely based on growth.¹⁸⁹ As in the case of Berlin and Althana, the experience of Dessau enhances the importance of civil society in the context of shrinkage. Both the three experiences are bonded

by the necessity to involve citizens in the architectural production process in several ways, as constructor, carer, and ideator. The process of participation should not merely be understood as a necessity in a moment of economic constraints by the market and government, but rather as a process that enables trust among citizens. Indeed, collaborative actions have supported the creation of a sense of community, belonging, and responsibility among citizens that is based on the opportunity to thrust the others. In addition, the process of appropriation at different scales demonstrates the willingness of citizens to reconfigure the city according to their needs, and capabilities. The formation of such a process of appropriation, and the constant reconfiguration of the use, allows the space opening to spontaneous interactions that could be understood as a condition of non-exploitation of it.¹⁹⁰ The temporality of uses mirrors the impossibility of providing a clear path of development for the future, especially in a context of shrinkage. The increasing availability of vacant lands and buildings opens opportunities to an increasing amount of possible transformations. Thus, the occasion to provide spaces for appropriation to citizens reflects both the chance to adapt urban areas to civil society desires and establish a responsabilization process.

The increasing importance of civil society in the architectural production process, and the diminishing demand for building construction, would require a reconfiguration of the architect's role in such a process. The following pages try to envisage the role of architects according to the opportunities opened by the second demographic transition and the role of intellectuals in the paradigm reconfiguration.

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GLOSSARY

Flagship Project: are projects that are strategically and scientifically defined and are of substantial size with regard to their scientific and financial volume, the number of project partners and the running time.

191. Carlo Cellamare. 2019. *Città fai-da-te. Tra Antagonismo e Cittadinanza. Storie di autorganizzazione Urbana*. Roma: Saggine, Donzelli Editore Roma.

192. Harvey, David. *Città Ribelli: I Movimenti Urbani Della Comune Di Parigi a Occupy Wall Street*. Milano: Il Saggiatore, 2013.

193. Charline Sowa. 2016. *The role of architects and his decision making power in the transformation process of shrinking cities. Learning from two french experiences*. Accessed 5 December, 2021. <https://hal.archives-ouvertes.fr/hal-01338214>

194. Yona Friedman. 2009. *L'architettura di sopravvivenza*. Torino: Bollati Boringhieri.

ARCHITECTS AS SOCIAL ACTORS

The experiences of social collaboration, activation and responsabilization in the three contexts have highlighted that inhabitants, and their organizational forces certainly have - for better or for worse - an equally important role in the production of cities, and it is in this conflicting field of forces that the possibility of rethinking not only the city but also the relationships and social organization as a whole.

In addition, the process of appropriation and collaborative action has been demonstrated to increase citizens' participation in the public debate. It has allowed opening a discussion about the current paradigm of growth.

The three experiences have had as a common denominator the theme of necessity at a different gradient, and this climate of need induced citizens to take actions toward change, and it becomes an opportunity to experiment in concrete terms with different ideas of the city.¹⁹¹ The active involvement of civil society corresponds to reclaiming the Right to the city, and the right intended much more than a right of individual or group access to urban resources: it is the right to change and reinvent the city according to our needs. Besides that, it is a collective right rather than an individual one, since rebuilding the city inevitably depends on the exercise of a common power.¹⁹² In

this climate of social revendication for the Right to the city, and this process of civil society activation, How can the architects support and incentivize the phenomena? What are the instruments that the architects can use to help the process of activation? How can the architects, as intellectuals, direct the city transformation and the collective action toward degrowth?

In most cases, architects answered and proposed solutions for shrinking cities that were growth-oriented, and so through flagship projects. The Guggenheim Museum of Bilbao by Frank Gehry was the first example. After that, were built: "la Cité du Design" (agency LIN with Finn Geipel) at Saint-Etienne; the Louvre-Lens museum (SANAA); the University Library of Cottbus (Herzog & De Meuron); the Riverside Museum of Glasgow and the Phaeno Science Center of Wolfsburg by Zaha Hadid, are some examples.¹⁹³

The flagship model will become ineffective in a shrinking global scenario, and the need for new construction and development would be dramatically reduced. In addition, flagship projects follow the growth paradigm, and they increase competitiveness among urban areas.

So, the question is shifted to: How can architects intervene in a shrinkage scenario without physically transforming the space?

The same question was formulated in the past by Yona Friedman in his reflection about the role of architects and architecture in a scenario of resource shortages. In the scenario imagined by Friedman, the resource shortage, in terms of food and materials, would have reduced the consumerism culture and the possibility of developing projects based on foreign resource exploitation in the architecture sphere. Friedman defined this condition as a survival one that would have been generated by the over-exploitation of natural resources. The French architect believed in the impossibility of developing a paradigm shift, and the change of imaginary and therefore, habits would be imposed by the crisis generated by a shortage. The scenario imagined by Friedman has numerous similarities with degrowth, especially in the relocation of resources closer to the consumers, reducing urban development, and changing habits of first-world inhabitants. However, in the survival scenario, these changes would be produced by extreme necessity rather than voluntary action. Both the scenario of survival and the one of degrowth agree on the necessity to prepare citizens for a condition of limited resources through a process of responsabilization and organization. In the sphere of architecture, the responsabilization process would be supported by the reconfiguration of citizens from passive users of architecture to self-planner. And so to the active role of designer and inventor of the space. Friedman assumed architecture as a language and so composed of a particular grammar and syntax. Therefore, the part of architects in the process of responsabilization would be to "write this grammar and start teaching it." The architect's role would be as counselor, adviser, and even the one of

educators in the architecture production. According to Friedman, architects should develop a communication system that would enable citizens to understand and learn the process of architecture. According to the reflection of the French architect:

So let's imagine architects who receive self-planners by appointment, say for half an hour, at the same rate that a doctor would apply. The self-planner follows or does not follow the architect's advice, exactly as a patient follows or does not follow those of a doctor. Evidently it is the end of the architect creator, patience! In the words of Yona Friedman.¹⁹⁴

The reflection of Friedman about the role of architects provides a profound stimulus for the position of architects in a shrinking scenario. Nonetheless, even if the survival scenario of Friedman corresponds to a status of radical resources limitation, as illustrated before, a shrinking context is characterized by an enormous surplus of built environment and spaces and a substantial limitation of resources. It can be assumed that shrinking and survival do not require significant architecture production in current terms, but rather an architecture process that would enhance the responsabilization and autonomy of citizens. In addition, both scenarios do not demand important architectural realization but rather interventions that would modify the use of spaces or installations that would support new functions in void areas.

Therefore the role of architects as counselors and educators in the architecture production would enhance the formation of critical citizens that would take control of its space in terms of design and management. The architect's position reconfiguration in the

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FIG 3.10. Snapshots from a short movie of De Carlo: Una lezione d urbanistica 1954. There are different ways of how an architect could design a city. Source: <https://vimeo.com/277254686>

FIG 3.11. bottom right Snapshots from a short movie of "Le mani sulla città by Francesco Rosi, 1963. There are different ways of how an architect could design a city. Source: <https://cinemaitalianodatabase.com/2018/10/25/le-mani-sulla-citta-1963-di-francesco-rosi-recensione-del-film/>

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195. De Carlo, Giancarlo, and De Filippo Pieri. *La Piramide Rovesciata: Architettura Oltre IL '68*. Macerata: Quodlibet, 2018.

196. De Carlo, Giancarlo, and Sara Marini. 2015. *L'architettura Della Partecipazione*. Macerata: Quodlibet.

197. La Cecla, Franco. 2015. *Contro L'urbanistica*. Torino: Giulio Einaudi.

198. Charline Sowa. 2016. *The role of architects and his decision making power in the transformation process of shrinking cities. Learning from two french experiences.*

199. Charline Sowa. 2016. *The role of architects and his decision making power in the transformation process of shrinking cities. Learning from two french experiences.*

200. Carlo Cellamare. 2019. *Città fai-da-te. Tra Antagonismo e Cittadinanza. Storie di autorganizzazione Urbana*. Roma: Saggiene, Donzelli Editore Roma.

201. De Carlo, Giancarlo, and De Filippo Pieri. *La Piramide Rovesciata: Architettura Oltre IL '68*. Macerata: Quodlibet, 2018.

production process would allow them to shift from designing for someone to designing with someone. In fact, the production process of architecture would be widened, and so it would be based on participation. And participation allows to transform the architectural design from that imperative act that up to now has been, into a process. A process that starts with the disclosure of users' needs, passes through the formulation of organizational and formal hypotheses, leads to a management phase where, instead of ending, it reopens in an uninterrupted alternation of tests and remodeling that feedback on needs and assumptions, urging their continuous re-proposal.¹⁹⁵ The support in the architecture production would require architects not to abandon their role but rather to expand it.¹⁹⁶ Architects would be required to perform as a social actor, in terms of a supporter of society through the observation and listening of citizens' needs and the provision of reflection and suggestion about their needs and the possible implementation. In the process, architects would not act solely. Still, it would be supported by anthropologists, sociologists, and philosophers to understand the relationship of citizens with space and their habits. Thus, as mentioned in the second chapter, the social role of intellectuals should be grounded at the local scale because it would be required

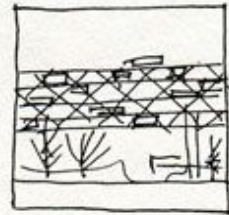
to be trusted by the community he supports. The interdisciplinary action between architects and the figures listed above would allow generating an architecture based on listening where listening corresponds to the comprehension of needs, desires of citizens, as well as the understanding of their use, habits, and appropriation process. If architects succeeded in critically listening to citizens, there would be the possibility to reconfigure architecture and urbanism as a social science. In order to critically listen and comprehend citizens and their space, architects should be actively involved in the society and so mature lived experiences so as to be able to observe the way of life of the people, an experience of sharing everyday life.¹⁹⁷ The sharing moments with citizens and the profound comprehension of the relationship between them and spaces would allow architects to provide critical support to the community and, therefore, act as a social actor. Architects, however, would participate in the architecture production not solely in the design stage as counselor, but instead even in the realization process as they are doing nowadays. In fact, architecture would technically support the interventions' realization and assist the reparation and maintenance of buildings. According to the shrinking experiences analyzed by Charline Sowa, It is more frequent to see

the architect becoming project manager supporter. His assistance is more and more asking from specific project-ownerships, particularly present in shrinking cities: the community groups composed of inhabitants, non profit organization or association, etc. In the United State, it is very visible where the State and local authorities are not any more invested. These community groups are the project-ownerships but also the project manager. They are themselves who think and realise projects of urban renewal at the scale of their neighbourhood.¹⁹⁸ As in the case of Berlin, the intervention conducted in vacant buildings and areas was funded and realized by the same group of people, and the same group would, in the later stage, maintain and manage the area of intervention. Thus, architects should provide support to these citizens, both through technical advice, and reflection moments focused on the need that brought them to realize the project. In addition, as in the case of Friedman, architects could create a guide about the design of simple structures that could be used for different purposes by citizens. The communication should be understandable by inhabitants; in fact, Friedman adopted the comic method to create his guides. According to these reflections, Sowa believes that one of the most important architecture production processes is Urban cores, the Landscape zone at Dessau. Where the pluridisciplinary team of project management defined important axes of the urban strategy. The choice was to offer inhabitants (citizen, family, company, group of young people, etc.) the possibility of defining, producing, managing and controlling these spaces freely. The objective was to make inhabitants aware of their responsibilities in front of their environment, and also to reduce the cost of

projects on short and long term, to maintain public spaces.¹⁹⁹ As these cases demonstrate, already in shrinking cities, the role of architects is to assist the community in their appropriation process of space and mediate within the community about the choices to undertake in the modification of space. The choices about the transformation of spaces in the city should be conducted at the collective level, as in the case of Altena. And the mediation among the different visions about buildings and voids coming from the citizens should be mediated by architects and other social planners. As mentioned earlier, the mediation would require listening in terms of needs and relation with the space from the different visions members. The process of discussion and decision at the community level could be assumed as part of a self-organized politics, that can be defined as significant because it anchors itself on the real significance of concrete choices and visions of the future for people's lives, and is rooted in the social needs of people and territories.²⁰⁰ Therefore, architects should make people reflect about their needs, and as illustrated by De Carlo, The unveiling of needs is based on the deployment of a preliminary activity of information and criticism aimed at synthesizing all the systems of imposed values, at dissipating the alienations that the secular opposition of these systems has produced, and at arousing such a precise awareness and bite to cause the rebound of new information and criticism.²⁰¹ In this sense, being the citizens more directly responsible for their choices, architects should guide them through a series of reflections about the contradictions of their choices. So it should open a process of crisis.

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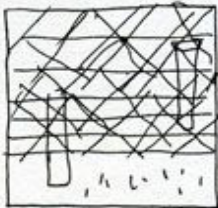
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LAST, BUT NOT LEAST,
I GET BACK TO MY
FAVORITE IDEA:
THE "VILLE SPATIALE"



IT MEANS A
PARTICULAR MIXTURE
OF RULES
AND IRREGULARITY



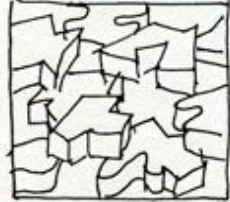
THE "VILLE SPATIALE"
CONSISTS OF A MORE
OR LESS REGULAR
RIGID SUPPORTING GRID:
THE "INFRASTRUCTURE"



WITHIN WHICH INDIVIDUAL
HOMES ARE INSERTED
FORMING AN IRREGULAR
PATTERN



AS FOR THE SHAPE
OF THOSE INDIVIDUAL
HOMES
ANYTHING GOES



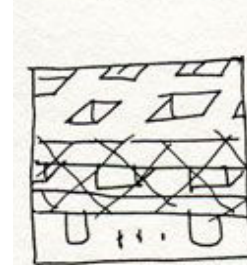
THUS THE "VILLE
SPATIALE"
IS A "MERZSTRUKTUR"
AT URBAN SCALE
FOR A MASS-SOCIETY



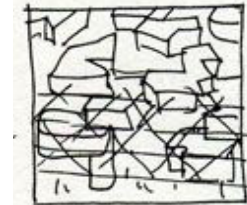
THIS IS OUR SOCIETY
TODAY:
A CROWD



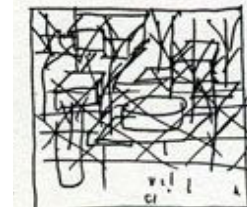
I DO NOT KNOW
HOW A "VILLE SPATIALE"
WILL LOOK



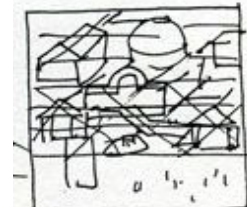
IT CAN BE THIS



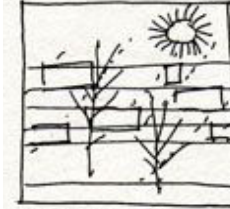
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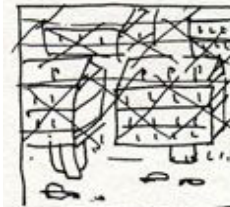
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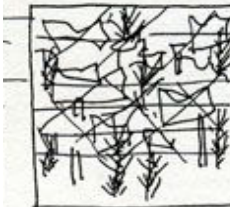
OR ANYTHING ELSE



THERE IS NO GRAMMAR
TO THE "VILLE SPATIALE"
EXCEPT RESPECT
OF DAY-LIGHT



IT CAN LOOK AS WELL
AS THE CITY YOU
LIVE IN



OR IT CAN BE
COMPLETELY
UNLIKE
TO ANY CITY



IT CAN NOT BE
PLANNED,
IT CAN ONLY HAPPEN

FIG 3.11. Yona Friedman,
"Ville spatiale," comic
1959-1960.
Source: <https://blog.sias.gr/urban-narratives/619-handbusch>

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GLOSSARY

Efficiency: is the ability to avoid wasting materials, energy, efforts, money, and time in doing something or in producing a desired result.

202. Paolo Volonté. 2001. *Razionalità e responsabilità*. La fondazione etica dell'epistemologia delle scienze sociali in Max Weber. Soveria Mannelli, Rubbettino

203. Jonas, Hans. 1985. *The Imperative Of Responsibility In Search Of An Ethics For The Technological Age*. Chicago: University of Chicago Press.

204. Carlo Cellamare. 2019. *Città fai-da-te. Tra Antagonismo e Cittadinanza*. Storie di autorganizzazione Urbana. Roma: Saggine, Donzelli Editore Roma.

205. Henri Lefebvre. 2014. *Il Diritto alla Città*. Verona: Ombre Corte.

206. Laino, Giovanni. 2012. *Il Fuoco Nel Cuore E Il Diavolo In Corpo*. 1st ed. Milano, Italy: FrancoAngeli.

Thus, in the moments of discussion between architects / sociologists / anthropologists / philosophers and citizens about their needs and desires, the group of social actors should make inhabitants reflect on the contradictions and inequalities that their choices would possibly produce. The needs and choices of inhabitants should not be discussed solely in terms of intentions, but even in terms of effects and responsibilities toward these effects. As in the cases of the billboard panels from a degrowth perspective, architects should support the citizens to become aware of their choices over the architecture production, in terms of origin of the materials and so their production process, in terms of conflicts with other groups of citizens, and in terms of needs that aroused their interventions. Therefore, the process of citizens' self-responsibilization is not intended to be the dereliction of the decision power, but rather a series of moments that firstly arouse consciousness in inhabitants about their choices impact, and make them responsible of their actions according to the value which they believe could justify their action. This process aims to support the generation of an Ethic of responsibility, and so it is not an ethics in the principle of justification is given by the achievement of the result itself, nor does it consist in the justification of the basic action of an exercise of prediction of the

consequences.

But instead, an ethic in which "the criterion of justification is given not by the achievement of the result or the calculation of the consequences, but by the conformity of the action to a certain value that the actor, with 'intellectual honesty', is willing to recognize as the guiding criterion of his own action."²⁰²

As citizens advisors in the production process, the role of architects would enlarge citizens' awareness about their choices at the appropriate scale, which can span from the neighborhood to the global one. Then, once the consciousness about the consequences and impact of their action is unveiled, inhabitants are asked to reflect if the value or need that directs their action could justify its impact. The decision would be entitled to citizens who would become responsible for their activity according to a value or need that they consider sustaining the burden of the impacts. According to Jonas, responsibility has become the fundamental imperative in modern civilization, and it should be an unavoidable criterion to assess and evaluate human actions, including, in a special way, development activities.²⁰³ In such a scenario, the citizens' responsibility burden over their actions in the architectural production process would probably generate a series of analyses of their needs, choices, and impact. Thus, citizens' critical analysis

would support the reconfiguration of their imaginary possibly toward degrowth. As mentioned in the second chapter, the reconfiguration of the imaginary belongs to the cultural sphere. So it should be imagined that the different daily life actions would undergo such a process of criticism to reorientate the imaginary effectively. So, the process of responsabilization should be envisaged in a broad spectrum of daily life activities, from shopping to leisure. This is why the paradigm shift should be carried out simultaneously at different scales and fields of action. The process of responsabilization would correspond to the principle of sufficiency presented in the second chapter, representing the reduction in consumption and demands of commodities and energy by first-world countries to redistribute them to regions lacking them. According to the principle of sufficiency, Friedman envisaged that the architecture responses to a survival scenario would be to build less, learn to live in another way, and organize ourselves with less transport, which corresponds to the architecture response in shrinking cities and a degrowth scenario.

The actions and experimentation of collective efforts in shrinking cities, and so the participation in the appropriation of spaces have demonstrated a need for urbanity, that is rooted in the need for a quality of living understood in terms of the possibility of shaping and qualifying the place where one lives, to perceive it as one's own, to rebuild a constructive relationship with the city, to participate and feel responsible for the choices that affect one's own life context, to create conditions for a real and profound society. And so, to decolonize the collective imagination from the imposed models

of living and give shape to a collective planning.²⁰⁴

About these practices of appropriation, Lefebvre reflects on their importance in generating a profound democracy that opens up to the habit of imagining possibilities instead of surrendering to the probabilities of changes imposed from the outside.²⁰⁵

Thus, a critical approach toward the architectural production process, that would allow citizens to fulfill the need of urbanity and so the possibility of qualifying their space by themselves, would open the opportunities to imagine a different use and management of spaces. In this context of need, the social role of architects would be similar to the figures that work in the field of social requalification in areas of severe difficulties, and so composed of an articulated work of communication that implies the establishment of relationships, settings, operational experiences with a non-occasional relationship, admitting the frequent redefinition of problems.²⁰⁶

ARCHITECTURE AND EFFICIENCY

Besides the social involvement, architects should investigate and address technological solutions that would reduce human impact toward the environment. In the context of shrinkage cities, these technological solutions span from the reduction of infrastructure size and the calculus of density parameters for the sustainability of services just to mention some of them. The opportunities opened by the technical solutions, in terms of impacts both in the environment and society should be discussed with local citizens to make them aware of the micro and macro scale effects of the technological reconfiguration.

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In fact, at the micro scale, the infrastructure downsizing means to relocate the low density citizens of a particular area to another place, and it will affect the social composition as well as the attachment to the area. On the other hand, at the macroscale, the effects would be a reduction in the cost of maintenance and in the environmental impact.

The technological development in the field of architecture comprehends even the whole spectrum of efficiency programs in regard to cities and dwellings. These series of interventions, as in the case of the social role, would be tackled with a series of other experts, such as engineers and physicians. The interventions in technological terms correspond to the principle of efficiency, and so the whole strand of development that would allow to increase the liveability of the planet reduces their impact toward it. The constant development in technological solutions increases the difficulty in determining the more suitable solutions. However, in terms of technology, shrinking cities would equally require a reconfiguration of the infrastructure, and their design should be thought in downsizing terms.

The roles of architects in the second demographic transition, and in a degrowth paradigm reconfiguration would be required to address both the theme of sufficiency and efficiency in their discipline. As mentioned in the previous pages,

the principle of sufficiency in architecture corresponds to the reconfiguration in the architectural production process that would support the paradigm change. Thus, architects finding themselves in a situation of increasing built environment surplus and civil society participation, would contribute in the transition toward degrowth, and the maintenance of the quality of life in urban areas, supporting citizens' responsibility and mobilization in the architectural production process. And, on the other hand, they should investigate technical solutions to reduce the environmental impact at different scales. The technological advice would then be presented and discussed with the citizens to comprehend the possible implementation of the interventions. However, the responsabilization would probably lead citizens to comprehend the effects of their choices, especially in large scale terms, as the one of the planet.

The feasibility of the architects role in such a scenario, and its success, depends dramatically on an intricate system of variables, such as the predisposition of communities to adopt collaboratively action, the education and formation of architects in social discipline, the organization of each urban areas, as well as the government support in the transition toward degrowth. In any case, as demonstrated in the current studies the phenomena of

shrinkage will occur in almost all countries over the current century, and the paradigm shift toward degrowth would become a necessity in order to allow the habitability of our planet. Nevertheless, in the case that the paradigm reconfiguration would not be successful through education and responsabilization it will occur in the wake of the catastrophe.

In a nutshell, shrinkage and degrowth will require architects to think of the possibility to generate positive effects not solely through the physical modification of space, but rather through the productive process of architecture. With the intention to offer possible scenarios for the future, the following pages collect a couple of future imaginary settings that narrates through the role of architects shrinkage and degrowth.

04

TERRESTRIAL ARCHITECTURE MANIFESTO

a Statement for the Future

In response to the rise of contradictions and inequalities caused and aggravated, by the growth paradigm, we propose to experiment terrestrial architecture, within the ambition to generate a paradigm shift.

Instead of seeing degrowth as an obstacle toward a better living, we believe that it is more appropriate to place it at the heart of contemporary reflections, where its opportunities can be expressed, questioned, and experimented.

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what lies Ahead

Life in a Depopulating World

What Lies Ahead

Life in a Depopulating World

THE CHALLENGES AHEAD

Our future will contain something we have never experienced: a world growing smaller in numbers by choice.

We used to live on a planet that was relatively empty of humans; today it is full to overflowing, with more people consuming more resources. We would need 1.75 Earths to sustain the existing economy.

If depopulation is only a glimmer today, what will it be like half a century from now, when that glimmer becomes blinding?²⁰⁷

Everyone knows that we could produce and consume more efficiently than we do today. The problem is that efficiency without sufficiency is lost.

This is the defining, critical flaw in growth economics: the false assumption that all economies across the globe can continue growing while radically reducing environmental impact to a sustainable level. The extent of decoupling required is simply too great. As we try unsuccessfully to “green” capitalism, we see the biocapacity limits diminishing. Turning off the lights, taking

shorter showers, and recycling are all necessary parts of what sustainability will require of us, but these measures are far from enough. Most of our basic needs can be met in quite simple and low-impact ways, while maintaining a high quality of life.

The very lifestyles that were once considered the definition of success are now proving to be our greatest failure. Attempting to universalise affluence would be catastrophic. There is absolutely no way that today's 7.9 billion people could live the “western way of life”, let alone the 11 or 9.5 billion expected in the future. Genuine progress now lies beyond growth.

The reconfiguration toward a different paradigm must be voluntary, because any forced reconfiguration will condemn degrowth. Therefore, the questions are: Is there enough time to implement a voluntary paradigm change? Or the climate and inequalities effects would induce it to change in the wake of the catastrophe?

Like a snake eating its own tail, our growth-orientated civilisation suffers from the delusion that there are no environmental limits to growth. But rethinking growth in an age of limits cannot be avoided. The only question is whether it will be by design or disaster.²⁰⁸

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Future Scenarios

Bulletin from the Future

DEGROWTH AS A VOLUNTARY ACT

P.Z. Date: 21/06/2110

It all started in any form of education: at school, at home, in the street. There was a shared feeling that something was changing, but it was invisible. It was around the year 2035. History professors address that period as the paradigm change decade, where habits and choices of human beings, especially from the so-called 'Developed countries', shifted in other directions. The process took years, indeed almost a decade, but in the end, it succeeded. History books say that the paradigm reconfiguration was voluntary; people decided by themselves that their habits were harmful, not for them but their children and other human beings living in the other part of the planet. According to the historical sources of the time, the reconfiguration started from a bunch of people spread in all the countries that promoted a sensibilization campaign that addressed the contradictions in everyday choices. These activists used the old billboard panels to expose the contradictions, which were addressing the so-called 'hidden cost' of commodities, such as human and resources

exploitation. I remember a story from my grandfather regarding his mother, who was thirty at the time. She told him that these activists were permanently present in the street beside the panels, providing information about the commodities contradictions and the possible alternatives. And the most curious part, according to my great-grandmother, was that it worked. Indeed, she remembered herself at the time struggling to purchase a particular new technological tool, called PC, and once it was time to decide the model, she felt disturbed. Indeed, next to the long list of positive features of the tool, she remembered the flyer content given to her the day before by one of the activists. The content was simple and clear: remember that a gram of coltan is needed for every personal computer, and the mineral extraction is based on human exploitation; almost thirty thousand already died in the mines. She felt disturbed by purchasing the new tool, and she decided to maintain the old one, and repair it. According to her personal story, the disturbance appeared more often, and in a broader spectrum of choices, such as transportation, gastronomy and consumption. In addition, the disturbance phenomena spread widely to many people, who started to assist and support the activists. And that was the time when the so-called 'Degrowth local centre' appeared. Indeed, the 'disturbed centres' wanted to

imagine a ndisturbedity for diminishing their impact, especially in environmental terms. So they decided to create local groups of activists to imagine new paths that would enhance degrowth. In addition, in those years it was becoming evident the effects of the second demographic transition, and the governments and the market were not providing adequate answers to the lack of services and infrastructure maintenance, they said that they required citizens' support in the provision. Indeed, the decreasing number of human beings affected the perpetuation of the growth paradigm by the simple fact that they were less. In addition, the government was raising less capital from taxes due to the decreasing number of population and the increasing number of elderly. I remember that in Italy, around the year 2050, each active working person should have supported two elderly, which was impossible to sustain.

In this climate, the degrowth supporters envisaged a chance to implement their reflections and ideas in the effects of population decline. Indeed, the possibility for civil society to support the maintenance of the quality of life could have been conducted according to a degrowth perspective. Indeed, the experimental LETS economy system was amplified, and almost every city neighbourhood adopted it. At the beginning elderly played a crucial part in maintaining the quality of life, managing the public space, becoming teachers, and running local supermarkets. Then, once the reduced working hours law was enacted, the different age groups gradually started to provide support.

The empowerment and responsabilization of civil society in the process was supported in

many ways, taking for example, my father, who at the time was a young architect, trained to design buildings and ended up supporting and advising citizens in the management and modification of the vacant space of the city. According to him the reconfiguration of his role, from designer to counselor, was a necessity; indeed the contraction of the population left no space and need for city expansions, and everyone was aware of it.

The real estate surpluses opened up to the appropriation phenomenon, which became global, there was a high housing and land vacancy rate in almost every city, which was understood as an opportunity to create something according to everyone's needs. It was around 2060. The narrations of my father concerned the transformation of the old ice skate rink in a BMX park, or the conversion of single vacant houses into artisan's workshops. He remembered to have assisted a young woman in transforming the empty floor above her apartment into a nightclub for the neighborhood, or the time when he supported the local farmers cooperative in converting the old cemented road into a continuous greenhouse, for winter cultivation. The cityscape was continuously retouched, and the available space for modification continued to increase due to the fertility decline.

On the other hand, my father was part of the city commission that was evaluating the infrastructure and transport resizing, in order to provide more green space and less cost of maintenance. In addition, the commission was evaluating how to compact the city in order to increase the density, and reduce the infrastructure, and so the environmental impact. The densification process required

around five years, and almost all the citizens that had to move from peripheral areas to central ones understood and shared the reasons. The model of compact city has permitted to reduce by almost fifty percent the city covered surface area without developing any buildings.

The success of the responsabilization and sensibilization campaign has allowed us to avoid the catastrophe. And nowadays, in 2110, the culture and mentality of the last century is incomprehensible, almost illogical. Indeed, for my generation the necessity of the limit is unquestionable, and everyone is aware of it. The responsibility in global terms is unquestionable as well, and the choice effects are always considered in their integrity. This recap of the second short-century was necessary to understand a discourse that I heard today in the news. The headline was mentioning the return of growth on occasion of a soon planetary colonisation. I couldn't understand what they meant with growth, but now it appears clear, they meant material dissatisfaction.

DEGROWTH IN WAKE OF CATASTROPHE

P.Z. Date: 21/06/2110

The sensibilisation started too late, it was around the mid of last century. The premises of the event were clear, but hardly to believe. Someone started to take action in advance, around the '30s, but their number was still insufficient to realize a proper reconfiguration. Even some of my colleagues, architects, have tried to prepare citizens for the coming reconfiguration through their discipline, but still these examples were dramatically isolated. Cities continued to expand in some old way, even if the number of urban residents started to collapse from the '50s. At the early stage, the competition among cities for attracting new residents was merciless; each European local council administration invested their resources in massive flagship projects, but there was no relationship between birth rate and capital investment in city renovation. As a result, the population continued to decline.

In addition to the demographic contraction, the lifestyle and the exploitation of resources did not change in those years, the slogan "Growth would produce well-being" remained a belief. The optimism that a reduction in the population number would have corresponded to a more equal

distribution of resources quickly vanished. Indeed, an incredible minority of the world population continued to live at the expense of a large exploited one, that became 30% of the global share due to the vigorous demographic increase in Africa, which within a few decades started to diminish as well. The shared myth that technology would have allowed the expansion of well-being in the future without any compromise on lifestyle was on the edge, the biosphere reproduction was constantly diminishing.

The catastrophe arose in the second half of the century, around the '70s, without any warnings. The prediction of Jonas was: It was once religion which threatened us with a last judgment at the end of days. It is now our tortured planet which predicts the arrival of such a day without any heavenly intervention. The catastrophe materialized as expected, an increasing temperature worldwide, with tremendous peaks, of about 4 degrees, in the regions of the tropics. As a result, most central african countries became hardly habitable, and their food production greatly diminished. In addition, many coastal areas started to be flooded, and the number of exceptional climate events became yearly. These impacts affected the biosphere productivity, and so the available resources in the planet, luckily the population were diminishing. However, some of the countries that have largely contributed to the exploitation of resources gained from these climate reconfiguration, such as Netherlands, Germany, Norway and Sweden, given that the increase in average temperature engrossed their food production capacity. The humor of the catastrophe. Worldwide the institutions demanded a strong and immediate modification in the lifestyle consumption of

citizens, given that all countries were scared of the increasing reduction in food and commodities production due to the climate impact. However, the change of imaginary could not be conducted in a few months. Indeed, over several years, the widespread paradigm of endless growth started to be decolonized by the necessity imposed by resource shortage. In addition, the economic downturn of government and market, caused by population contraction and climate events, reduced dramatically the provision of services and commodities. The necessity of change was real. Those years were characterized by a spread of confusion both among citizens and institutions, the development model of the past was not resolving the problems, but rather exacerbating them. In the wake of this situation, the unheard possibility of degrowth started to be considered as a valid option. Indeed, the climate of need in terms of service provision and quality of life forced civil society to take action toward change and embrace an active role in maintaining the quality of life.

In respect to urban areas, an increasing number of buildings started to become empty, as happened in Japan at the beginning of the last century, and the infrastructure maintenance costs turned out to be extremely expensive for the government. In addition, the decreasing share of youngsters in the population has aggravated the economic income of institutions that should have supported an increasing number of retired residents. In fact, already in 2050 the number of retired residents in many regions was over 75 units out of 100. However, the number steadily increased in the following years, stabilizing in the '80s. In order to provide a solution for the

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 Directions

unsustainable model of the past, the governments enacted the weekly reduction hours law, that reduced the working hours of a quarter in respect to the previous model. Then, the governments reduced the weekly hours of another quarter over the decades. The reduction in working hours allowed the citizens to explore a series of activities that could maintain the quality of life in their urban areas, such as service provision, elderly caring, and afternoon teaching. These were just some of the first activities to emerge. As a result, the LETS economy started to spread.

As in the case of my city, collaborative actions among citizens appeared in the early '70s, and they mainly focused on the provision of essential needs, such as the provision of food and education and the maintenance of the public spaces. Most of the duties were conducted by elderly residents that had the expertise and available time in respect to young workers, and children. But once the working reduction hours were implemented, the entire spectrum of citizens collaborated in the provision. On the other hand, institutions started to understand how to reduce maintenance costs and energy consumption by better allocating dwellings and infrastructure.

In my city, the institutions opted for urban perforation, given that it would have allowed redistributing green areas homogeneously

through the built environment. In the reconfiguration process, the local architects supported both institutions and civil society. Indeed, on the one hand, they discussed with citizens the reason and necessity of perforation, explaining the positive impacts that a reduction of the built environment would have on the emissions and the liveability within the city. On the other hand, architects supported the inhabitants in the conversion of buildings and void areas. Indeed, numerous buildings were not entirely demolished but rather downsized, and their use converted according to the necessity of inhabitants. For example, taking the current indoor skatepark, which 15 years ago was a gym, and when it was realized a post office for the neighborhood. Sometimes the citizens followed the suggestions of the architects, other times they didn't, however every time they took responsibility for their actions.

The most challenging part for social actors, such as architects, involved in the advisory of citizens' choices was to make them aware of the large-scale impact of their actions. However, the increasing number of exceptional climate events finally led to the comprehension of their choices' impact. As a result, the world started to appear as it is, a close system with finite resources and shared effects.

In my city, the cooperation among

citizens was easier to implement, given that there were already a modest amount of voluntary associations and community organizations that supported the organization of the citizens' cooperative actions. For example, in the early '80s, the citizens of the West neighborhoods collectively operated a profound transformation of their built environment, transforming the disused parking lot into a series of multifunctional spaces, such as outdoor training area, open-door kitchen, gardening, and food productions. Citizens entirely conducted the transformation through government funds, and the team of local architects altogether assisted the process. These collaborative transformations spread over each city, and everyone was looking at the old Landscape Belt experiment in Dessau, but the size was enormously wider.

Over the years, my city started to reacquire an appropriate size, with an adequate quality of life, and correctly sized services such as schools and public transportation. The services, the built environment, and the open spaces responded to the needs of citizens. For example, regarding the built environment and void space used for reconfiguration, when citizens wanted advice about the process, the material, and the impact of the conversion, they could book an appointment to the architect's office, located in the community center. The citizens and the architects would discuss the possible implementation, the needs of the citizens, the effects of their choices, the workers that could develop the structure, and the entire architectural process. The discussions were always conducted with other experts, such as sociologists and anthropologists that could comprehend the relationship between the citizens and the place, and so the reasons for

their needs. The humbleness of its role persuaded me to become an architect, and so to support the citizens of my city in appropriating and reconfiguring the space. I needed to read through the events of the last century because nowadays, in the year 2120, after almost 40 years of demolition, the city council approved and funded the realization of a new building, a new city council. Nevertheless, it seems that the old-growth paradigm is not dematerialized.



TERRESTRIAL ARCHITECTURE MANIFESTO

In response to the rise of contradictions, inequalities and foolness caused, and aggravated, by the growth paradigm, we propose to experiment terrestrial architecture, within the ambition to generate a paradigm shift.

Instead of seeing degrowth as an obstacle toward a better living, we believe that it is more appropriate to place it at the heart of contemporary reflections, where its opportunities can be expressed, questioned, and experimented.

A commitment to reformulate the role of architects and architecture in our society, that will support the voluntary transition from growth to degrowth, and thus avoiding the pedagogy of catastrophe.

1. **UNLIMITED GROWTH CANNOT BE SUSTAINED IN A CLOSE SYSTEM WITH FINITE RESOURCES, AS OUR PLANET.**
2. **INVERSELY TO THE CURRENT GROWTH PARADIGM, THE BIOSPHERE CAPACITY IS DIMINISHING, AND SO THE LIVEABILITY ON THE PLANET.**
3. **A CHANGE OF PARADIGM TOWARD DEGROWTH IS THE SOLE SOLUTION TO AVOID THE CRISIS, AND TO ENACT EQUALITY.**
4. **PARADIGM RECONFIGURATION HAS TO BE TRADUCED AT THE IMAGINARY LEVEL, VIA ITS DECOLONIZATION, AND RESIGNIFICATION ACCORDING TO DEGROWTH PRINCIPLES.**
5. **THE PRINCIPLE OF SUFFICIENCY REQUIRES A DECOUPLING OF ECONOMIC GROWTH FROM NATURAL RESOURCE USE AND ENVIRONMENTAL IMPACTS.**
6. **THE PRINCIPLE OF EFFICIENCY DEMANDS TECHNOLOGY TO SUPPORT THE WELL-BEING OF HUMANITY ACCORDING TO TERRESTRIAL LIMITS.**
7. **THE ROLE OF INTELLECTUALS AND ADVOCATES IS TO RAISE AWARENESS TOWARD DEGROWTH, AND TO IMAGINE A CORRESPONDENT PRAXIS.**
8. **THE TRADUCTION OF DEGROWTH IN THE FIELD OF ARCHITECTURE DEFINES THE TERRESTRIAL ARCHITECTURE MOVEMENT.**
9. **TERRESTRIAL ARCHITECTURE ANEW ADDRESS THE PLANET AS REFERENCE SCALE, AND THE BIOSPHERE LIMIT AS BOUNDARY OF WONDERING.**

10. **ARCHITECTS ARE CALLED TO BECOME PRODUCERS, AND SO CONCEIVING ARCHITECTURE AS A TRANSFORMATIVE PROJECT OF THE PRODUCTIVE APPARATUS TOWARD DEGROWTH.**
11. **DEGROWTH DEMANDS CHOICE'S RESPONSIBILITY, AND SO THE ARCHITECTURAL PRODUCTION PROCESS PLACES CIVIL SOCIETY AS PRIMARY ACTORS OF THE PROCESS ITSELF.**
12. **THE REAPPEARANCE OF INHABITANTS' RIGHT TO REINVENT AND CHANGE THE CITY ACCORDING TO THEIR NEEDS PERMITS THEM TO TAKE THE REINS AND RETHINK THE BUILT ENVIRONMENT SURPLUSES.**
13. **THE ARCHITECT'S ROLE IS TO INVESTIGATE CIVIL SOCIETY JUSTIFICATIONS FOR THEIR ARCHITECTURAL CHOICES, THROUGH SUPPORT, ADVISE AND CRITIC IN REFERENCE TO SUFFICIENCY.**
14. **IN PARALLEL, ARCHITECTS ARE RESPONSIBLE TO INVESTIGATE TECHNICAL SOLUTIONS AT DIFFERENT SCALES THAT WOULD CONSERVE THE LIVEABILITY OF THE PLANET.**
15. **IF THE PARADIGM RECONFIGURATION WOULD NOT BE ACCEPTED, AND THE ARCHITECTS WOULD NOT SUCCEED TO RECONFIGURE ITS ROLE, THE TRANSFORMATION WILL OCCUR IN THE WAKE OF THE CATASTROPHE.**
16. **IT IS OUR PLANET WHICH ADMONISHES US TO TAKE A PATH TOWARD DEGROWTH BEFORE AN UNCONTROLLABLE SCENARIO WILL OCCUR.**

05

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