



# The Learning by Doing Project

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Portfolio of visions and  
graphic interface  
2022 / 2025



LEARNING  
by **DOING**



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## Introduction

The starting point for the Learning by Doing (LbD) project has been the question of what a good life would look like circa 2050 in specific locations, within a carbon budget compatible with a 2-1.5°C temperature increase, and that recognises the associated climate impacts. LbD used the iterative methodology developed to search for answers to this question as a learning exercise for all participants (i.e. a learning by doing exercise).

To address the scale and speed required in responses compatible with the requirements of the Paris Agreement, there is a need for attractive inspiration to be positively pursued; fear of failed transitions may not be enough. For this reason, the asking by Learning by Doing (LbD) of what could a good life in 2050 compatible with a temperature rise limited to 2-1.5°C look like might be a much more appealing route.

In this search, rather than seeking how to override a diminished scope of considerations for action for the sake of efficacy or efficiency, the project aimed to examine how the imagination, in dialogue with experts based locally and others with knowledge of climate and economic policy and the humanities, can improve the understanding of how these societies might imply a good life. It seeks to find out how the pursuit of the good life and a good society may spur action on its own, and how analogically inspired narrative approaches can help inform and guide more univocal and analytical research while helping inspire more permanent changes for the good in the way the social sciences and political action advance. If successful, this project's outcome could help preserve, transform and improve critical aspects of the understanding of the human relationship with its environment on the national and regional levels. Such a process of preservation, transformation and improvement would be mediated by a knowledge that comprehensively includes but also goes beyond purely economic efficiency or social policy considerations.

In what follows, this report first outlines the process through which the visions were developed, and their components, and the analytical process developed around it. This first section also examines some of the interaction of these visions in terms of written, numerical and graphic scenarios, and a summary of findings. After this initial section, the report presents some of the narratives developed by the scrum exercise. This is then followed with some of the illustrations and graphical examples.

## Developing Visions of Life in 2050: Process and components

The project seeks first a vision of a society compatible with a 2-1.5°C increase in temperature as a tentative goal. This purposeful end serves as a good endpoint towards which to strive allowing participating teams and researchers to both examine and test the internal consistency of the vision in a specific time and place, as well as of the trajectories that might lead to it.

The project's proposal of a vision of a 2-1.5°C society has some common minimum elements. It is one in which a society has emissions aligned with the Paris Agreement's target that seeks to achieve a balance between anthropogenic emissions by sources and removals of greenhouse gases as soon as possible in the second half of the century. Crucially, the project is also taking this vision as one that fosters free human flourishing in society while being capable of operating within a stable economy and polity. Country teams have added additional, associated, more specific elements—such as compatibility with Sustainable Development Goals (SDGs), inclusivity in socio-economic development, husbandry of natural resources and biodiversity, adoption of innovative socio-economic aspects including nature-based services, elements of circular economies, sustainable development. A key cross-cutting consideration is that this society must





not only technically deliver the targets the teams identify, but must also be a society that may be seen as appealing: a society with attributes that can be characterised as free, useful, pleasant, and honourable; by definition, attractive to a broad swathes of the population to functionally support as a destination in the transition to net-zero emissions and adaptation to climate impacts in the next thirty years.

The LBP project also produced graphical output (more on this below) as well as additional outputs on portfolios of i) projects and ii) policies -domestic and multilateral- required to enable them. These may include “low hanging fruits”, but also those on the hard to abate sectors, taking into account the technical aspects of the equation. Various learning opportunities, knowledge management, and dissemination are used as a way of transmitting to society at wide, a better understanding of what is feasible, how it can be achieved as a whole, where challenges lie, and how would life would look like, even in sectors that people would typically say are hard to decarbonize.

In seeking to respond its opening question about a good life, the project explored new ways of developing climate action pathways. Traditionally, climate ambition centred on specific mitigation or adaptation outcomes, almost exclusively, looking to deliver a sort of efficiency of effort. However, often these approaches are politically or socially unfeasible; leading to a stop-and-start paradigm, support delivered through external experts, or indefinite subsidies; none of which are sustainable or scalable methods. LbD dealt with the reality of political and economic sustainability in a world that is not delivering the breadth of climate action at the speed required, leaving societies to simply suffer climate impacts with scarce opportunity for ambitious action.

The Project found that framing successful examples within flexible policy and finance frameworks, and participative co-management schemes helped to create conditions for demand. Sectoral transfers, policy packages, and co-management schemes also provide participants with models, know-how and shared interests to supply reductions with potential service synergies. The iterative methodology helped to match supply and demand at scale, while shared visions and objectives help disseminate, inspire, and press for further action in society and govt. LbD modelling and tracking, and organization to enhance NDCs for a 1.5-2°C maximum global warming.

## **Vision Development: Approach, Methodology, and Scrums**

The overall project started with a premise, that climate action needs to be attractive and understood as a good life. It is not obvious that the climate problem, seen solely as ‘reducing emissions’, ‘adapting to climate change’ and addressing loss & damage, incites enough social demand to make the necessary political, institutional and macro-economic changes to meet the goals of the Paris accords. To address the scale and speed required in responses compatible with the requirements of the Paris agreement, there is a need for attractive inspiration to be positively pursued; fear of failed transitions may not not enough. In this vein. Learning by doing (LbD) explored another route: what could a good life in 2050 compatible with a temperature rise limited to 1.5/2 °C look like in 2050? It explored this question, in various ways, in different contexts.

The idea of a good life was identified through a series of project meetings with a groups of academics, researchers and policy makers. This group produced a characterization with 4 notes: a sense of relations and conviviality; creativity, with nature and with each other; contemplation of nature and surrounding and spirituality, an appreciation that does not necessarily seek to modify what is contemplated; and a sense of agency and influence. These aspects, in addition to the diminished emissions and increased resilience,

where taken as the objectives or policies and actions within the project. The different country teams would define narratives of the good life in each country compatible with these views, as well as the policies and actions associated with them. They could develop and pursue them as they saw fit in their own circumstances.

In its search to address these questions comprehensively, the project advanced both cross-project conversations and advanced in-country work. Cross project meetings in Craiganour, Scotland, Santiago, Chile, and remotely, were advanced by LbD during 2022 and 2023 with strategic thinkers from multiple disciplines, from the humanities to economics. These meetings highlighted the importance of conviviality, creativity and contemplation, in addition to the struggle towards climate justice, as aspects to consider in its search for pathways leading towards a good life lived in continuity, rather in rupture, with nature.

In advancing its responses, the bulk of the LbD work explored how the pathways would look like if a just transition in country pointed towards achieving a good life. In so doing, the convivial, institutional and social aspects of well-being emerged as particularly relevant– and not only technologies, and financial and business models. The understanding and development of these aspects were deemed to be supported in turn by developmental narratives across sectors which are deemed to be interrelated. These narratives were not taken as predictions; instead, they are examples to learn from and expand the sense of the possible and feasible in the search for a good life in specific places compatible with 2 to 1.5 degree temperature increase by 2050.

The pursuit of such a “good life” in specific areas involved policies and actions to align services, infrastructure and finance with low-carbon futures and resilience, while considering local culture and interests. Following LbD, research on collective action and finance will incentivize partner countries to engage in multilateral action, fostering synergies and enhancing financial sustainability. The project connected these efforts across civil society, including local associations and user groups, using context sensitive co-management models.

The LbD programme as a whole used iterative Agile/Scrum methodologies in its country work, to address these issues in a way compatible with LbD’s own philosophical approach. These methodologies focus on the end problem that is being sought to be addressed, but allows flexibility in the search for solutions. In doing this, LbD does not presume to already know its end-products – instead, agile iterations facilitate adapting the direction of activities to emerging findings by teams. To facilitate a comprehensive response, rather than producing outputs in sequence, the methodology seeks to assemble all products simultaneously, so as to examine how well or not they work together. The iterative Agile / Scrum methodology is illustrated in Figure 1.

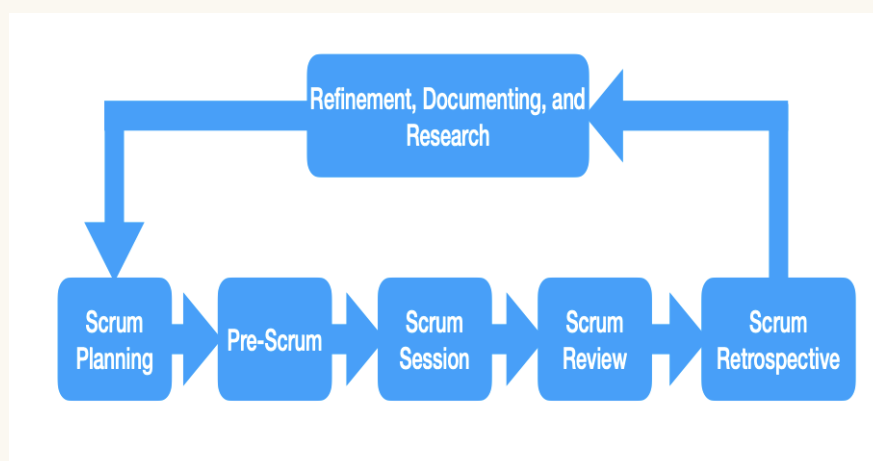


Figure 1: Agile / scrum methodology used in LbD programme



In terms of work methods, the methodology partners country-based stakeholder groups and experts (“country teams”) to engage in joint climate activities (“scrums”). The series of scrum meetings in South Africa is reported in further detail, below. Scrums allow participants to exploit long term synergies and learning between projects on multiple levels. Portfolios of multilateral actions are both enriched by and enhance domestic action. LbD facilitated local scrum stakeholders to work together cross-sectorally around particular sectoral concerns. Country teams used all these to simultaneously develop visions, technical and convivial options, and policy and financial pathways for a “good life” in 2050, with key sectors moving to net-zero, and resilience for impacts in a 2-1.5°C world.

Within this methodological approach, country visions were developed so they could be back-casted to the present as a guide to further develop policy pathways and projects. Back-casting operates from a future end point (i.e. the vision of the good life in 2050 compatible with a 2 – 1.5 future) towards the present. Back-casting is the reverse of forecasting methodologies, which advance from the present towards the future.

In this vein, the LbD project methodology was designed to avoid the temptation of thinking that the solution and/or best fit option to problems are already known. To do so, it explicitly starts from the presumption that the solution is unknown, and the project is designed to generate the capacity, and change and adapt, to seek potential solutions. This entails outlining in advance the process but not the proposed outputs: rather than saying it has them in advance, it follows a learned ignorance instead. There are a series of tools that LbD is using: the process of interviewing people, creating draft mental maps and draft portfolios of the process and potential solutions, in order to build storylines. In a similar vein, graphic novels are being designed to illustrate these visions and findings so as to spread the word. Finally the need to be inclusive and bring people and disciplines that are not usually included in these discussions is crucial for the project.

A back-casting approach provides more degrees of freedom and a wider range of options when discussing policy options. Back-casting provides a larger range of options to consider for the present, as it is not the starting point for the analysis. Back-casting seems to be better suited to explore the consequences in the present of alternative futures, the role that a purpose may have on guiding actions, and how a good life is linked to climate action.

When contrasted with the more frequently used fore-casting methodologies and results, back-casting also expands the envelope of appealing and feasible solutions to be considered when contrasted with forecasting methodologies. As a contribution to the whole project methodology, the South African team further reflected on the advantages of backcasting and fore-casting, and Prof Winkler pointed to literature that considered a ‘golden diamond’ that might combine both approaches, as illustrated in Figure 2.

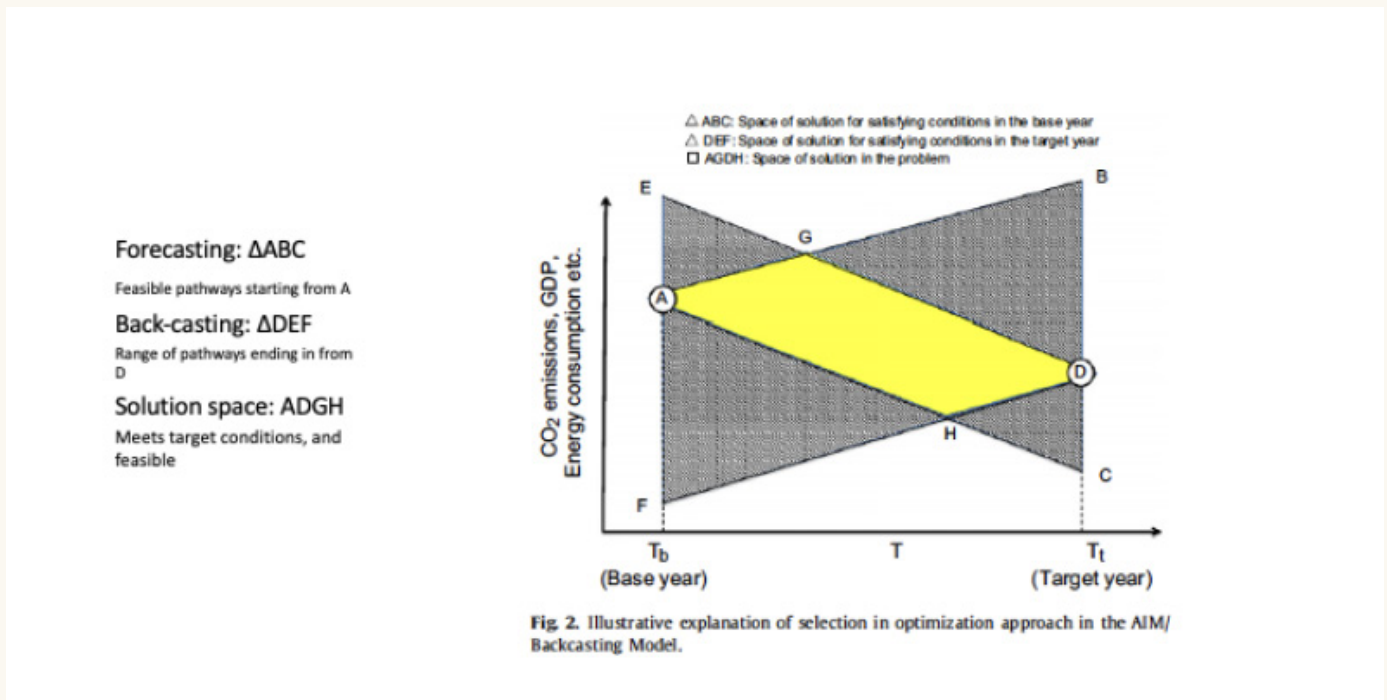


Figure 2: Backcasting and forecasting (Ashina et al, 2012 )<sup>1</sup>

In this vein, LbD specific, appealing, and holistic visions of a good life both expanded the range of options for analysis, while at the same time providing a central motive to enhance the capacity of wide ranges of stakeholders in key sectors to address the speed and scale of the transitions required from our current lives.

## Visions and Scrum sessions within LbD

Following the LbD methodology, a core activity of the LbD project has been the scrum meetings. Each country advanced at least 4 of these meetings. The scrum also allowed to think further about backcasting pathways, and about scenarios with both imagination and rigour. Methods to include qualitative aspects into quantitative analysis, and the role of “good life” considerations were explored in particular, as well as how these fit into the quality of life in a specific place. These were considered to be an aspect distinct from low carbon and resilience, albeit including them. For instance, ongoing traffic jam with electric cars may have lower emissions, but are nevertheless not compatible with a good life.

Thinking within the scrums produced a matrix to develop the narratives. On the one hand, this considered good life in specific places, with high and low emissions, and or high of low levels of adaptation and international cooperation. This resulted in “Eu-topian” narratives (by which it was meant to a beautiful, well ordered place, rather than an U-topian, i.e. Non-existing place), and contrasted this with a “Dystopian” narratives (or those about living in dismal places. Emission levels and impacts and adaptation were considered in each case. This produced a matrix for modeling, as shown in 3 below:

<sup>1</sup> Ashina, S., J. Fujino, T. Masui, T. Ehara, and G. Hibino, 2012: A roadmap towards a low-carbon society in Japan using backcasting methodology: Feasible pathways for achieving an 80% reduction in CO<sub>2</sub> emissions by 2050. *Energy Policy*, 41, 584–598.



	<b>Eu-topia</b> (i.e. more of a happy place)	<b>Dys-topia</b> (i.e. more of a dismal place)
<b>High international cooperation</b>	<p>Low emissions Good life Low level of impacts</p>	<p>Low emissions Not good life Low level of impacts</p>
<b>Low International cooperation</b>	<p>Low emissions Good life Higher level of impacts</p>	<p>High emissions Not good life Higher level of impacts</p>

Figure 3: Matrix for modeling, translating narratives into storylines that can backcast

The matrix in figure 3 was useful in translating narratives into pathways that could be modeled, in the spirit of backcasting from a desired 'good life'. In that sense, the emphasis was more on the eu-topian storylines, yet scrum members from time to time raised that the vision was quite far from present reality, which is perhaps closer to dys-topian. This matrix was used as inspiration in turn to develop further thinking about the combination of narratives and models as the scrums progressed.

Following these insights, scrum produced narratives. The project narratives sought to provide a vision of a route and destination; a sense of the good life in specific places in, how it was achieved, and associated risks. It also helped outline a sense of continuity, place, agency and relation with other beings. The scrums then examined specific routes -policy pathways- within sectors, and how does these pathways would happen. Likewise, the LbD project developed thinking about opportunities for cooperation. This as focuses primarily at the national scale. A rich set of issues has emerged, mindful of what might add be innovative beyond the existing national portfolio, and where this indicates opportunities for multi-lateral cooperation. In the context of a just transition, skills, capacity and knowledge at a systemic and institutional level have been highlighted as crucial to implementation. Indeed, the capacity of poor communities and workers to define their own futures if – and to ensuring that the transition indeed is foundational to ensuring that transitions are just. The 'good life' cannot be a future vision only, the pathways of getting to such a future must become real and be considered as part of the developmental path for various systems and communities.

A key qualitative output of the project was the emerging narratives embodying visions for development in each country. Throughout the Project, most of the country teams advanced in developing narratives and sectoral storylines first, but restrained from diving into modelling at the outset. Instead, most of the work around narratives and storylines sought to provide first a shared starting point for subsequent mod-

elling. This avoided a situation in which storylines advance only briefly, in the urgency to parameterise a model, do the hard work of collecting data and making the model run. There is also a view shared across various teams, that the modelling approach –its process and the model characteristics–, should not be taken as the key circumstance that defines what is identified as valuable in the discussion. Instead, it was preferable to have a process that outlines in a wider discussion what is important to consider, including elements outside the model (given a model’s necessary simplification of complex social processes), rather than to take a model and base analysis principally on the model’s variables. If the model defines completely the parameters on which the analysis is going to be tested, then any subsequent focus cannot be adjusted.

Country and cross project teams worked on illustrating both how would a good outcome (an Eutopia) and dismal one (dystopia) may look like in a place. The scrums developed written narratives and goals, while technical teams in each country labored to combine them with analytical tools. In the pursuit of showcasing this interactions, various scrums within the project worked to develop illustrations ranging from the present to the dystopian and utopian scenarios that we have identified and present them online. The teams from Mexico, the Dominican Republic, and Latin America worked together to envision these scenarios, write texts about them, and support the illustrator in their task of depicting them. These drawings have been used to create an app that is hosted on the website. The app is interactive and allows users to engage with different scenarios and comprehend the process through which Learning by Doing arrived at the conclusions presented there.

In South Africa and Mexico, the project team worked with Scrum members in both countries to create illustrations that allows users to see, in a single image, a dystopian and a utopian future, and it was used to illustrate the work on the Development of transport storylines, and for the transition of the economy for the transition from the current modus operandi to a good life. Drawings illustrating both eutopia and dystopias were prepared more general for various countries, and also in more specific places, using a town in Zapopan, in the city of Guadalajara, in Jalisco, Mexico. More broadly, these activities helped identify in more detail exactly how a Just Transition (JT) is included in the pathway and the vision for a good life in 2050 that is compatible with limiting global warming to well below 2 and 1.5. °C.

## Backcasting pathways

The team continued its work looking at the ways in which modelling can be used to complement the narratives as well as include different scenarios in guidance with the finalized narratives.

From the work of the country teams, key terms emerged- Scenarios: “Scenarios are stories told in words and numbers; with rigour and imagination” (GSG). Narrative: “painting with words the society we envision in future”. Pathways: “Trajectory from present to future, or future to present, typically modelled, emphasis is on numbers”. Storylines: can mean a) the narratives, or the story, or b) description of modelled pathways in words, then translated into numbers (qualify when you use this word).

While there were variations (Mexico being the most salient counter-example) most country teams held back from diving into modelling at the outset. Instead, its work around narratives and storyline sought to provide first a shared starting point for subsequent modelling. Too many modelling projects consider storylines only briefly, in the urgency to parameterise a model, do the hard work of collecting data, and making the model run. The scrum members spent more time and care, to develop narratives. Country and cross project teams initiated conversations on ways to combine qualitative and quantitative analysis, presenting on existing methods to combine and prompting discussion on how to sequence qualitative and quantitative work. Figure 4 below summarizes some of the thinking developed with regards to the links between the qualitative narrative thinking, and quantitative modelling.



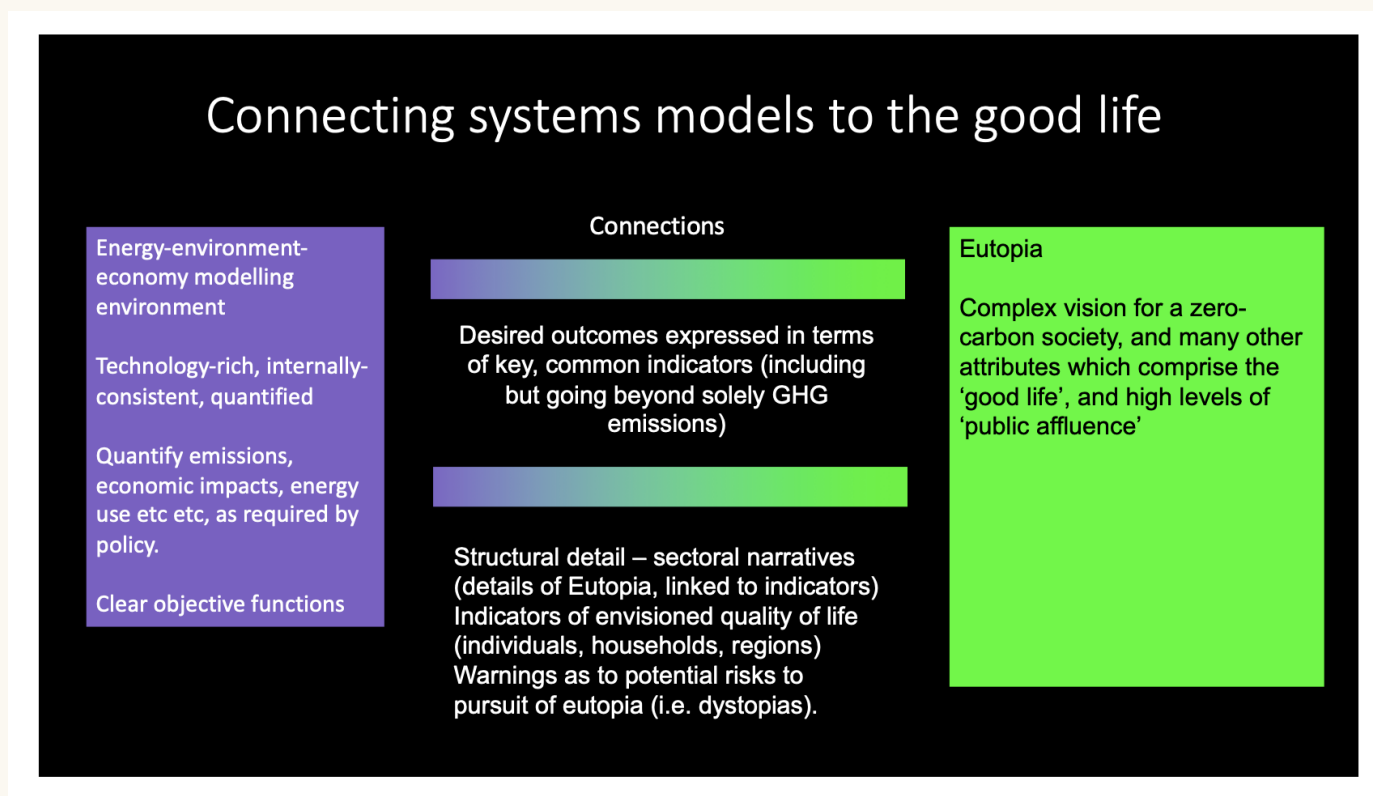


Figure 4: Connecting systems models to a good life (eutopia)

Through the series of scrums, there were discussions among country teams about these matters – the bulk of time was spent on writing narratives focusing on what a good life may be in specific systems and sectors, and how these may combine to enhance various aspects which were deemed to be compatible with public affluence, cooperation and reciprocity, and other aspects of social and personal well-being. These conversations provided a well-considered basis for storylines when the team turned to backcasting modeling.

The LbD Knowledge Management (KM) team accompanied the process – for the LbD scrums more generally, and some specific, and transcribed and coded the Scrum conversations. They then created a codebook to identify emerging themes. The KM findings were used in turn to feed in the narratives, as well as the land and transport spinoffs.

### Country Teams Analytical Interactions with the Visions

The rich visualisation of current and good life were translated into modelling and considering interventions that would enable development pathways supporting a good life. Countries followed different approaches to examine the relation between these visions and modelling.

#### *South Africa*

In SA, discussions singled out transportation as a key aspect of a good life. This was so considering the impact of people's mobility and access to opportunities, goods and services, as well as to their impact on affordability. Transport systems were taken to be key factors behind either the continuation of suboptimal outcomes, or a key component in positive changes in liveability. Transport was taken as a key cross-cutting example of integration across several key sectors. The group decided to use transport as an example of the LbD approach.

Marianne VanderSchuren, a scrum member, and a post-doc, Tanya Lane, were commissioned to undertake systems modeling to backcast, and produce Transport Development Pathway – with a strong narrative storylines complemented (qualitative) complemented by rich modeling results (qualitative). Based on the SA scrums and LbD work, a scenario planning model was custom built for anal analysis and validated against existing models. Prof Vanderschuren and Dr Lane also designed and executed a survey with respondents representing the South African population, to collect inputs for the model. The survey work was undertaken to complement existing information in modelling, from CfTS and the Energy Systems Research Group (ESRG, where Dr Marquard works). The survey was distributed using a graphic illustration, contrasting how would a good life and the current case would look like, following insights from the Scrum findings and the scenario development work. Figure 4 below illustrates a vision of a good life, from which TDP modeling backcast, and contrasts it with current life.

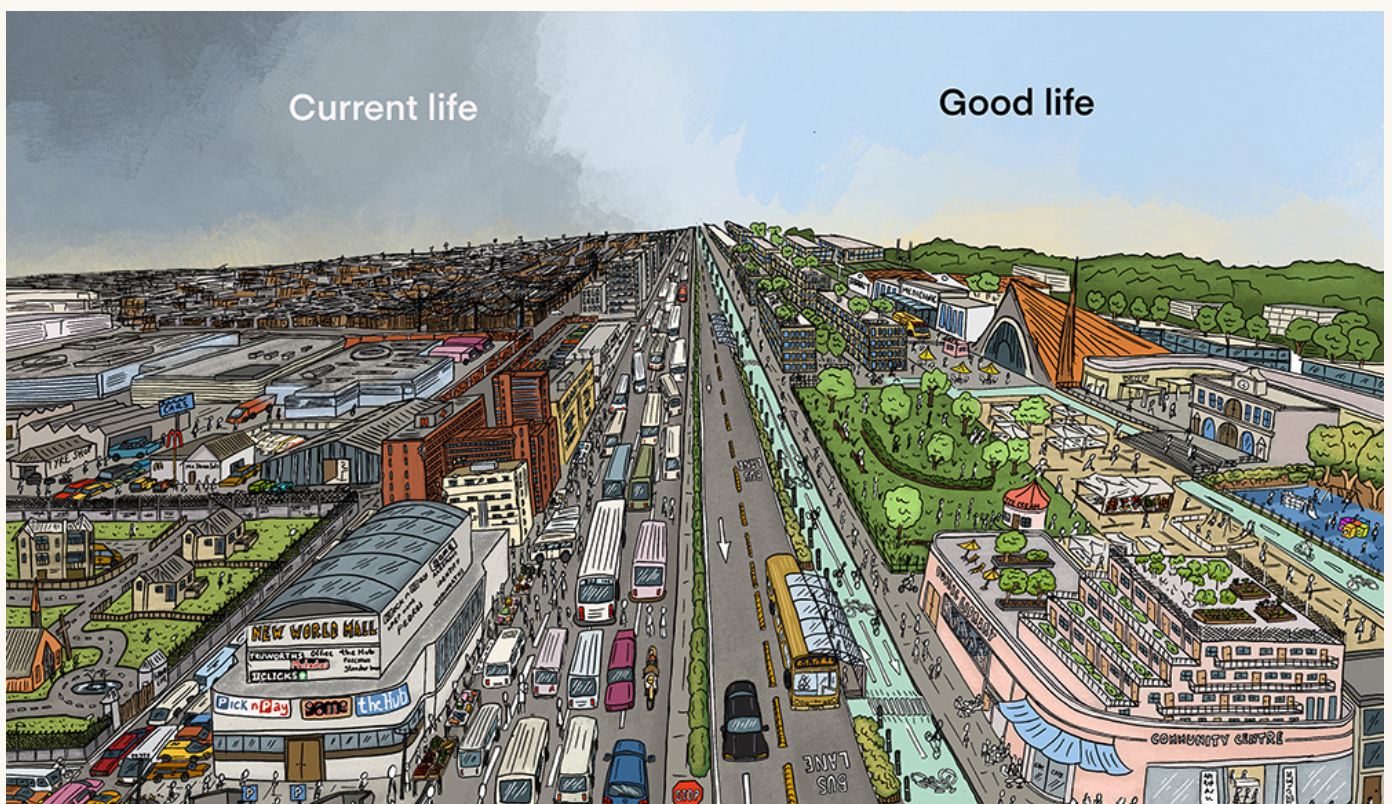


Figure 5: A good life and current life, visualisations used for backcasting modeling of transport development pathways.

5 below summarises the research methodology used in the modelling as a flow diagram, indicating how research advances through scenarios, as objectives are met (or not), signalled with blue arrows; while purple blocks signal where survey data was used as modelling input. Literature inputs are indicated in orange, and demand mitigation interventions are indicated in white.



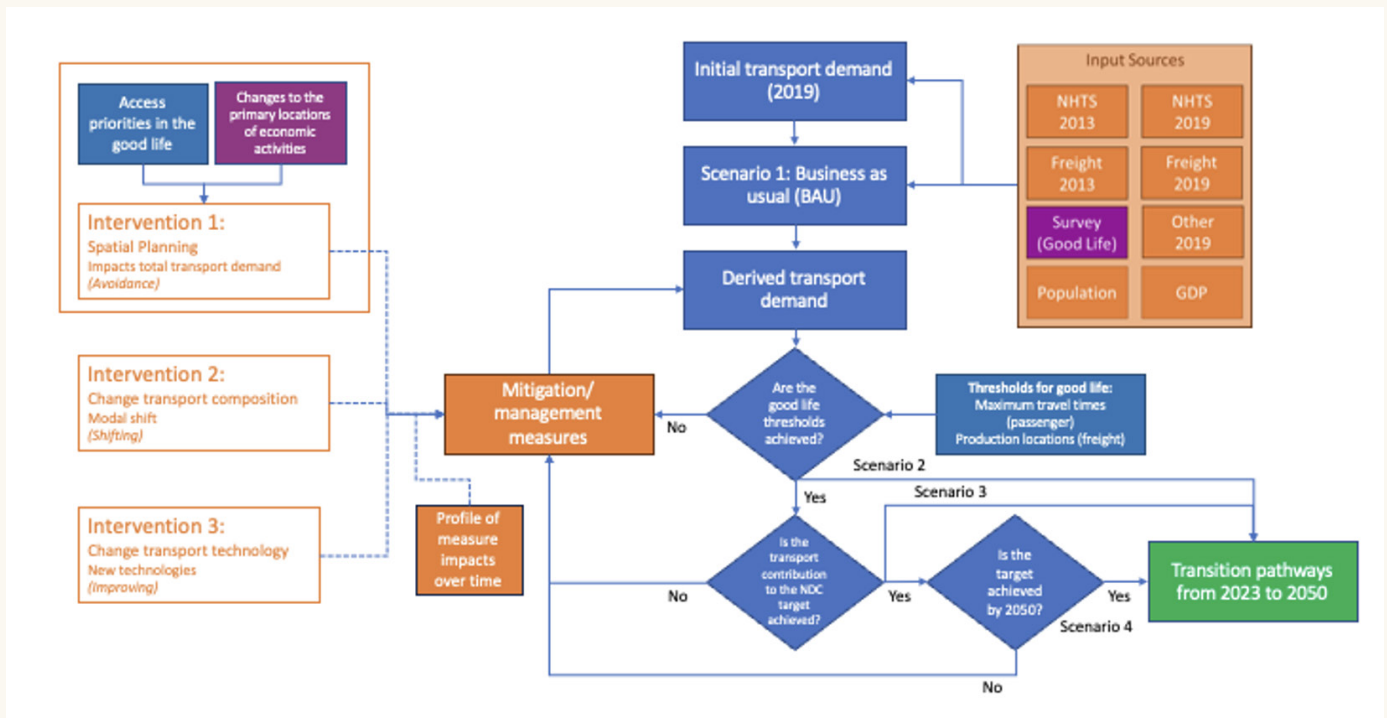


Figure 6: Methodology for backcasting modeling of transport development pathways for a good life in South Africa

The resulting transition pathways are shown in green, in Figure 4 above, which can also be considered contributions to a just transition to net zero emissions. The findings indicate there is no single 'silver bullet' for TDPs that deliver a good life, low emissions and few climate impacts simultaneously. Rather, attention should be paid to combinations, for example the nexus of land-use and transport energy management measures. Examining these connections illustrated that deep decarbonization in the transport sector would result from combining socio-technical and good life scenarios, working in synergy. Main conclusions highlight shorter trips as distinct from fewer trips, with similar emissions savings but greater socio-economic benefits. Secondly, it is possible to decarbonise transport to the required extent without giving up on the ideals of the 'good life'

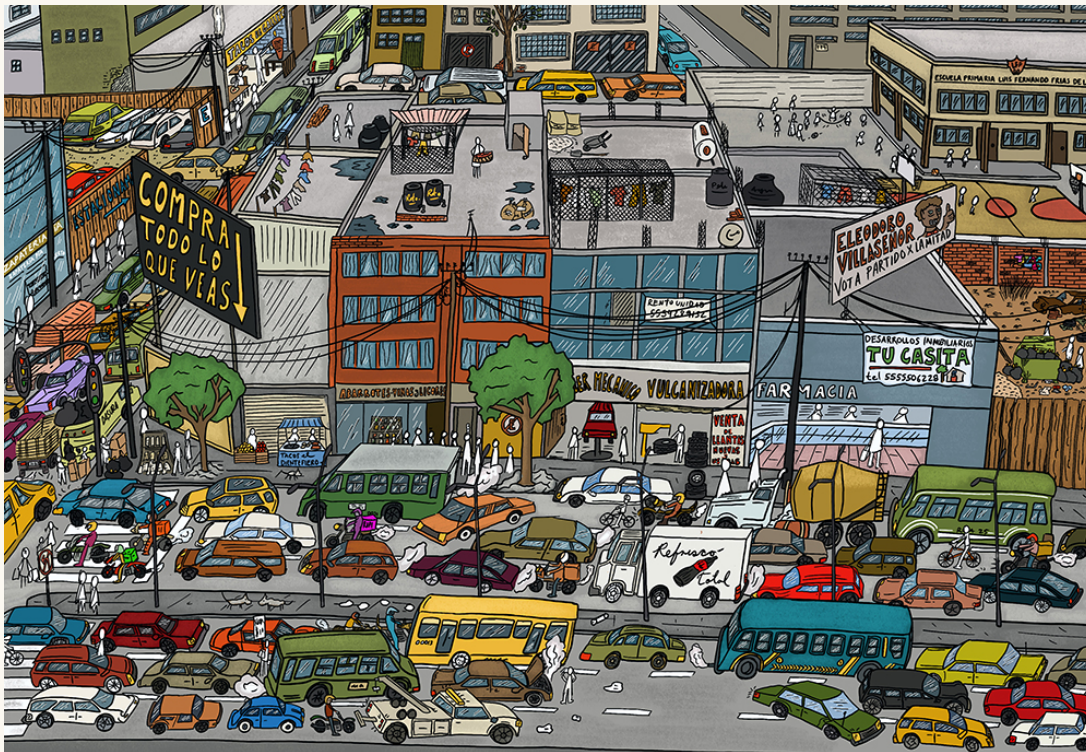
## Mexico

In the case of Mexico, the team simultaneously advanced its narrative and an underlying model. It also produced a graphic view of how would a orderly and disorderly transition look like. This was accompanied by the further specification and development of a general equilibrium model to explore the national implications of policy action in Mexico. The analysis with this model focused both on reducing emissions as well as on improving quality of life.

Unlike in the other LbD countries, which focus more on sectors, there is in Mexico a much close relation between the narratives and a model of the economy as whole. The core of the question that Mexico was examining has to do with timing. The model played out various scenarios to simulate the changes, from a 'disorderly case' considering a scenario where there is a slow uptake of carbon taxes, and then an abrupt change as radical action kicks in; and a more orderly case, where reductions advance slowly but non-stop. In parallel, the Mexico team spent a lot of time questioning why there is no real social demand for better climate policies in Mexico.



The general equilibrium model was advanced by Alejandra Elizondo and Maria Eugenia Ibrarran, with input from Juan Carlos Belausteguigoitia and Vidal Ramirez. They worked in parallel to the graphical tema led by Francisco de la Mora to collect information from their meetings and illustrate how would different scenarios look like. Their findings (in particular, as we will see, the need for more public goods) would be central to inform work on the subsequent site specific example in Guadalajara. The initial drawing of the impacts of various trajectories is illustrated below.





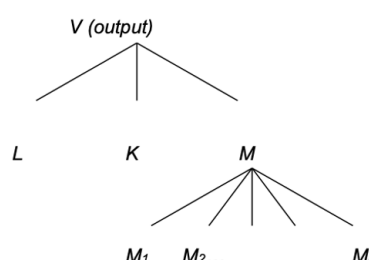
The model they used for Mexico considered economic activity disaggregated into 15 production goods, 4 household categories, 10 consumption sectors, a foreign sector and the government. Because of the importance of fossil fuels to the Mexican economy, and because so many of the policies which the team analysed have involved Mexico's energy sector, this model included a number of fuels and stresses the energy sector's linkages to the nation's economy as a whole. As such, the Mexico team approach is uniquely valuable in the project, as it begins from where other approaches end, starting with forecasting and gradually transitioning towards backcasting. Using this information, it examines the qualitative elements of the transition narrative. Moreover, since the Mexico team is principally comprised of economists and modellers, their insights have proven helpful to other LbD teams and in outreach discussions to other countries.

## Players and structure of the model

Producing Sectors	Production Goods	Consumer Goods and Services
Manufacturing	Manufacturing Goods	Food
Manufacturing for renewables	Manufacturing Goods	Energy
Chemicals and Plastics	Chemicals and Plastics	Autos
Other minerals	Mineral inputs	Gasoline
Agriculture	Agricultural goods	Consumer Transport
Transportation	Transportation for production	Consumer Services
Services	Producer Services	Housing and Household goods
Oil and Gas	Crude Petroleum	Consumer Goods
	Natural Gas	Water
Coal Mining	Coal	Health services
Electricity	Electricity	
Refining output	Refined output	
Livestock	Livestock	
Forestry	Wood and forest products	
Fisheries	Fish and fishery products	

Category	Income
Agent 1	Bottom 2 deciles: 1-2
Agent 2	Deciles 3-5
Agent 3	Deciles 6-8
Agent 4	Top 2 deciles: 9-10

$$V = \phi [\delta_L L^{(\sigma-1)/\sigma} + \delta_K K^{(\sigma-1)/\sigma} + \delta_M M^{(\sigma-1)/\sigma}]^{\sigma/(\sigma-1)}$$



In detail, the "Computable General Equilibrium Model" (CGE) developed by the Mexico team initially began studying the impacts of carbon taxes to different types of households. The analysis looks at all the sectors in the economy linked in a system where a change in any part affects prices and output economy-wide. The model is national in scope and Mexico's economic activity is disaggregated into fifteen production goods, four household categories, ten consumption sectors, a foreign sector, and the government; it is comprehensive, flexible, and adaptable to modelling a host of policy options. The figure below outlines its main structure.

Given the constraints of the LbD process as a whole—that the transition be to a Paris-aligned economy adapted to impacts at 2-1.5°C, the Mexico team developed two scenarios to study—both as pathways to the project's final position, and looking at these strictly in an econometric perspective.

The first of these scenarios was described as "orderly". In this scenario, carbon prices are driven up in an orderly fashion over an extended period of time. The second of these scenarios was dubbed "disorderly". In this scenario, instead of a slow gradual increase in carbon taxes, policy makers wait until 2030 to levy any carbon taxes at all. They then increase carbon taxes from zero to 700 dollars per ton of carbon over the following 20 years.

Qualitatively, the CGE model's results in the "disorderly" scenario are similar to those in the "orderly" scenario since the taxes are levied on the same sectors as before. Quantitatively, however, the effects are much more severe. This is due to the fact that, unlike in the "orderly" scenario, the taxes in the "disorderly" scenario are ramped up quickly and the economy does not have sufficient time to dissipate the severity of the initial shock. Investment is complexly choked off in the latter years of the analysis, the aggregate economy (as represented by GDP) stag-nates, and economic growth stalls. In other words, their econometric analysis found that if the "orderly" analysis was deemed to be unpopular, the postponement of the measures would drive a transition to the "disorderly" scenario, which would be economically catastrophic, or to no transition, which would be worse still.

Subsequently, the Mexico team, following the rationale of LbD's methodology, refined their research to consider societal actors in the transition, noting that "even when they do not lead to unemployment, economic changes associated with de-carbonization will create both upward and downward mobility within Mexican society." Further gains in welfare assessed in subsequent iterations resulted from a wider set of low carbon technologies and renewables being introduced. While there were still additional gains, this were not enough to compensate for the losses in welfare resulting from the transition to net zero. A further iteration was advanced introducing a wider set of public goods associated with specific projects across identified sectors within the vision of Mexico in 2050. This in turn resulted in only minor losses in welfare across most sectors, and these changes now becoming progressive (i.e. it benefitted low income levels most).

One of the key findings of this process in Mexico has been the discovery that central policies alone, focusing on pricing and taxes, may not be enough for a transition that pursues the vision of a good life compatible with a net zero approach. Instead, a coordinated array of sectoral policies and different means to advance collective action at various levels may also be needed. As Mexico considered its transition analysis examining carbon prices and taxes, it became obvious that even in the most orderly cases, the impact of large-scale climate policy is substantive as imposed through these means. In case there are delays, the situation worsens considerably. This implies that substantive opposition is also likely to emerge the more a transition takes to start. Consequently, more specific sectoral policies, compensation schemes, and additional public goods become central to compensate those which are most impacted. The role of local governments also becomes crucial. The provision of these public goods and compensation points both by local and central governments, becomes closely aligned with the emergence of a good life as the project public philosophy has outlined.

The full analysis of the Mexico case is included within the Mexico country report.

## *Lebanon*

Lebanon yet took a different route. The narrative and vision documents were developed by the Scrum team, and were probably the most developed vision of all the countries. These would then be used to advance research with a much more sectoral focus. Sectoral experts analysed policy options in health, water availability, energy, biodiversity, education, transport.

Lebanon had a series of interesting findings. The need for a sustainable and/or organic agriculture system with a specific food-security strategy. This will benefit other socio-economic issues. These multi-sector benefits originating in the agricultural sector can also aid the tourism sector by branding Lebanon as a 'Land of Diversity' to celebrate its natural assets, diversity in culture, heritage, biodiversity, culinary etc. These advances can be compounded with gains in a transport sector that could flourish with a transport demand management strategy, aiming to reduce the length, frequency and time of land trips and reduce





the use of private passenger cars. This could be achieved by reinforcing and supporting alternative modes of transport - walking, biking, motorcycles, mass public transport etc.)

The sectoral analysis was then taken to feed into the countries' own input output model, and then used to prepare Lebanon's Long term strategy.

### *Dominican Republic*

The Dominican team worked side by side with the Latin America and cross project teams. These teams engaged the government, and outward-facing engagements. It focused analysis on the impact on particular demographics of the developmental policies. More generally, this team focused on developing emissions calculators for countries (the Dominican Republic and Mexico) and regionally (Latin America as a whole), costs calculators to estimate the cost of change in equipment and infrastructure, and initial assessments of the use of input-output analysis to estimate the change in the economy structure as demand changed.

In the Dominican Republic, an analytical team formed by Luis Miguel Galindo and Jose Alberto Garibaldi with support from Omar Ramirez, Gilberto Arias, Rafael Beriguete and Michela Izzo, served as an analytical counterpoint to work by the scrum. The analysis used the countries own published long-term transition plans and those that emerged from the country's NDC to see how these overlapped with the narrative of the good life. In addition, a team formed with CATHALAC calculated 100 year national climate scenarios with municipal level resolution. Replacement cost and emission calculators examined the costs of the transitions in the key sectors as these narratives outlined. Galindo and his team also advanced more specific input output analysis in key sectors, particularly considering the relation between energy and transport. The Dominican team discovered in doing this that there is barely enough electric energy for the Dominican society to address its growth. Demand for electricity would grow further if the transport sector becomes increasingly electric, as it is likely to do. Likewise, it map vulnerable communities at national level. Thus, one key finding is that if a good life is pursued, the transitions which the government was planning would result in damaging deficits in required electric energy, with several deleterious effects in multiple supply chains and sectors. The situation gets worse if the full gamut of measures considered in the narratives are advanced. In addition, the range of vulnerable communities implies wider use of co management schemes to address vulnerabilities. These findings are now being discussed in the new government planning and tracking tools, so as to expand the electricity supply beyond current planning levels.

The analysis in the Dominican Republic's led to a re-assessment of the country projected energy needs, as the electricity transition needed to include higher demand because of the transport sector's transition, and future cost pricing was found to be based on historical costs for gas which had often been over-reached all elements pointing to a faster inclusion of renewable generation, not only to reduce emissions, but to smooth out the peaks of gas pricing and create a more stable energy pricing platform into the future.

Alongside this analysis in the Dominican Republic, LbD's modelling inputs showed material distributed economic opportunities arising from the narratives and transition pathways, to an extent where LbD was requested to advance further modelling work. LbD will as part of its exit strategy develop further the modelling approach so as to consider a "synthetic" sector in its analysis of sectoral input-output modelling, to consider how employment is created in new sectors or areas as some existing economic activities progress through their transitions. This analysis is similar from an independent pathway to the core modelling by the Mexico team, and LbD has advanced discussions between those actors to explore and check approaches.

## *Latin America*

Similarly, the supporting economic team for the broader Latin America regional part of the LbD project, including Jose Luis Samaniego and his colleagues from ECLAC, also advanced modelling to discuss fiscal risks associated with the transition, or with a slow transition. It is evident that costs to the evolution of climate will affect all countries no matter their pathway forward, and these can be mitigated or not. Presenting a model for these costs and risks, and so presenting an opportunity to manage these as part of the transition to a good life, supporting particularly the more vulnerable is another important concrete deliverable that LbD is presenting in the evolution of its methodology. The various approaches to this problem are presented in the website detailing the Latin American consultations in the LbD website.

## **Results and findings**

The project continued advancing and developing its own public and research philosophies, as well as a methodology that was compatible with them, exploring and examining their climate and public policy implications. The project also outlined the core of scrum activities to be advanced in the various countries,

The relevance of different levels of conversation (philosophy, political economy and political and economic modelling) and that of different places and regions (Latin America, Africa, the MENA region) were both acknowledged. This entailed interaction between the social sciences, the humanities and different geographical and political contexts. Advancing the project along these lines aimed to answer both technical and political questions, as well as explore the deeper philosophical ideas that are necessary to ensure that the envisaged life is not only survivable but good. It was thought that an interdisciplinary approach to this subject would help to avoid certain climate modelling and policy making pitfalls, and avoid ultimately unhelpful shortcuts and wasted resources. For example, it considered that removing agency from the individual for the sake of collective efficacy would not be part of the good life; nor would seeking to increase the wealth and power of a party to influence outcomes, or relying mostly on the dangers that may come from a warmer climate to motivate action. Instead, it hoped that its 'solutions' rather than appearing as impositions, may emerge instead as opportunities and means to enhance collective action from the bottom up in the places where the project advanced.

## **Cross Project findings**

- **Central Good life Aspects identified:** The project identified aspects which may be considered central of good life that simultaneously have low carbon and resilience aspects. In this vein, the project found that inter-relationality, creativity with other and nature, and opportunities for conviviality and contemplation, together with sense of agency and the struggle for a just transition to make these possible. These goals are deemed to be appealing on their own and associated with a good life, as well as with low carbon, climate resilience, and capacity building. They also cut across the visions the country teams identified.
- **Changes in policy settings:** A key finding of the project is that the consideration of a good life along these lines sheds new light and frames differently what needs to be considered in climate policies, and why. Rather than solely considering economic, technological and financial aspects advanced from a central policy making process. When taking into account good life considerations, other aspects become more salient, e.g. those that consider the character and impact of the

(just) transition, the associated capacity, education, and cultural aspects, the expected role of key economic sectors associated with these pursuits, the associated transformation and preservation of urban and local settings and the build environment to support them, the objectives of sectoral policies, and how and by whom is collective action to deploy them is advanced..

- **Public Philosophy and Collective Action:** As a result of the above, the policy emphasis and the expected outcomes and delivery changes when the pursuit of a good life is included in the mix, beyond those aspects that focus solely in reducing emissions or increasing resilience and capacity. The public philosophy and the collective action aspects that the project has been developing points in this same direction.
- **Quantitative and qualitative methodologies, together:** Another important finding is that there is a wide scope for thinking new solutions if qualitative and quantitative aspects are not considered in isolation from one another when examining the objectives, content and delivery of climate policies. The discovery of methodologies that allow to both take into account good life considerations, side by side with more conventional climate policy issues, uncovers large aspects of mitigation, adaptation, collective action and capacity building which otherwise will not be acknowledged, let alone addressed if only mitigation issues are addressed.
- **Narratives and Modelling:** The project has also identified different means to showcase these different aspects, which operate in interrelation with each other. Thus, the use of narratives, of scenarios (in words and numbers) to handle complexities, and the use of models, to handle the complicatedness aspects. Together, they provide a setting, sense of purpose and character, and a content in which quantitative indicators provide a sense of magnitude and explain both complexities and complications. In this, again the project methodological discoveries provide a mean to both enquiry and present queries and findings, a sense of magnitude, of the purpose of actions, and what is deemed valuable in different ways that in the purely quantitative.
- **Back and Fore casting:** Likewise, this different approach also entail changes in how the modelling of the trajectories considered advance. These consider both forecasting and back-casting approaches. Forecasting methods address feasibility by starting from the present to move towards accumulative progressive changes leading towards expected future with less emissions, and more resilience. In contrast, back casting addresses creativity by starting from the future and moving back to the present. This provides more degrees of freedom to imagine options for the future.
- **Prices and taxes with sectoral policies:** As policy aspects are considered in this context of feasibility and imagination, the project has identified that any transition needs to advance with some central price and tax policies applied from the outset, but deployed side by side with accompanying sector specific policies and (collective) actions considerations focused on the end point. This allows to address feasibility while not leaving aside good life and just transition aspects. If only central policies of tax and pricing are addressed, the magnitude of the economic impact makes it very likely that there will be massive opposition if centrally imposed. Delays may increase the size of the impacts. Sectoral and compensation policies may help address these transition issues.
- **Speed and Scale crucial:** The project has also found that there is a relatively short window of opportunity, with the speed and scale of action requiring to advance promptly and continuously to both transform and preserve what is needed in a transition to a 2.15 compatible future. In most cases, the possibilities of adverse reactions become even worse if the transition, rather than advance early on in an orderly fashion, becomes more disorderly one, with large sets of actions delayed until later.

- **Sectoral policy aspects:** Six sectors have emerged as central in various aspects as the project moves from its considerations of a good life towards sectoral policies. These sectors include energy, transport, agriculture, tourism and coastal zones, waste and circular economies. These are in turn affected by aspects emerging from economy, infrastructure and the built environment, and the cultural and political economy aspects.
- **Policy Road Maps:** The project has also been developing roadmaps. These road maps cover 5 period sequences, and have been developed for energy, transport, land use, interalia. The focus both on transformation as well as in preservation, as participants mentioned they want to preserve aspects such as common spaces and cultural traditions, as well as natural resources and key aspects of the environment.
- **Transformation and preservation:** This has been a consequence of the road map design, In all project scenarios something changes, and something else is maintained. Sectoral policies designed specific steps embodied within plans for action and sectoral costs. Roadmaps thus feed into collective action considerations – i.e. an examination of how various actors may come together to deliver the actions required in a specific place, and gain form it, on the one hand; but also what conditions need to be maintained and preserved for these actions to happen, and for aspects of the good life to be pursued to continue.
- **Synergies across sectors:** The country and project findings have also pointed out towards the need for actions in the various sectors to synergise and complement with each other if a good life is to be considered. This is so not only because they support each other to achieve climate goals, but also because their interaction may also be central for a good life to emerge in specific places, and thus make those climate objectives more likely.
- **Policy coherence:** The project more specific input output analysis has revealed the importance of planning for increased demand in one sector as expanded demand advances in another. The case of the relation between electric energy as discovered in the Dominican republic is a case in point.

The work for SA has been published on the LbD and UCT web-sites<sup>2</sup>, while the work for Mexico, DR and Latin America has been published at the LbD site. Lebanon has published its report as part of the LEds work. The SA report has been shared with the Executive Director and lead in modeling for the Presidential Climate Commission (PCC), of which a Scrum member is a member; with the Mexican Environment Minister, of which another Scrum member is a Vice Minister, and with the Ministry of the Environment of the Dominican Republic.

<sup>2</sup> Lane-Visser, Tanya, and Marianne Vanderschuren. 2023. "Learning by Doing Transport Modelling: Development of Transport Storylines for the Transition from Current Modus Operandi to a Good Life." Cape Town: Energiea, CIES and IKI <https://www.learningbydoingproject.org/wp-content/uploads/2024/02/Learning-by-Doing---Transport-Modellingwl.pdf>



# The Learning by Doing Project

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The narratives

## DOMINICAN REPUBLIC

### A Summary – A public affluence narrative

#### Dominican Republic

*Written from the 2050s looking back towards the present. This narrative has a focus on the public side (a “public affluence” narrative) and trails its impact on the material side – the world that we construct. It articulates insights from the first Scrum in the Dominican Republic, placing them as a story.*

The early 2020s were the best of times and the worst of times. The capacity of the Dominican Republic to maintain a stable

government and a thriving economy, its capacity to effectively transfer power from one party to another while keeping key long term and shared policies in place, and an ongoing sense of political civility across political divides were undoubted signs of strength. At the same time, stable institutions were frequently missed, better education and more educated people sorely needed, while waste, disorder, corruption and crime, were compounding problems dangerously. Relations with the neighbouring Haiti were increasingly tense. Climate impacts become increasingly severe and threatening. Effective leadership was frequently isolated, the law not always respected, and the potential for conflict, ripe. Cooperation had always been present in the country, but not always practiced extensively. Threats and opportunities frequently failed to transform challenges into cooperation. As problems multiplied, new generations were increasingly fed up. The need to adapt to new realities became more and more pressing.

The risk of collapse, the promise of a better shared future, and the concern for each other had prompted self - reflection and debate. New goals were sought. What now is taken as obvious was not so then. These problems had the silver lining of forcing people to look more and more into new ways to translate the gains that the country had made in achieving stability and growth into enhanced solidarity and shared responsibility - both to each other, but also to the sea, the land, and the shared world of the Dominicans. It was tricky, as usually many wanted to solely make the growth part salient as the expense of the solidarity end, but nevertheless, new times had beckoned. A sense of agency and responsibility became more and more salient.

In this context, emerging groups came to the fore by the mid 2020s. These groups combined civil associations, private businesses, and local groups. They build new coalitions. Their members shared an attachment to places, ways of life, culture and their meaning. Discussions on how best to lead public and civil life, how to address policing, regulatory, educational and environmental problems joined their paths. Some had resources, others vision, expertise or inspiration. They joined up pursuing an interest in finding how to make prosperous the various regions in the country, each in their own way. They drew inspiration from many quarters - from artists, musicians, the Church and faith groups to researchers, writers and thinkers. New generations of politicians and policy makers joined up. The population at large increasingly saw this as a rebirth. The country was renewing itself.

These coalition sought a better life in public places –what in the early 2020s had been called a “public affluence”. This meant one that placed society, nature and development together rather than against each other. Climate discussions, and how to combine mitigation and adaptation within this action in specific places has become an unexpected prompt for action. Those leading these conversations were the ones that had pushed for the net zero and



high resilience goals. Much debate followed before they became the recognizable common thread they are now. Larger groups coalesced around a new politics. It was based on first principles, pushed from the bottom up. The wellbeing of persons, places, and nature counted; institutions and law were seen as both increasingly aligned with these objectives; they all build upon the long standing collective and political traditions in the Dominican Republic. These new coalitions sought to translate this new spirit across generations, as if working in a covenant, one to change, but also to preserve. Their hope was for the Dominicans of our own era to be proud to be Dominicans in this land, as Dominicans are now; one where even as the country changed so much, it would still recognize itself as the Dominican Republic. It had not been easy, with many relations souring as attempts to find out how to do this were tested and found wanting, and not a small amount of internal upheavals. Likewise, the relation with Haiti had had its up and downs, but this was indeed a spirit that could be shared across the island, and a similar attempt had expanded there. A shared characteristic was to found new ground beyond the narrow corridor constrained by the authoritarianism of state, market or industry, and focused more on communities.

These coalitions had a renewed local and public focus. They initially mobilized to direct the development of infrastructure that focused more on supporting conviviality, urban spaces, and communal goods, working in synergy with each other. More and better education initiatives started. They sought to develop the new skills required, and rediscover past values- now more relevant than ever. There were also more and more efforts to improve water access, particularly in areas where it was intermittent; and create public support schemes for SME, including for better agricultural and distributed energy practices, and for education. Security, surveillance and policing were revamped and given special attention. The ecosystem focus had resulted in giving more attention to transboundary coordination schemes, which in turn had fortuitously provided a framework to work better through the outstanding problems with Haiti, and help address similar problems there, and enhance cooperation. As a result, more user-friendly health, transport and water infrastructure had steadily improved since the late 2020s, as life in urban and rural areas previously set aside had flourished, while relations with Haiti improved, even if the up and downs had continued.

Education across the country had focused more on cultivating persons and their capacities, and in supporting this emerging new life. It abandoned rigid distinctions across disciplines. A shared curriculum brought a renewed focus on links between engineering with the arts, agriculture, and the humanities; the skills and practices required for this transformation flourished. Regions and states found new ways to coordinate and support local action and education, with multiple society leaders exploring and developing more and more protocols for public and private cooperation, with incentives that rewarded communities working together.

In parallel, the political parties which the groups leading this transformation had started, following in different degrees a common national development strategy. This strategy combined the local, the regional and the national. National goals set the overall view; implementation was for the most part local. A first aspect involved revamping public spending, and aligning finance and banking sector with local climate objectives. Since the late 2020s, a new arrangement of national and regional banks and a financial strategy involving commercial banks, helped mobilize







resources towards this public affluence, in hand with a net zero and low climate impact strategy. A second aspect involved the financial strategy itself, which used carbon budgets in emissions, regularly reviewed by a select and diverse group. A third aspect included enhanced anti-corruption and competition and anti-trust efforts, rules and agencies, and wide public debate. National finance had radically changed the Energy matrix, and made much more renewables to come to the fore.

Careful national consultations allowed for a strategy to define and transform and decarbonize key sectors – electricity, heat and power, and other large users of energy. The tourism sector infrastructure led by example, and mobilized associated practices. This not only improved the reputation of the Dominican Republic as a destination, but compelled others locally to do more. Associated transport infrastructure followed, with improvements in vehicle stock, chargers and catenaries advanced in coordination with local governments. Integrated agricultural and food support schemes also helped tourism. Local standards and denominations made local produce to be supported locally, and become more valued. and nutrition end up being much better. Innovation catapults supported both new social cooperation schemes and associated practices and technologies. Planned obsolescence became something from the past; prosperity was increasingly understood sustainably.

The treatment of waste had always been a particular concern. While initially waste was seen as an unmitigated disaster, the progressive introduction of circular economy approaches, solid waste management and waste water management programs opened up new ways to effectively address this problem. Moreover, they also provided new opportunities for an emerging sector of local and national businesses, services and working modalities that catered for this sector. These activities were also frequently related to approaches focused on integrally improving local ecosystems and local natural areas. In this interconnection, the more circular economy approaches, and the increasing role of nature, were already common by the 2030s. Rural areas and other places beyond the capital steadily improved.

The strengthened responsiveness of local governments bolstered the confidence of these multiple bodies, the private sector and communities to adapt to a changing climate while enhancing life in their communities. Programs of the national development strategy helped provide renewed opportunities for places, communities and groups through various sectors. Efforts to enhance local ecosystems, combining social and nature aspects, mitigation and adaptation, multiplied and were supported with local financing from the national strategy. Regenerative agriculture and forestry support schemes likewise improved the environment and relations between local growers and markets, with more synergies being explored between towns and countryside. This evolved agriculture and forestry purposefully sought to make the most of local ecosystems and traditions to improve local living conditions. Likewise, an improved urbanity benefitted from the experience gained and collected, and from research that sought to make the most of urban life.

The foundational and care economy –that of teachers, nurses, care workers- ceased to be a side act, an support for local “heart and hand” activities increased. They were preferred in the development of support programs, and participated more and more in expanding the public affluence and held design associated infrastructure at local level. As a result of all these policies, low carbon and climate resilient cottage industries -from craft beers to local produce, workshops and businesses- were increasingly supported. A vibrant local scene, food, dance -and the now world-famous Dominican Bachata festivals- became the distinguishing marks of the Dominican Republic in the 2040s. Towns across the country become increasingly alive; and them, as well as in both coastal and country side town, renowned for its beauty. Myriad public spaces blossomed, with varied urban environments: restaurants, pubs, repair shops, training places, agricultural allotments, local markets. They developed side by side with innovative low carbon industry businesses and increasingly resilient infrastructure. This had created multiple attractive places throughout the country to live and prosper, in a low carbon and resilient manner.

The plural scene of this public affluence had brought a demand for more of those things that worked, and moved more to love of nature, the sea, the land; to appreciate local produce, food, and ingenuity, and to continue local arts, traditions and fellowships. Circular approaches were widespread, and a sensible use of resources and ecosystems thrived. A sense of abundance grew; and this is why the Dominican became renowned not only for its advanced climate and environmental policy, but for its vitality, beauty, and jolly good life in the 2050s.



## LEBANON

### 100% LEBANON

#### A Sustainable Development Vision for Lebanon for economic and environmental recovery

It is not clear yet where Lebanon's economy is at the moment, but real GDP is estimated to have declined by 6% in 2019, and it is forecasted to decline further by 19.2% in 2020. This contraction is projected to continue by a further 13.2% in 2021. Tourists' arrivals fell by 71.5% in the first five months of the year in comparison to 2019, while private sector activity contracted by more than 50%. Construction permits



declined by 67.9%, and cement deliveries went down by 55.7% in the first quarter of 2020.

Nevertheless, Lebanon economic crisis provides a unique opportunity. The country is more or less in dire need to completely revitalize its economy, and the biggest question put forward is how. The decisions that will be taken today will lock Lebanon's economy for the coming decades. An economic development strategy will drive investments in certain sectors that will set the course of these sectors for the next generation. Therefore, the economic strategy to be implemented should look into the economy of the future, and not just what has worked in the past. With a small consumer market, Lebanon's economy follows global market trends. We do not set the trends, but we do follow them. Therefore, it is critical to look at international trends to see what the fastest growing sectors are, and how the different sectors are being shaped. This future outlook is not only an economic analysis but also a political one. Political decisions are constantly shaping the global economy, especially in major countries, as well as international agreements. Such international trends are usually missed in economic planning by either governments or private sector with sometimes detrimental consequences, and history is full with such examples with few of them mentioned below.

The rise of the combustion engine, digital camera, and smart phones have rapidly decimated the once-booming industry of horse carriages, film-photography, and telephone land-lines, without these industries foreseeing the upcoming change. These are obvious examples due to technological advancement, but new trends are being shaped constantly in every sector without it having to be a similar technological or political turning-point as the examples provided. Therefore, in the development of Lebanon's economic vision, experts in each sector have to sharply look at international trends and try to figure out how the world will be in 2050 to decide in which direction Lebanon needs to go.

This is particularly the case for the sustainability agenda. Millions of organizations, businesses decision makers, celebrities, religious institutions, and many others wake up every day with the aim to address global sustainability challenges, be it climate change, pollution, loss of biodiversity, among others. For the United Nations Sustainable Development Goals (SDGs), a global network has been set, called the Global

Compact Network that includes various stakeholders from big business, government, civil society, celebrity community, etc. with the aim of implementing the SDGs agenda. This is just one network within one platform. In the private sector, there is the “We Mean Business” coalition, which is a group of 1,372 companies worth 24.8 trillion US dollars working to address climate change and sustainability in general. Almost every major multinational corporation, such as Google, Apple, IKEA, Facebook, General Motors, and many others, are now spending billions of US dollars in order to shift the global economy into a low-carbon one. International sustainability agreements and sustainable development policies (national or private) did affect markets in the past and are expected to increasingly do so into the future.

For example, the European regulation on the Registration, Evaluation, and Authorization of Chemicals, known as REACH, which took effect in 2007, requires businesses to provide safety data for its chemical substances manufactured, used and commercialized, shifting the burden of proof from legislators to the chemical industry. This means any chemical substance produced or imported to Europe had to comply with REACH. As the European Chemical Agency, ECHA, put it: “No data, no market”. Major economies, like China and the United States, were able to adjust. China produced a counter legislation that became known as the China REACH. In the United States, major chemical companies, like Dow Chemicals, hired dedicated teams to adjust to REACH. Developing countries that required ample time to adjust to the new regulation were the hardest hit, with some Arab countries calling it a conspiracy against their chemical industry. Europe is a major import and export region for Lebanon, and following up on European legislation, like REACH, is essential.

Keeping track of international trends is challenging and requires specific expertise. One way for Lebanon to ease the process is to work with international civil society. International civil society movements are not only closely tracking global trends in their areas of expertise but are also pushing their own concepts that are becoming mainstream with time. For example, the concept of “Zero Waste”, which civil society has been calling for since the 1980s, was very alien to decision makers and the UN system in the beginning. Now, the concept of the ‘circular economy’, which is the terminology accepted by states and the UN system for the Zero Waste concept, is now at the forefront of waste management discussions at the global level and in some regions, like the EU.

In the below sections, the research team dwells into different sectors of the economy in Lebanon with a specific focus on sustainability, not only because it is within the expertise of the research team, but also there is an overwhelming global trend towards sustainability in almost every economic sector that Lebanon can benefit from. The research team believes that if Lebanon does not invest in the “Green Recovery” con-





cept, at some point Lebanon will have to redirect its development towards sustainability, but at a higher cost. The research team would argue in the below sections that a green recovery economic vision is best suited for the particularities of Lebanon.

The Green Recovery is a new concept that came in 2020 as a response of some governments and international groups in relation to the COVID-19 economic set back. In July of this year, the European Union agreed on its green recovery plan, also named the EU's green new deal. This green recovery plan is the largest single sustainability pledge ever done, sending a clear signal where Europe is going. Just like REACH legislation, this new deal will also impact countries that are not up to the European sustainability standards. It is not just the EU, but many governments are doing same, such as New Zealand, Chile, South Korea, among others. The OECD has been keeping track of governments engaging in green recovery, and providing support when possible. The IMF also published a special series on fiscal policies in response to COVID-19 based on the green recovery. Lebanon, which is currently looking for support from the EU, OECD, World Bank and IMF, can gain credit among these entities if the country adopts a green recovery strategy as part of its reforms. A report published by Cambridge Economics commissioned by the We Mean Business coalition, titled "Assessment of Green Recovery Plans after COVID-19", has shown that green recovery plans have better returns on income, jobs, and GDP than business-as-usual stimulus packages. In all geographies modelled in this report, including the EU, the US, India, Japan, and global economy, green recovery plans were more effective than the usual approaches.

Therefore, the selected Lebanon's vision elements below have been developed with a specific focus on the sustainability principle, taking into consideration the sustainability goals of the SDGs, the Paris Climate Agreement, the Convention of Biological Diversity and few others. The research team is well aware that Lebanon's vision elements should not be viewed only from a sustainability lens, and other issues have been taken into consideration, such as social issues. As mentioned in the second chapter of this document, the elements of this document aim to initiate a national debate, and we hope that these elements would be developed further, especially using other perspectives and considerations.

It is important to know that integrating sustainability and sustainable development into Lebanon's economic vision is something not new. Various efforts are being conducted already, and the following examples are just a few of what exists. At the time this document was drafted, the United Nations Development Program (UNDP) has initiated a project to 'climate-proof' the existing economic vision for Lebanon. Also, the Ministry of Environment is developing a long-term climate strategy, and has formulated an updated higher Nationally Determined Contribution (NDC), which is the country's commitment under the Paris Climate Agreement. As mentioned before, the Global Compact Network Lebanon is mainstreaming the SDGs goals, and Green Mind association in collaboration with the UNDP has developed a Lebanese business platform to work on climate change, called Lebanon Climate Act. At the same time, the Ministry of Industry in Lebanon, has produced in 2017 a 2025 vision for the sector that is based on sustainable development. Even the deputy Prime Minister in the previous Hariri government has been appointed as the SDGs Ambassador. The key issue remains, will such a framework be consolidated into a unified sustainable development vision that receives full political backing at various level, as well as buy-in from the private sector and civil society.

## Energy sector

A reliable energy sector is a priority for any successful economy, and despite enormous investments this sector is still unable to satisfy Lebanon's needs. The electricity system still lacks generation capacity, current power plants are old and need replacement as fast as possible, and energy demand is expected to

increase by 3% annually. The sector is the biggest contributor to import costs, with refined petroleum imports reaching 3.47 billion USD in 2018, or 16.5% of all imports, most of it being paid for by the government or is subsidized, crippling the government's budget. To meet this growing demand and at the same time reduce this huge import bill, Lebanon has developed an energy strategy that aims at achieving an energy mix of 30% renewable energy (conditional on external finance) and most of the rest is supplied by natural gas energy (66%) by 2030. The aim is to use to potentially existing national gas to replace the imports. The Ministry of Energy has also produced an energy efficiency strategy for the years 2016 – 2020.

## Transport

Like the energy sector, the transportation sector is a key enabler for economic development. Ineffective transportation and logistics sector will lead to an ineffective economy. Although transport encompasses a wide scope, nationally and internationally, the focus of the research team in this section on national land transport, with the hope that the section would be expanded further through the debates to follow. The land transport in Lebanon suffers from several challenges, such as low-quality roads (around 15% of roads are considered good), high traffic congestion (including on main highways), lack of urban planning, weak public transport, among others. Lebanon also lacks crucial land transport infrastructure, especially rail and non-motorized modes of transport facilities. In terms of roads, Lebanon ranked 121 out of 138 in terms of quality of road infrastructure. According to the World Bank, the land transport sector inefficiencies are costing the Lebanese economy more than two billion US dollars every year or 5 to 10% of GDP.

## Tourism

Tourism is one of Lebanon's key economic sectors that has been growing steadily before the recent events and still employs more people than any other sector, but has never recovered to its peak in 2010, due to the Syrian crisis. Lebanon's tourism sector is reaching an important milestone, where it has to completely rethink the tourism model in the country. As mentioned earlier, the tourism sector in Lebanon has been focused on attracting Arab tourists, especially in the Gulf. It has been mainly shaped to cater for wealthy Gulf tourists with fancy luxury hotels, posh restaurants, and extravagant events directed towards the Gulf audience. Nevertheless, the sector has been suffering due to the regional conflicts within the Gulf and between the Gulf countries and certain factions in Lebanon. Saudi Arabia had a travel ban to Lebanon, which was lifted in early 2019. Despite the ban lift, Lebanon failed to attract back high number of Gulf tourists during the summer of 2019.

## Agriculture and food security

The agriculture sector is usually viewed as an economic sector, valued in terms its contribution to GDP, rural development, and job creation. Nevertheless, agriculture is also an issue of national food security, an aspect usually ignored, except in countries with negligible food production, like the Gulf states. This year, the issue of food security has become prominent due to the disruption of global trade by COVID-19. Due to reduced global trade, food security became a problem in several countries. Lebanon is even hit harder due to the economic crisis, putting limits on imports, and creating food availability concerns. Such disruptions are predicted to increase in number and intensity due to climate change. In the past, many key grain exporting countries, such as Russia, Ukraine, and South East Asia banned export of their grains in certain





years prioritizing national demand, due to bad weather conditions reducing the harvest during that year. Climate change is predicted to increase the frequency and intensity of such disruptions, which will lead to a global shortage and increased prices in grains. This is only one aspect out of many that climate change can impact food security.

### Material management

In a country with limited natural material, most of Lebanon's products are imported, or raw material is imported for manufacturing products domestically. We consume the products, and the waste generated is mainly landfilled. Then we import more raw material to do the same in an unsustainable cycle, increasing our import bill, and polluting our water and land. This material flow cycle, which is happening with many countries around the world, is not sustainable, and the world is slowly running out of resources. For decades, the environmental community has been calling to rethink this material flow cycle as a whole in a concept called Zero Waste, rather than looking at each section of the process separately. The traditional process to deal with waste and pollution is to separate the cycle into extraction, manufacturing, production, marketing, consumption, and waste disposal. Nevertheless, the waste management sector is heavily impacted by how products are manufactured, and thus the different steps of the process cannot be treated separately.

### Overview of other considerations

The concept of sustainability and diversity could be applied in every aspect of Lebanese economy, and not only in the sectors identified above, such as financial sector, real estate, construction, water, telecommunication, information technology, etc. Below is initial input on some of these sectors from a sustainability and diversity perspective. Nevertheless, these sectors require further input from relevant experts.

### Financial sector

The financial sector will have a major role that will affect all other sectors. The financial strategy should be aligned with the overall vision and ensure that financial flows do not go counter to the strategy. A differential taxation system is a powerful tool to adjust consumption patterns and induce behavioral change to achieve the visions goals. Many examples of differential taxation systems have been suggested in the sections above. Lower taxation can act as an incentive to encourage positive practices, while higher taxation acts as a disincentive to reduce practices not in line with the vision.

### Water

Although water is not an economic sector, it is an important socioeconomic enabler, especially in agriculture, industry, and tourism. Although Lebanon has more water resources than most other countries in the Arab region, it is still considered a country suffering from water scarcity, with less than 840 m<sup>3</sup>/capita/year. Therefore, in 2010 the Ministry of Energy and Water produced a national water sector strategy to satisfy water demand, which is expected to increase from around 1,400 mcm/year in 2010 to 1,800 mcm/year in 2035. The strategy looked at diverse options to achieve this demand, including the recharge of groundwater, reduction of losses, more efficient consumption, and increased storage of surface water, mainly through the construction of dams. Nevertheless, the focus of implementation and investment in the sector has



been on the construction of dams, leading to having this strategy dubbed as the dams' strategy. As a result, the strategy has been under severe attack recently, leading to the withdrawal of World Bank funding from one of the dams being constructed.

### Marine resources

Lebanon's long coastline provides it with access to substantial marine resources. Most, if not all, of the fishing industry in Lebanon is artisanal. In 2014, Lebanon had 2,662 registered fishing boats. There is an enormous lack of data in relation to amount of fish caught and the exact situation of fisheries, including their important breeding and feeding grounds, which is hampering the development of vision and strategy for the management of the sector. Still, it is well known that the fisheries in Lebanon suffer from severe degradation, due to unsustainable fishing practices, habitat destruction, and pollution.

### Construction

The construction sector in Lebanon is more of an investment sector than a sector to satisfy construction demand. Lebanon has thousands of empty apartments, with one estimate in 2014 putting the number of empty apartments in Lebanon at 200,000, out of which 50,000 in Beirut. The reason for this is that construction of apartments is done for foreign investments than to cater for domestic housing needs. Most of the apartments built are either luxury apartments or big apartments of commercial quality to be sold to wealthy Lebanese and individuals from the Gulf. Also, many Lebanese immigrants and expats feel more comfortable to safeguard their savings in real estate rather than in the Lebanese banking system due to lack of trust in the stability of the financial sector. The crisis in Syria contributed to this practice as well, as many wealthy Syrians wanted to take their savings out of their country and decided to safeguard them through the purchase of real estate in Lebanon.

### Cannabis

Lebanon was the first Arab country to legalize cannabis for medicinal and industrial use. The McKinsey economic vision puts the potential revenue of the cannabis sector to be at one billion US dollars per year, which is equivalent to the far reaching best case scenario that the oil and gas sector can generate in the country. Plus, the cannabis sector has additional benefits not accounted for, giving it to potential to generate revenues beyond the one billion US dollars. First, the cannabis sector will generate substantially more job opportunities than the oil and gas sector, especially in marginalized rural and farming communities, which are in dire need of development. Second, with the predicted climate change impact on Lebanon, cannabis will be more resilient than several of the tropical crops suggested in the agricultural strategy for Lebanon. Also, the industrial potential of cannabis goes far beyond the medicinal application and includes the production of industrial hemp.

### International relations

By adopting a green recovery vision, Lebanon has an opportunity to have international recognition for this role. In the past decades, Lebanon did not play a leading role in the international arena and has mainly been neutral in the key international intergovernmental conventions. By adopting the brand of sustainability and diversity, Lebanon can strengthen its relations with many important countries, especially the



European Union, which is a key trading partner. Other countries that would welcome such a vision include United States, Canada, New Zealand, UK, and a growing number of developing countries that are concerned about the climate change impact on their national sovereignty.

## Conclusion and way forward

A green recovery vision for Lebanon based on strengthening all the diverse economic sectors, especially the productive ones, has substantial socioeconomic benefits for the country. Providing such visions is the primary responsibility of political leaders, unifying various sections of society towards one long-term goal. Without such a unifying vision different sections of society and sectors can go in opposing directions. Delegating the production of visions to consulting firms will not work, as visions require pushing boundaries that only political leaders can do. That is why the McKinsey economic vision for Lebanon looks more like a strategy than a vision, as it lacks the overall destination where the country wants to be on the long-term, beyond economic profit in certain sectors. It also does not secure the buy-in of the various sections of society, which will create obstacles in its implementation.

The success of any vision would require the buy-in and engagement of all sections of society. Government commitment alone, especially in a country like Lebanon, where various sections of society have substantial influence on decision making, is not enough to secure the implementation of any vision and strategy. The vision has to be inspiring and meet the aspiration of the Lebanese public. Therefore, during its development, effective and meaningful multi-stakeholder consultations need to take place on various level. The consultation should be sectoral, sub-regional (by Cazas), with civil society groups, community leaders, etc. Adequate time must be given for these consultations no matter how long, as it will reduce the potential for obstacles in the future, speeding up the implementation process.

Previous experiences have shown that without stakeholder buy-in for a common vision, a consultancy firm approach has little chance to succeed. In the runup to the Copenhagen climate summit in 2009, where a new global climate agreement was supposed to emerge, two top climate foundations, ClimateWorks and European Climate Foundation, along with a number of other foundations in the US, China, and India, as well as the European Union gave substantial resources to McKinsey consultancy firm to produce a report that would guide the UN Framework Convention on Climate Change and its country members towards achieving a new climate deal. Intense consultations were conducted at top level, and the report produced provided development pathways for key countries with mitigation and adaptation plans, including costs. The amount of invested in bringing the various sections of civil society on board of such a plan was a fraction of what was invested in this report. As a result, the Copenhagen climate summit was a failure, due to fragmented civil society.

For the Paris climate summit, the approach was different. Resources were prioritized for engaging various section on civil society. Coalitions for businesses, investors, countries, NGOs, among others were created. A global communication campaign was conducted to bring community leaders on board. The Vatican produced an encyclical on the protection of the planet. Even fossil fuel companies were engaged. As a result, the Paris climate agreement was reached that provided an overall inspiring vision on where the world should be and mechanisms that countries and businesses can use to develop pathways afterwards towards that vision. The vision produced, which is limiting global temperature increase to below 1.5 degrees Celsius and achieving net zero emissions in the second half of the century, is an extremely difficult goal to achieve.



Still, it provided the inspiration required to drive change. In the past five years after the Paris agreement has been reached, various initiatives, programs, long-term plans and projects have organically emerged with the aim of achieving the Paris vision, and new initiatives are popping on regular basis. Whether the world will be able to achieve the Paris vision is not clear, but it is driving action like never before.

A similar inspiring vision in Lebanon can also organically and strategically drive development. It would provide justification for specific projects that otherwise would face severe opposition. A vision and an aligned strategy would show the necessity for selected projects within an overall framework that usually local communities and civil society are not aware of. That is why a comprehensive vision and strategies should be the initial approach rather than focusing on specific projects. Currently, in Lebanon, even when strategies exist, the process of communicating these strategies have been focused on specific technological solutions. For example, the national water sector strategy became the dams' strategy. The integrated waste management strategy became the waste-to-energy or incineration strategy.

As mentioned earlier, this start of green recovery vision needs be complemented with a social vision that not only looks at pure social issues, but also the social impacts of other visions and strategies. In this document, several social issues have been mentioned, such as creation of jobs, income distribution, marginalized areas, etc. Nevertheless, there should be a specific vision that looks at each of these aspects separately and develop a social equity vision and strategy for all Lebanese. Having social equity will strengthen socio-economic stability and security. If wealth is not concentrated within a few percentages of individuals, any adverse impact to any of these individuals will cause political and economic instability, as they become too big to fail. On the other hand, distribution of wealth can pad against shocks to certain businesses.

An inspiring vision must be accompanied with a strong international and national communication campaign to further gain buy-in to this vision. The campaign should target all sections of society before and during the vision's implementation. It should also target the international community and diaspora to provide international recognition. This is not only necessary for the successful implementation of the vision and the attraction of international tourists, but also to provide the fragmented Lebanese society with a national unifying identity that they could be proud of, which is unfortunately missing at the moment.





## MEXICO

### An Ambitious Vision for 2050 Mexico Learning by Doing - Mexico Team

By 2050, we envision a Mexican society in which social, environmental and economic development has significantly benefited most societal groups. Progress has taken place hand-in-hand with significant CO<sub>2</sub> mitigation and adaptation policies that have allowed the country to fulfill its emissions goals for a 1.5-2 degrees maximum global warming, and to go beyond these by adopting a 2050 net-zero



greenhouse gases emissions target. Mexico's green revolution will have focused on the most emission-intensive sectors: energy, transportation, and agriculture.

Mexico in 2050 is a better country than it was three decades ago. Citizens enjoy a better life and are happier. They are physically and mentally healthier. The context has significantly changed. The air and water are cleaner; transportation is not a polluting hassle; and there are more time, information, and opportunities for high-quality living.

Mexico is also a more democratic country in which existing institutions promote governments that are more responsive to citizens, and enterprises have sufficient incentives to behave well. Economic, social, and political conflict is not absent, of course; yet, there are effective ways to solve conflict with low transaction costs.

In 2050 Mexico, communities and local governments are stronger. They have sufficient resources and incentives to minimize risks stemming from climate change---they no longer need to demand the attention of national government and of multiple intermediaries.

In this context, ambitious thinking and policies are feasible.

### A Virtuous Circle

In this society that we envision, all relevant actors have incentives to control their CO<sub>2</sub> emissions at the globally-optimal level. A virtuous circle has developed between the incentives and the behaviors of governments, citizens, and industries. This has been possible not only because a change in conscience, but because, given the existing constraints, the "correct" policies were implemented.

Citizens know that they are entitled to a good life---a better one than 30 years ago. They know that they do not have to live in polluted environments and that local and sustainable consumption have significant benefits. A sea change in the national culture has taken place, encouraged by significant support to local organizations that significantly reduce citizens' collective action problems for demanding better living conditions.

Policy-makers at all levels of government are significantly constrained by citizens' demands for lower greenhouse gas emissions and by subnational authorities that have incentives to have "clean" administrations. Politicians have raised their climactic ambitions and have a shared vision of a better Mexico, which is rewarded by voters.

Thanks to the policies and incentives put in place 30 years ago, carbon pricing has progressively increased from US\$3 up to US\$75 in 2050. Revenues from carbon taxes and other fiscal instruments have allowed governments to invest in *just transitions* that consider the prevention of climate risks, the reduction of regional inequalities, and compensations of various sorts (including retraining, unemployment benefits, and investment in community development) to individuals and communities affected by the demise high-emission industrial activities, as well as by the consequences of climate change.

Power generation is now much cleaner, transportation has significantly changed by embracing low emissions technologies, food production has implemented low-emissions best practices, and food consumption has moved towards zero emissions products.

Industries have gradually adapted to the new regulations and realities, not because of philanthropy, but because consumer preferences are now pro-environment, technological advancements have made change financially feasible, and governments have provided adequate incentives, compensations, vigilance, and sanctioning. Over time, large parts of the population and businesses have acquired a stake in the new low-emissions status quo, rendering it a stable state of affairs from the social, economic, political, and geopolitical points of view.

## **Our Vision by Core Areas**

This future that we envision is built on ambitious changes on institutions, technology, and culture in three core areas that account for the majority of emissions in the previous decades: energy, transportation, and agriculture and forestry.

### *Energy*

Thirty years ago, electricity generation accounted for almost one quarter of CO<sub>2</sub> emissions (INEEC). Today, in 2050, the electricity sector significantly decarbonized. Mexico's net zero-power generation policy







is constructed around carbon pricing and renewables.

Carbon pricing has been successful at inducing consumers and producers to change their behaviors, leading to less carbon dioxide emissions. In addition, revenues from the carbon tax have been progressively allocated to emissions mitigation policies and compensatory policies to those negatively affected by the transition to a low emissions environment.

Politically powerful stakeholders that were initially opposed to a widespread carbon tax across energy sources—including oil, cement, steel, and coal production—were successfully compensated and incentivized to adopt cutting-edge technologies, and faced an ample coalition of NGOs, local governments, international organizations, and international trading partners that were able to counter its initial resistance to change.

PEMEX (Mexico's state-owned oil company) and CFE (Mexico's state-owned electricity company) successfully transitioned to clean energies, mainly solar and wind, in a fair market environment. These state-owned enterprises no longer constitute sectoral monopolies. Methane emissions were successfully minimized in oil and gas production thanks to technological change. Energy-intensive sectors such as steel, chemicals, metals, cement, glass, and paper have successfully adapted to renewable sources.

Government intervention was successful to compensate not only enterprises, but also workers and communities, adding a progressive component to its policy of carbon pricing.

Mexico's change in power generation policies has benefited many communities. Power generation is no longer an obstacle to a good life. Citizens understand that air and water pollution are not a "necessary" ill associated with power generation. Former "oil towns" have found new economic activities with help from governments and international NGOs that provided resources and incentives for change and innovation.

### *Transportation*

Transportation in 2050 Mexico is no longer a massive source of emissions. Thirty years ago it accounted for about 18% of greenhouse gas emissions, formerly projected to double by 2050). This has had a significant positive impact on Mexicans' health, leisure time, and social capital.

Thanks to technological change and government fiscal incentives, as compared to fuel vehicles, electric vehicles (EV) are no more expensive to purchase and there is a wide selection of models. EV are less expensive to operate than fuel vehicles, and public and home charging are widespread. Hydrocarbon fuel subsidies have been fully eliminated.

Modal shift is a reality in 2050 Mexico. The country has been successful in managing transport demand, disincentivizing the use of motorized transport. Walking and cycling are feasible options for many. Many lives have been saved by reducing traffic fatalities. Traffic reduction has meant more free time and less stress by decreasing commuting time. Streets are less noisy now and have become proper public spaces for citizens' interactions.

Congestion charge zones are ubiquitous across Mexico's metropolitan areas. In addition to reducing traffic and improving air quality, revenue from these programs has been invested in community development and compensation to those initially affected negatively by the congestion charge policies.

Cities are more compact. Citizens do not have to commute long distances to work, school, or shopping. This has improved Mexicans' physical and mental health and it has reduced health care costs.

Transportation culture has changed in Mexico. One big transformation has been to remove the stigma among middle and upper economic classes about public transportation as an option only for the poor. Better public transportation has, therefore, contributed to a less stratified society by improving transport equity.



## *Agriculture and Forestry*

Thirty years ago, the bovine industry produced about 13% of all of Mexico's greenhouse gas emissions. Today, the agriculture and forestry sectors have been quite successful at mitigating emissions. Significant changes in supply and demand for products in these sectors have been driven by a combination of change in habits and preferences, technological change, and effective regulation.

The production of meat played a key role. Increasingly, citizens have changed their consumption habits, partly because of limited natural beef supply and its corresponding price increase, and partly because "eating the right thing" is now taken more seriously by many people: a change in culture has taken place. Some beef producers have gradually switched to more profitable alternatives, such as fish or poultry farming. Others have taken advantage of new technologies, such as silvopasture systems and biodigesters to mitigate emissions. The synthetic meat industry is beginning to flourish, mostly among the younger generations who are growing up with it from the start.

Another key change to mitigate emissions has been a significant reduction in the use of synthetic fertilizers. This has also contributed to better health outcomes.

The protection and restoration of the forestry is a top priority for the Mexican government. The administration of forestry policies has been decentralized to local governments, which have a more direct interest in enforcing regulation, collecting fines, and have more information about what is happening on the ground. The local level of authority also faces more-direct citizen pressure to do a good job.

Mexicans have modified their mindset about environmental protection and conservation thanks to increased exposure to information on these issues and to changing economic incentives. The consumption of locally-produced food is no longer an expensive fashion, but an affordable and widespread way of living. This has also strengthened social capital in communities and created multiple stakeholders that provide incentives for local governments to support the new status quo.



## SOUTH AFRICA

### A story of a good life and public affluence in South Africa under 1.5 °C in 2050 Combined narratives developed by the LbD South Africa team

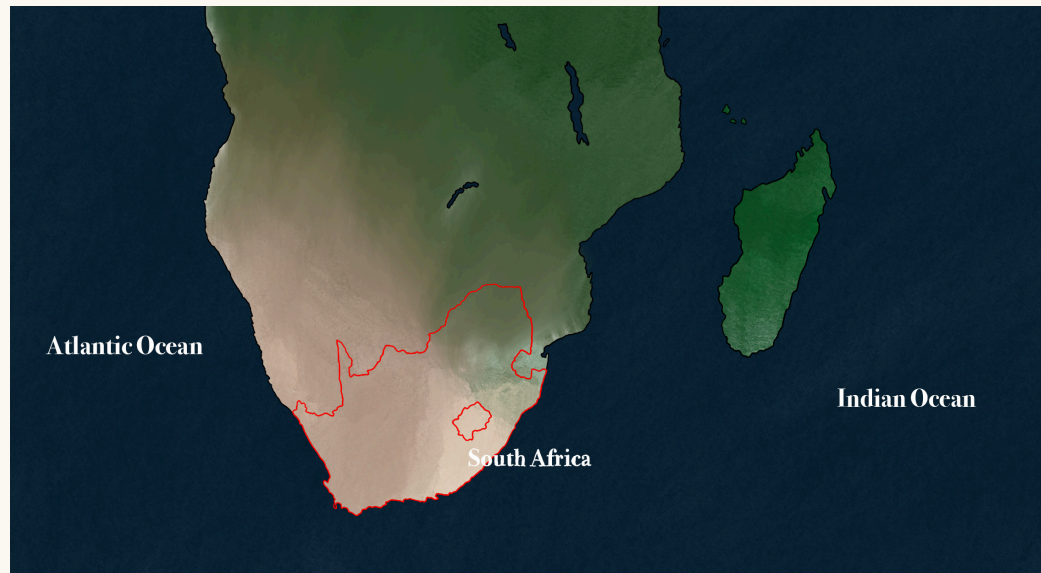
Back in 2022, we had lived 28 years after Apartheid, a year longer than Mandela had been in prison. Yet unemployment, poverty and inequality remained at offensive levels. It seemed that a better world could not be possible. But here we are, sitting on my porch watching the neighbourhood kids play in the street. How can we explain this change, you ask? What got us from there

to here, a good life in 2050, only 30 years later? This is a long story. Come, have a seat. Would you like a glass of guava juice? I planted the trees myself many years ago and now this beautiful little grove feeds us and cools the house too.

So where to start? Well let's start with society itself. Do you remember the looting that shook our country to its core, in July 2021? It became clear that we could not carry on as before. Our youth got fed up. Many young people had become increasingly disillusioned with the technocratic rationalism of their parents' generation. Some felt acutely the natural and cultural losses that peaked in the mid 2020s. They didn't want to live like this. They didn't want to have a country that they could not flourish in.

We were still figuring out whether the response to this wave of conflict was to *finally* introduce a basic income grant, or social security – when the terrible floods of 2022 hit KwaZulu Natal. More than 400 people were killed outright, houses collapsing around people. Poor communities were hardest hit, though even middle-class houses were flooded. Roads were impassable from deep rural areas to eThekweni. This brought home that climate impacts were no mere projection, a risk in the far future. And it wasn't only in South Africa! We started seeing Loss and Damage everywhere and it became apparent that without some major changes, things were only going to get worse.

Looking back I think that the psychological impact of dealing with these social and ecological disasters – globally and in SA - helped our politics open up in some ways. Do you remember how stuck we were in cycle after cycle of fights? While everyone wanted something better, we couldn't find a way through. Some argued fiercely for a developmental state while others seemed to hold on to free markets, almost as an article of faith, as the force that would free us. Eventually, these crises allowed narratives to emerge that included both the state and markets. And little by little, a better balance was struck between the role of the central state and local governments. The response in KZN had to be local, specific to that place – with support from the rest of the country. While hard, the process of rebuilding gave a boost to local, transparent and open government. And people realised that the climate crisis would not recede quickly.





And oh, I should mention, the idea of ombudspople for the future emerged then and started to get adopted at all scales of government – even in some neighbourhoods and local communities.

That period of time also got us rethinking how we wanted to live. People started to think of ways to shift. Our previous way of doing things had become so ingrained, in our commercial and living culture, habits of consumption and expectation, which now seem almost ante-diluvian.

This was part of the opening that happened in the early 2020's. Ah, that was an exciting time! Can you hear the frogs over in the stream? They have been coming back more and more in the last few years. I hadn't realized I'd missed them until they returned.

But what about coal, you ask? Fossil fuels? Surely, in South Africa, this wasn't an easy change? Well, yes, this is a story unto itself. Do you still have guava juice?

Now obviously, public debate never stopped. This debate did however, get more robust as more and more voices were included. And as the debate widened, all kinds of interesting coalitions started to become possible.

I distinctly remember 2022 as a big year. Looking back, I think this is when the just transition debate, and the coalitions that underpinned it, gained speed and breadth. The Presidential Climate Commission (PCC) developed a Just Transition framework. It focused a lot on the transition away from coal, but adaptation and other issues also come into the picture. And while the PCC consulted widely on its document, other groupings developed their own thinking. The National Business Initiative undertook a just transition pathways project, based on detailed techno-economic analysis, aiming to unify business ahead of COP26. This made a significant difference in the pitch for finance for our just transition. Yet the vestiges of the minerals-energy complex and decades of thinking defensively about climate change were hard to overcome. I mean, how could they not? Dealing realistically and creatively with resistance had to be part of the effort for change.

This is where broader coalitions started to really matter. Social movements became involved and demanded system change. The Climate Justice Charter Movement (CJCM) called for a deep just transition, running a six-year process with grassroots input from water stressed communities, the media, labour, faith-based communities, youth, climate scientists, academics, women's organisations,





environmental and social justice organisations. Leading activists started writing think pieces. CJCM demanded that parliament adopt the Charter. Even though this wasn't successful right away, it resonated with many of the concerns that so many groups had as the economy wasn't working for many people anyway. Don't forget, unemployment before COVID was already almost 30%, and then increased to 35% as the pandemic hit the economy – and that was by a narrow 'definition' that ignored those no longer even looking for jobs, which included many more. Over time the Charter started to become used as a basis for initiating deep just transitions in communities and across workplaces. COSATU published a blueprint for workers in a just transition, talking to other formations in organised labour. Its five top demands were employment-creating and sustainable industrial policy; a Universal Basic Income Grant for all aged 18-59; reskilling and upskilling; land redistribution; and ending austerity for a climate just macroeconomic framework. These efforts were key because they made it clear that the interests of fossil fuel industry and coal workers were not the same. This was an essential break because it allowed other coalitions start to be built.

How did we build those coalitions, you ask? Well, to some extent it's the oldest story in the book. We had to find common ground.

The reality was that despite serious engagement of '22, there wasn't a coherent political strategy to achieve social justice. After a few more years of *Angst* and social debate a broad front politics started to be crafted. It dawned on South Africans of different walks of life that climate action and a concerted move to sustainable development could make our lives better – immediately – but we would have to work together in new ways. This wasn't about the future only, but about making change in people's lives right now.

Some of this was really driven by the younger generation. They, well I guess if I'm honest, this was me too back then! This is all before I even planted those guava trees! A broad swathe of individuals and groups started to understand that politics, business, and activism were not separated domains but that they could be brought together. We started paying close attention to local areas and asking how we could solve problems in specific places, with specific communities. We understood that solving issues of poverty, inequality and unemployment were linked to ecological devastation – and that we needed to connect thinking and people.

A big part of this was starting to change mind-sets. Overall, we saw ways to shift from an economy





driven by consumerism to one focused on human interaction. Once it had sunk in that you can live well, not by having more stuff – much else followed. Of course, we know that for those living in abject poverty, having basic material needs met is essentially. Poverty is no fun. But it was startling to many to realise that even the rich were often unhappy. Instead of working less, most South Africans worked more as they climbed the endless ladder. When it sunk in that they were working all the time to live badly, that was a key moment both for the rich and for the middle classes, who had aspired to live like the rich. The new aspiration became what our Latin American friends call *buen vivir* – living well, a good life. Being able to see that a good life was really possible meant that we could more easily join forces across diverse communities and build more powerful coalitions. The 2020's version of broad front politics mobilised groups behind a just transition to a good life.

The importance of organised labour and community organizations in this mobilisation can't be overstated, though it took most of the early 2020s for traditional unions to overcome the splintering, internal contestations and the influence of particular interest groups (most visibly the coal lobby) and to coalesce around more inclusive forms of union organising. They really took proactive leadership of the process and were particularly useful at persuading government at local and national level to come on board with these new visions. Eventually even the mining companies learned that compliance with regulation was just the start, that they needed to become sustainable, to secure a long-term social licence to operate. As coal mines closed, rehabilitation became important – and together with gold, found there could be very good mine closure plans. Other stakeholders discovered that platinum group metals were a resource needed in future.

Meanwhile, business made a significant shift – accepting that the transition had to be led by those whose future lives depended on it. Business continued to do what they are good at, searching for opportunities, replicating successes and learning from failure, but toning down claims to lead on justice (!) and engaging with others.



Some time in the early '30s, we had really nationalised the just transition process. And let me be clear, by nationalised I'm not talking about a top-down process. Things were happening in government, as I've described, but by the 2030's people in all parts of society across the country were starting to develop their own visions and narratives of a good life – and participating actively in making it happen. Social movements bringing together youth, women, faith communities and many others, developed their visions for a just transition. Citizens became actively engaged in self-determining their own destiny. Participation in national and local development debate *and action* is part of being a South African. Everyone was assured that basic necessities would be available—food, shelter, health, education, clean water, affordable energy, and so on. But we as citizens came to understand that we need to pay for basic services, and *then* that we should demand them. Service delivery protests morphed into a more active engagement, making clear to local authorities that, if they did not deliver, citizens would take the initiative and make the change they want to see happen. Some changes led to quite different forms of social organisation.

That's when I planted those trees. There was a lot of public discussion about agriculture and food security and I realized I had an opportunity to participate too, even if in a small way. And here they are, still feeding the community! I don't technically own that land, land ownership has changed a lot in my life, but there started to be more ways to take care of the land and I wanted to be part of it.

How has land changed? Well, land emerged as a key element of the just transition. Land represented many things. The deep pain of Apartheid dispossession created a long-burning need for redistribution. This distribution included changes to ownership, certainly, but also beyond legal title it meant changes to political control, and land tenure security. Land can provide nutrition, health and community through local food production. And very fundamentally, land is about a sense of place. A good life is bound up with making particular places better, more liveable and attractive, and creating a sense of belonging. Now more people can have that sense of belonging, and have ways of taking care of the land so it can take care of them.

Land is fundamental to food security. Eish, that regional war in Europe that started in 2022 made big waves. Global food security hung by a thread. Yet the crisis pushed us to produce food in a much decentralised way. We have no more industrialised meat production. And we use much less land now, compared to industrialised agriculture

Of course, visions alone weren't enough, nor even were efforts to redistribute land relations. New energy systems were key to everything. The solar revolution that had started in earlier in other countries really hit SA in the 2020s. Well, once Gwede Mantashe moved on from being Energy Minister - that cost us







several years, and he seemed happier back in Luthuli House anyway. At the same time, the just transition discussions caused the renewable industry to do some soul-searching. It became clear that if solar and wind were going to take off, they were going to have to become pro-worker industries providing good green union jobs and feeding benefits back into all communities, including rural ones. I think the Russian war in Ukraine in 2022 was also a pivotal moment in this shift. The war disrupted food security world-wide and raised energy prices. While some backslid to coal, or reverted to the 'gas as a transition fuel' narrative it also highlighted that renewables were much more reliable, and locally available. It also reinforced the idea that just transitions were needed to enable resilience to shocks of many kinds.

Making these shifts in the energy sector required some other really big changes. It helped to have some practical funding mechanisms, though we went well beyond the ESG and 'impact investing' of the '20s. Green BIG made a difference. But crucially the financial sector needed to be entirely revamped. Several parts were brought together. A new financial strategy placed carbon budgets and social justice at the core of the financial system. The Development Bank of Southern Africa was repurposed, supporting large, nation-wide projects were supported that were both employment-intensive and low emissions. Infrastructure now serves more sustainable development – transforming dysfunctional rail systems, rethinking how we move around cities ('urban mobility'), designing our cities with the flow of water – and reusing the resource. Treasury developing a green taxonomy to push the private sector finance to meet climate and other sustainable development goals – and to ensure that the social aspects of ESG were included. It was not all about large banks - a myriad of small communities' banks gave real meaning to 'direct access'. All banks and many businesses took a longer-term view, and more risk – not just passing it all down the line. Cooperative business models – for everything from food systems to renewable energy projects became more common. Oh, and of course it was key that we taxed the robots, before the algorithms got to a point to outsmart us.

Another important shift was how we thought of governance finance. Given that social grants were so important in post-Apartheid SA, it took some time to realise we can't move to a more equal society through redistribution. For sure, social grants were an achievement and had their time and place. Gradually, as we imagined and worked into new development pathways, we realised social grants should not be forever. By 2050, we no longer had to spend on social grants. The just transition processes that started in the early '20s really did deliver socio-economic benefits, and reduced inequality.

What were the biggest challenges you ask? Well, none of this was easy to be honest, although continually reinforcing commitments to inclusive politics and coalitions certainly helped. We had seen the efficacy of globalised supply chains under transnational corporate ownership and growing dominance of the financial sector decline. Even so, giving up on concentrated private ownership was tough for many. The idea of sharing resources and assuming you would have enough did not come easy. But remember when I said that people started to find ways of caring for the land? That word 'care' is important here because it wasn't only caring for land that was essential but caring for each other generally; of course, this was underpinned by the greater sense of security associated with a more communal context of shared resource ownership.

A care economy became understood as foundational, as infra-structure – not just in the old sense of industrial infrastructure. Domestic work that is not automated is highly skilled, and people still prefer other humans caring for them – when they are sick, or young, or in a vulnerable state. Oftentimes care work had been overlooked in labour coalitions, but as people started looking more creativity at what a good life is, it became apparent that this too had to be recognized in discussions about employment, and in economic models that would work for diverse communities. Everyone needs care! Over the course of my lifetime, we have started to be much better at recognizing the importance of many care roles. Much higher value is now given to teachers, those supporting public spaces, nurses and many other care workers. This value has

shifted both in terms of financial support and recognition which has helped diversify local economies.

Part of this shift to care also meant that we began to work differently. South Africans are now 'working' three days a week, as material goods are largely produced by machines. We spend the rest of the time on community activities. But even what is meant by 'work' has changed – it is not chopped up into 8-hour days, with some activities getting paid and others not. The idea of an 8 hour work day seems absurd now, doesn't it? It seems obvious now that people work well on their own terms, and find their work meaningful and valuable. Which means that time spent in the community is part of what we do, including caring for others. Care here encompasses making connections, building community relationships. Cooking is part of work, or getting food from the local garden. Almost all of this is closer to home, there is much less need to travel – and we fly only for 'love miles'. Much more attention is paid to local transport systems, and how everyone can use them together.

Inextricably with the shifts around care, we also changed how we measured wellbeing. Youth discovered what older activists had long known, that the idea of continuous progress is an illusion, and that growth measured by GDP is a very poor metric. Have you ever asked any of our children born after 2030 what GDP means? Yes? So, then you know that blank stare they give you because this metric simply doesn't get used anymore. More than once I've been teased mercilessly by a young person about the stupid ideas that our generation had for measuring progress. 'What, you counted war as output?' Instead, kids now will be happy to explain the Sufficiency Metric to you in detail, although they may pause briefly to express amazement that you did not learn this in Grade 3. Our education system at mid-century is very different – obviously to Bantu Education but also to the outcomes-based education. The *formation* of young people values different forms of knowledge – imagination and rigour, creativity and science. Breaking the strangle-hold of SADTU in protecting even poorly performing teachers broke



in the late '20s. That enabled a refocusing on how young minds are formed – and shake up old thinking. Clearly these shifts did not happen overnight. Remember when I said we had to get creative, and find every opportunity to contribute to change? This is where academics, teachers and key government administrators really had to step up and help create new ways of doing things.

One of those new ways of thinking focused on the connections between things. Have you noticed how this story keeps coming back to systems? This wasn't an accident. Understanding systems as live things, as things that are all interconnected became central. We increasingly thought of sectors as systems, as we found change in transport, for example, depends on urban systems, energy, land and many others. It's about systems thinking – and looking at nature. We have learned to live with nature. We live 'local is lekker'. Reducing, reusing and recycling are ingrained, a 'circular economy' is hardly mentioned as a concept – it's just how we do things. These approaches had each on its own way advanced a renewed love and respect of nature.

We also had to do some reflection about what the values are that bind us together as South Africans. We had – and maybe still have – a tendency to focus on our differences. Apartheid cut deep. But we rebuilt trust, by re-focusing on values we all share – such as justice, care, solidarity, even the very idea of being South Africa, what it means to be SAn. We care what others think of us – also in the world, and acted on the belief that we are 'responsible global citizens', as our national climate policy says.

At the time people thought that two additional issues would be challenges, but it turned out they were wrong. First, it seems unimaginable that the diversity among South Africans led to violent conflict, back in '21. SA in 2050 is a society where there is respect for differences for cultures, no one size fits all. Life is convivial. There is peace, not merely an absence of violence, but a sense that everyone can live safely in their community. And go into any other community, feeling welcome and safe. I personally think that those commitments to inclusive politics, and really insisting on wellbeing for all was central to this.

The second challenge was population. Some thought that population would be a tough issue. Well, our 'demographic pyramid' had a big dent from HIV/AIDS. And we do have a relatively young population – and as with many other countries, it has become increasingly urban. But in the end, it was education, really supporting early childhood development and equal attention to young girls, that was key. The *formation* of young people happens not only in schools, but in the community – people learn skills all the time, life-long. And education critically led to women having choice. And they use that choice well, family size is diverse but on average declining. This is another example of how centering care, in this case in the form of education, has paid off for the country.

Common values helped us to change now, and imagine even more in future. We have seen a transformation of how we lived in the 2020s – from how we commute, produce food, communicate, innovate, entertain, educate, approach health care – and indeed technologies. In 2050, it is not hard to imagine future transformations of ways we will live in the future. We've seen it before – and perhaps how we live with nature, the land, water, and get to zero waste, are shifts that remain ahead.

So here we are, and the sun is starting to go down. We should probably head in as it is my night to cook in the communal neighbourhood kitchen. We seniors do the worknights so parents can focus on helping their children with school work, and then they do the weekends. It's a nice system. The thing is, we have not solved all problems. Global temperature went above 1.5 °C, and we still feel the impacts – efforts continue to bring global warming down below 1.5 in the next decade or two. But we have a firm foundation. We have created ecosystems where people work, create food, and live. Or to put it another way, we eat, drink, talk, and do some work. In short, we live a good life in 2050; this is our culture now. Now, shall we go chop some vegetables?





# The Learning by Doing Project

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**Graphic interface**

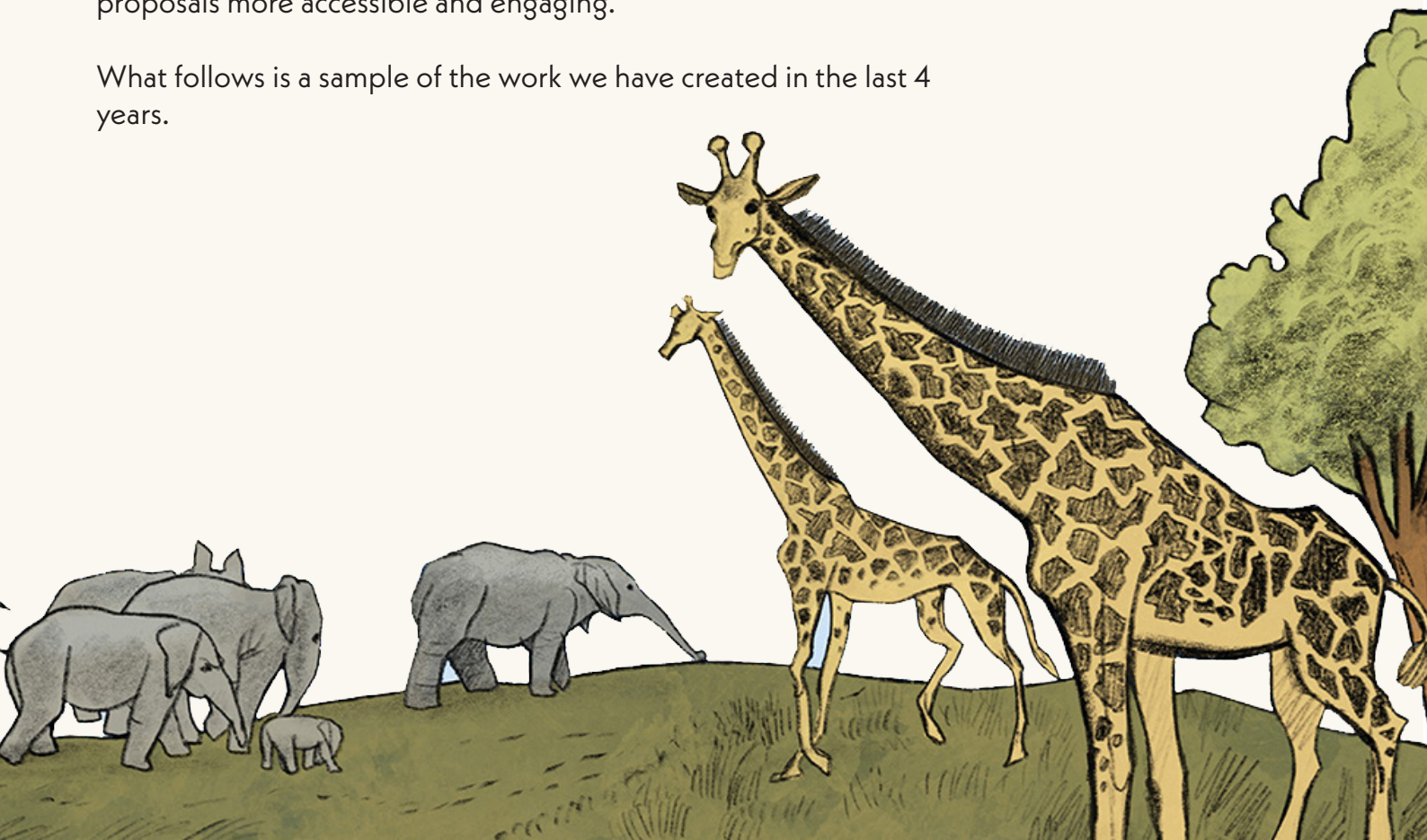
**The Learning by Doing** project has, since its inception, aimed to create illustrations, videos, and graphic novels to showcase its discoveries and findings. This approach helps translate complex research into accessible and engaging formats for a wider audience.

The project showcases its findings through a series of SCRUMs that developed visions ranging from the present to dystopian and utopian scenarios. Teams from Mexico, the Dominican Republic, South Africa, Lebanon, and Latin America collaborated to envision these scenarios, write texts, and support the illustrator. These efforts culminated in an interactive app hosted on the project's website, launched during a meeting in Santiago, Chile.

Additionally, South Africa's transport storylines were illustrated to depict both dystopian and utopian futures, and a video was created based on the Dominican Republic's narrative, featuring illustrations by local artist Kilia Llano. T

he project also developed a graphic novel reflecting various activities and findings. The novel follows Joe, an Andean bear, who navigates different future scenarios, grappling with climate crisis challenges and exploring potential solutions. Through interviews and script development, the graphic novel was expanded and completed, aiming to make the project's ambitious public policy proposals more accessible and engaging.

What follows is a sample of the work we have created in the last 4 years.

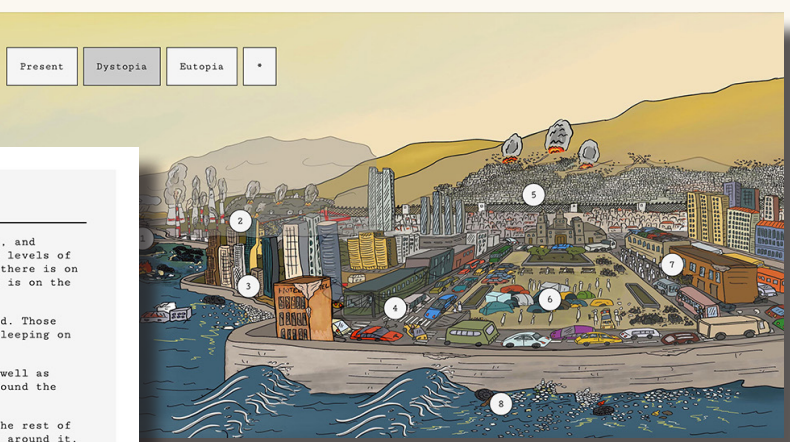


In the pursuit of showcasing the findings of the project, three specific scrums within the project worked to develop visions ranging from the present to the dystopian and utopian scenarios that we have identified and present them online. The teams from Mexico, the Dominican Republic, South Africa, Lebanon and Latin America have worked together to envision these scenarios, write texts about them, and support the illustrator in their task of depicting them. These drawings have been used to create an app that is hosted on the website. The app is interactive and allows users to engage with different scenarios and comprehend the process through which Learning by Doing arrived at the conclusions presented there.

The app can be accessed at [this link](#).

The app was launched during the sessions of the meeting in Santiago, held by Learning by Doing with the collaboration of ECLAC, in Santiago de Chile.

## Visions



### Dystopia. Public space.

Much of the plaza is a parking lot, and there's an entrance to underground levels of additional parking. What greenery there is on the plaza is withering, and litter is on the ground at it.

Benches are broken and not repaired. Those still in good order have someone sleeping on it.

The parking lot now has tents, as well as cars. There are protests in and around the plaza.

The plaza is almost cut off from the rest of the city because of the billboards around it. Smog chokes the place. It is not, by any means, an inviting place, and is more a circuit for cars to be in traffic.



# DIFERENT SCENARIOS. LATIN AMERICA

present



Eutopia

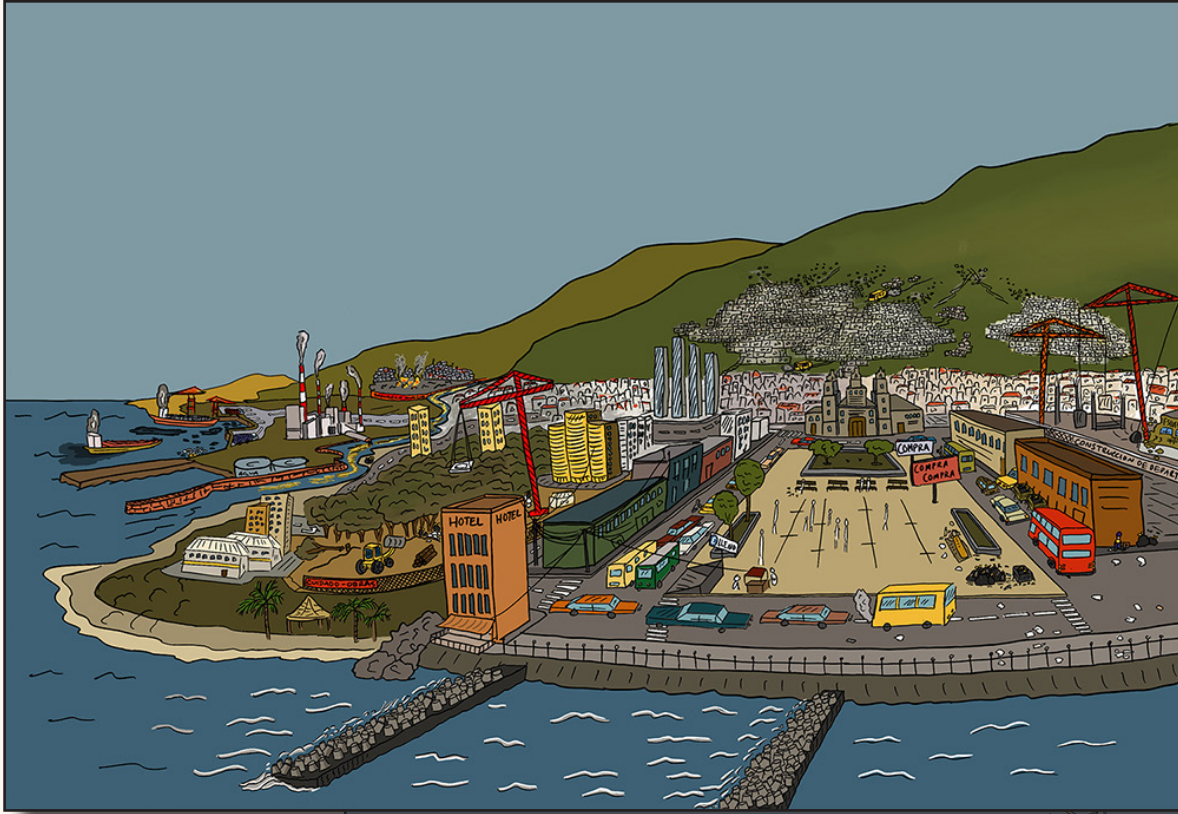


Dystopia

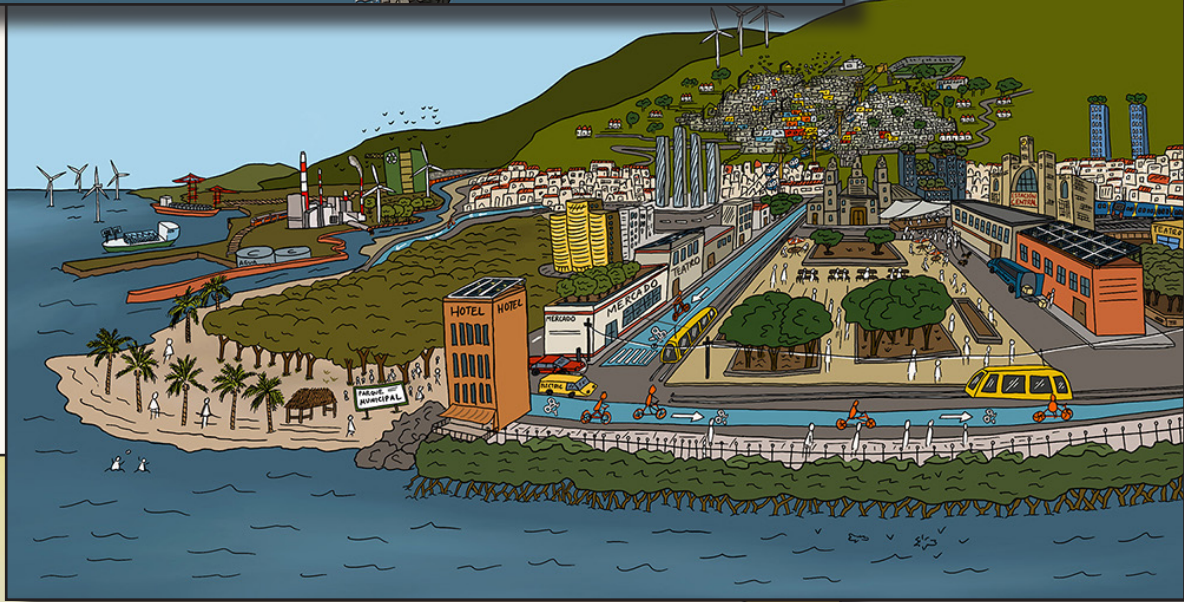


# DIFERENT SCENARIOS. DOMINICAN REPUBLIC

*present*



*Eutopia*



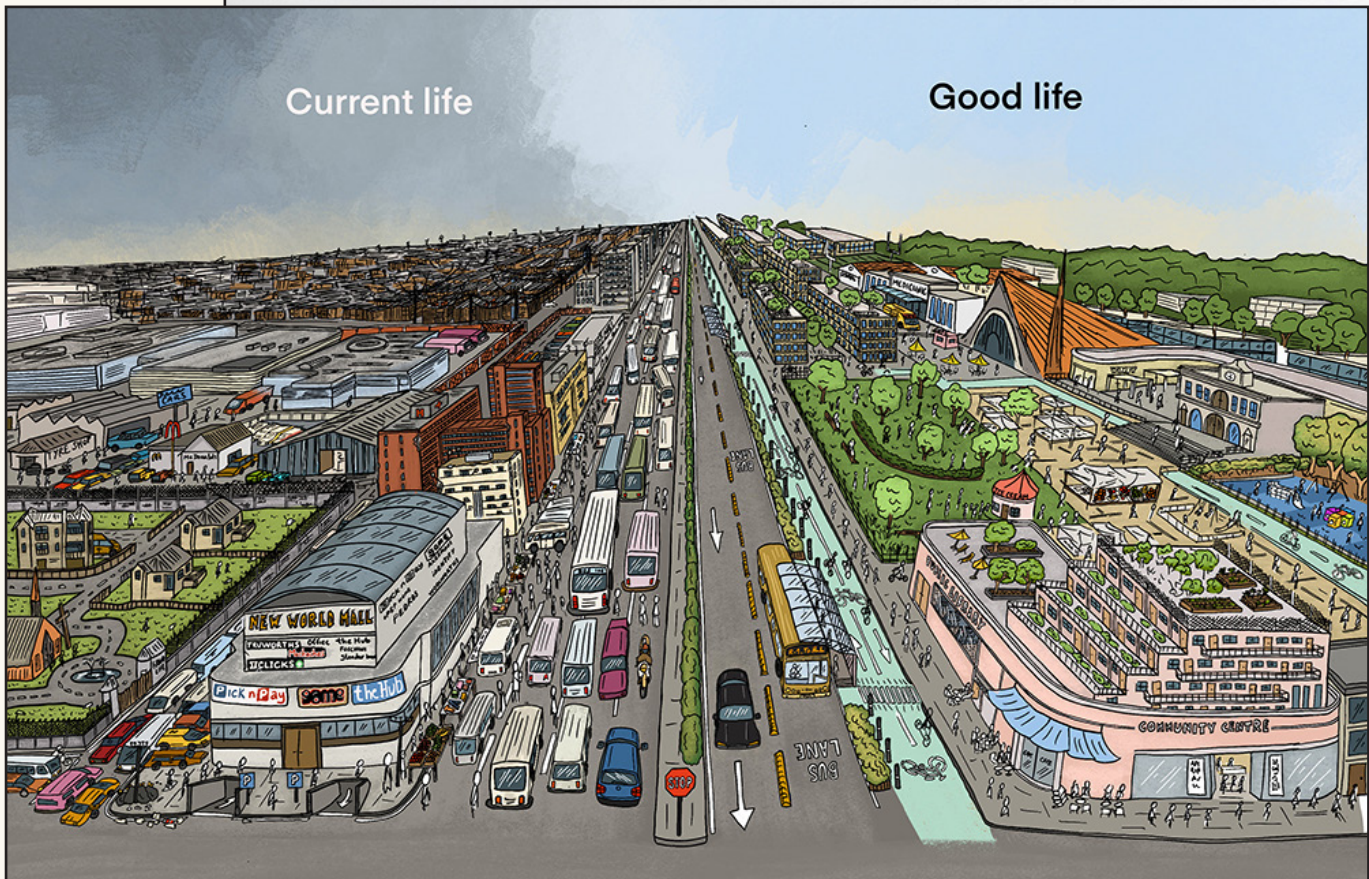
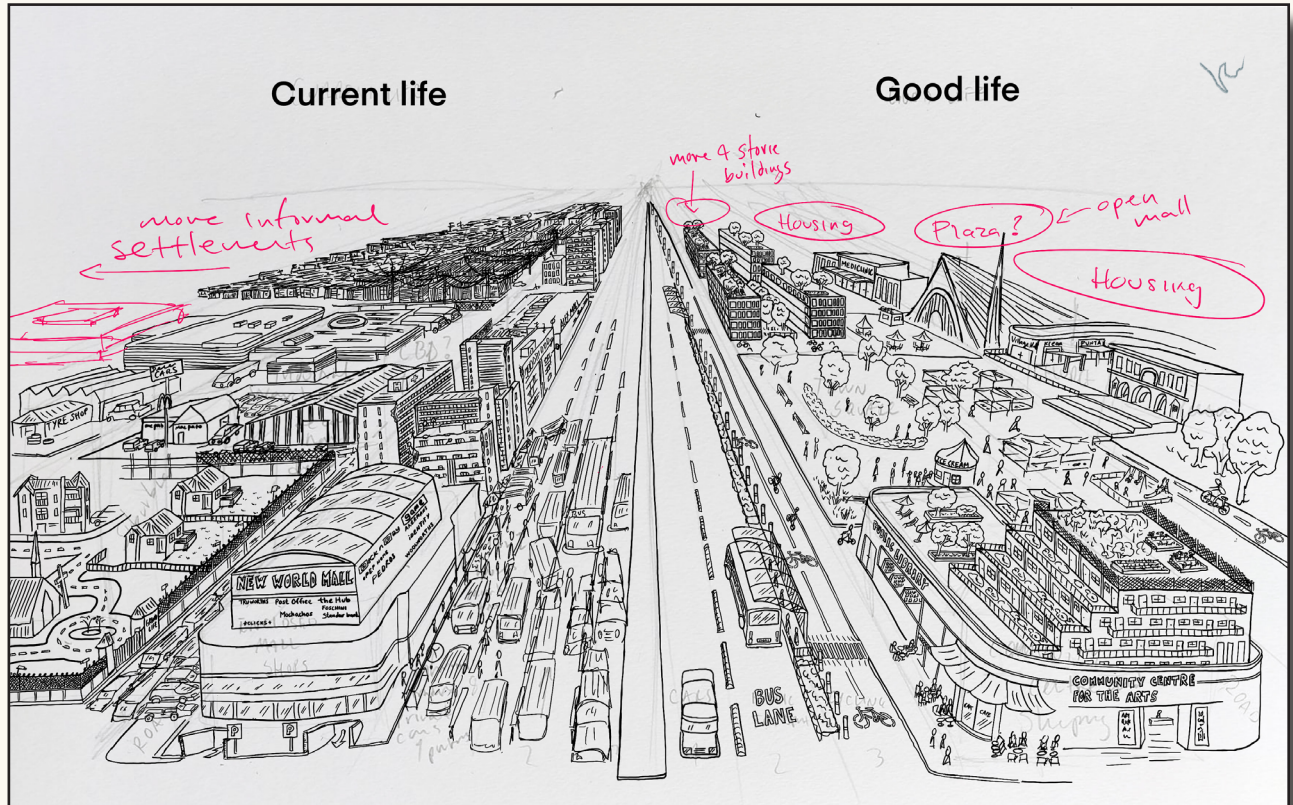
*Dystopia*





## DIFERENT SCENARIOS. SOUTH AFRICA

In South Africa, we created an illustration that allows users to see, in a single image, a dystopian and a utopian future, and it was used to illustrate the work of the South African team in the Development of transport storylines for the transition from the current modus operandi to a good life.



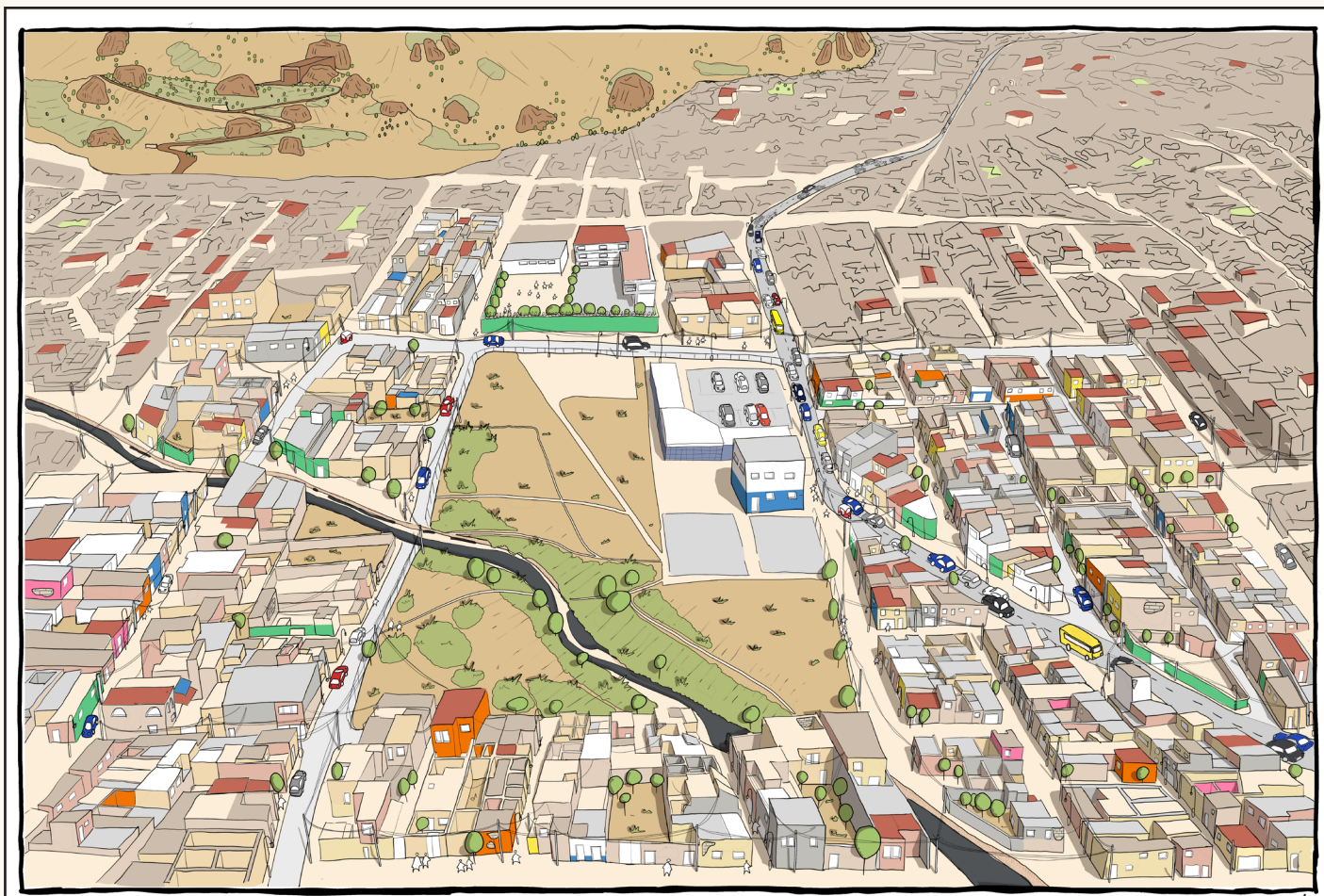


## DIFERENT SCENARIOS. GUADALAJARA LEARNING BY DOING AND LIVE PROJECTS

University of Sheffield, Live Projects takes form in a 6-week programme, taking students from the Masters Architecture Courses to run projects in a plethora of context, providing a set of outputs in a collaborative nature to live clients. Learning by Doing (LbD) and Live Projects working together has created the opportunity to develop a vision for 2050 in Guadalajara with LbD's 'Good Life' definition at the core. The architectural background of the team has facilitated the introduction of architecture that supports a resilient community. The project aims to promote the core principals of a 'Good Life' to policy makers and encourage climate action.

The site is in Miramar in Guadalajara. Guadalajara has a population of around 1,3 million inhabitants and Miramar is a small working class commuter town near the outskirts. It has private land in the centre that is an old 'Eijdo' (communal private land), with a 'colmena' (community centre) as well as a school. It faces problems with security, water shortage, congestion among other things. The LBD x Sheffield team imagined what the commuter town could look like, if it created the economic conditions to reduce the need to commute, if it had environmental urban interventions, if it had more effective water management techniques and if it centred around aspects of a good life?

*present*

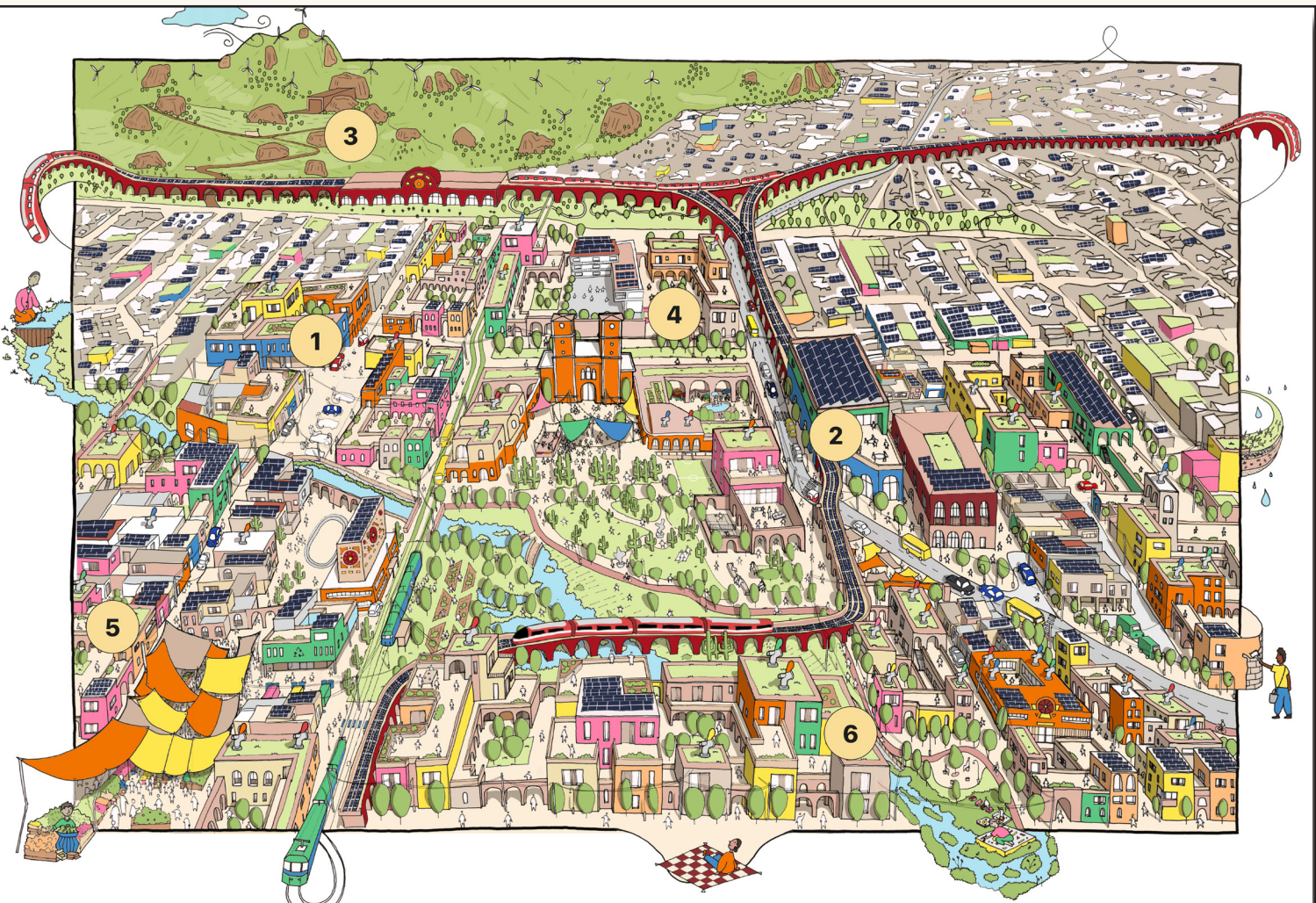




# Dystopia



# Eutopia







## Neighbourhood

The good life scenario for Miramar, Guadalajara, matures ideas of liberalism and moves past an individualistic way of life. Rather than solely focusing on the individualistic right to property, (which creates stale suburbia), the neighborhood emphasises the products of communal activity. Addressing the neighborhood and common good rather than solely the individual and the home, existing underlying social difficulties can be addressed. By integrating homes, shops, and sustainable services within a compact, walkable area, the public realm can become a safe environment that reduces the reliance on vehicles and fosters local economic activity. As these areas are compact the demand on sustainable wind and solar energy is reduced. Furthermore, creating visually coherent, accessible public spaces that integrate environmental design features such as shading and drainage can help forge an urban identity. A regional neighborhood identity has the potential to align individuals through shared values and common good, creating meaningful agency in a convivial manner. Whilst it is important to create a vibrant and safe neighborhood that looks beyond individualistic ways of living, an individual's home should use sustainable, locally-sourced materials and energy to minimize carbon footprints and support regional industries. Furthermore existing built assets and materials are reused and repurposed where safe and possible.

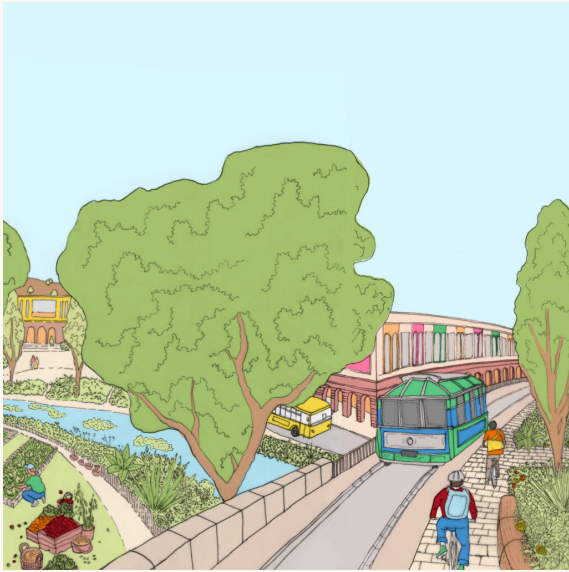


## Community

Relationality, agency, contemplation and creativity are ways of bringing individuals together through shared aspiration and common good. As Jane Jacobs said, "cities have the capability of providing something for everyone, only because, and only when they are created by everybody". The city is an ecosystem, whose components are a product of the people who govern them. Streets, buildings and neighbourhoods are an active representation of the diversity of communities that inhabit them, and this diversity can create vitality and creativity. Here architecture is the canvas on which rituals are painted. What was once a seemingly mundane and generic environment becomes coloured by its inhabitants and serves to benefit those who steward them.

The reason that these environments feel familiar to us is that they contain a fundamentally human approach to design. Activities such as farming, discourse and play provide reason to function outside of the private good, whilst also providing education to those in the community. By shifting the community's function from consuming goods and services to also producing goods and services, the neighborhood's environmental impact is reduced and social bonds strengthened. In this manner functioning for common interest rather than individual liberal gain provides a sense of unity and purpose.





## Transport

A transport system for a “good life” should prioritize sustainability, accessibility, efficiency, and equity. Its focus is not limited to reducing emissions from car reliance but looks to enhance urban livability and ensure mobility for all socioeconomic groups, so that Guadalajara “is not a place where the poor have cars. It [is a place] where the rich use public transport” – Gustavo Petro. Key elements include a rapid bus transit system (that integrates with existing infrastructure, but bypasses heavy traffic), safe walking and cycling infrastructure (that boosts the green corridors within the city, for resilience and well-being), and the integration of technology and planning (to create systems that are cost effective and cause minimal disruption to day-to-day life, such as the Bogotá Metro). These systems can also integrate sustainable energy sources such as PV.

In a good life scenario transport systems bring people together supporting community cohesion and economic vitality (by reducing costs relating to congestion and pollution such as costs to health and delays/efficiency) while promoting sustainability and well-being.



## Civic Centre

Civic spaces should embody the shared values and rituals that connect people to their cultural and spiritual traditions. These spaces need not be exclusively religious but should draw on the depth and richness of non-secular traditions to create environments that promote contemplation, solidarity, and communal belonging. These spaces can offer counter-narratives to the secularization and commodification of modern life. Subsequently the civic centre is not limited to practical or administrative purposes but can become the focal point of Res Publica.

The architecture of this space draws upon traditional forms so that individuals are connected to a shared cultural identity. In doing so the civic centre serves as a cultural repository of communal memory and values. The civic centre should be rich with cultural and spiritual meaning. However, focusing solely on non secular traditions may not resonate with an increasingly pluralistic society. Henceforth it is important to ensure that whilst these spaces provide spiritual meaning that they remain open to the inhabitation and use of diverse traditions, so that the common good remains inclusive.





## Markets

Local markets are key economic devices that ensure local cultural and economic stability. Where a commercial complex governed by chains exploits an area for its labour and removes profits, market systems support small-scale producers and local artisans whilst focusing on the interaction between the consumer and retailer. Building trust in this area can promote local economic activity and can reinforce community ties through a ballet of interactions on the sidewalk.

In a local market the exchange of goods is deeply connected to the cultivation of local relationships that are built upon the ideas of trust agency and dignity. These gatherings encourage personal interaction, counteracting the alienation that often arises in modern, commodified economies that are rooted in unsustainable practices. From a sustainability perspective, local markets promote shorter supply chains, reducing the environmental impact of transporting goods over long distances.



## Green Space

Green public spaces are fundamental to any good life scenario. They provide a backdrop for contemplation, rationality, creativity and agency whilst also serving as resilient buffers to environmental adversity.

In the case of Guadalajara buffer zones have to address a 3-4 month rainy season and a dry season. Consequently the architecture of green spaces should incorporate features like bioswales, retention ponds, and permeable surfaces to manage flooding by slowing the flow of water in the wet seasons and capturing and retaining water in the dry. Specific regional species of plants such as *Bouteloua gracilis* (Blue Grama Grass), *Typha Domingensis* (Southern Cattail) and *Opuntia ficus-indica* (Prickly Pear Cactus) can help with water infiltration/ filtration, habitat provision, erosion control, and drought management. These green buffers are important for environmental quality as they support biodiversity, improve air quality, cool urban heat islands and reduce the impacts of floods and droughts.

As mentioned Green Spaces are fundamental to a good life and their benefits go beyond environmental aspects. A green public space provides a backdrop for activities that promote a good life, such as contemplation and relaxation, relationality and play and agency and physical activity. It is critical that green spaces are preserved for our environmental, physical and mental health and are not consumed by housing as unregulated suburbia grows in line with the liberal mindset of home ownership.



## DOMINICAN REPUBLIC ILLUSTRATED NARRATIVE



Another important element was the creation of a video that illustrates the narrative produced by the Dominican Republic during the first year of the project. We formed an alliance with a local artist, Kilia Llano, who created 10 illustrations based on the narrative text, which in turn were used to generate a video that frames the work of the first two years in that country.



EL PROYECTO LEARNING BY DOING  
HA TRABAJADO EN LA  
REPÚBLICA DOMINICANA,  
EXPLORANDO ESTAS PREGUNTAS.





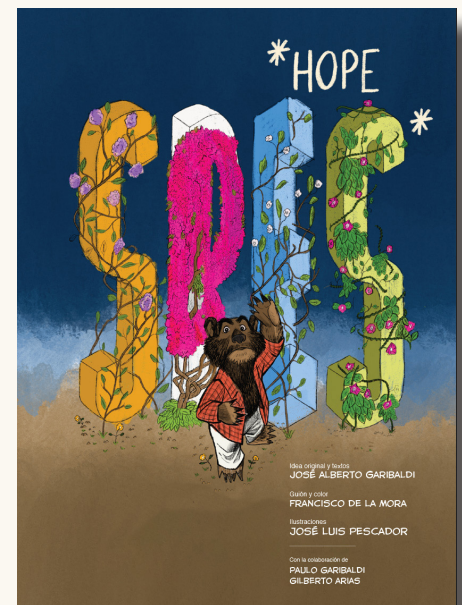
## SPES. THE MAKING OF THE GRAPHIC NOVEL



In the spirit of "Learning by Doing", the project has been working on a graphic novel based on the findings that the different activities of the project have been producing and will produce in the future. The graphic novel will reflect/incorporate the different activities and outputs from the project.

We started with a series of interviews with members of the project to gather base-line information and generate a first script, sketching the overall content of the book.

Why did we make a graphic novel? Once it became clear that LbD was in the business of imagining narratives it seemed appropriate to illustrate our imagined visions. Therefore, the graphic novel was devised as an exercise to depict the different possible scenarios in the future. Each depends on how well humanity adapts to the new environment and its consequences, as it seeks to mitigate the effects of global warming. Here, findings and discussions from the Project serve as input to the GN. For instance, the Project has been developing narratives or descriptions about the notion of the good life in several countries, in 2050. These discussions (fictional but based on actual information shaped by members of the project) are being incorporated into the narrative of the graphic novel. Therefore, it seemed appropriate to tell a story because LbD was in the business of imagining stories and backcasting narratives, so it was decided to help the ambitious public policy proposals become more accessible, they would be lived out through Joe, an Andean bear that is the protagonist of the story, who, like so many people in the world, finds himself in need of migrating to improve his life conditions, but also to seek answers. Through his voyages, Joe encounters many people and enrich his knowledge of himself, but also the way he understands the Climate Crises, and by doing so, he shapes his way of dealing with it. Joe grapples with the ideas of modernity that led to the climate crisis. Like us, Joe is born with the ideas of the current age, he feels the same despair many of us do when we think of climate change and is struggling, like many today, to find a hope amongst it all. He has several dreams that allow him to "live in" these





different scenarios. The first apocalyptic dream shows Joe in Paris (where the famous Paris agreement was reached in 2015), uninhabited and fully reclaimed by nature. He sees examples of flourishing and failure. Of famine and of street festivals. Of community and catastrophe and through it begins to ask questions about the approach we want to take and the world that would lead to in 2050.

Joe investigates the genealogical trajectory that led us here, watching the handing down of our ideas from the enlightenment to today's collective action impotence. The graphic novel wrestles with these ideas. Do these create a world that fosters a good life? Are these the doctrines that can allow us to survive the climate crisis in a fruitful manner? How can we rethink our relationship to nature? How can we rediscover a public policy that is not the application of a priori plans? How could we live out a different philosophy and public policy that can lead to real, potent and actionable hope for 2050?

The graphic novel wields together the philosophical arms of the project together with the concrete storylines of the countries upon a spirit of learning and discovery (the heart of LbD). To create a story of 'what ifs?' What ifs, with hope without ignoring the what ifs of failure. It tells a story to allow us to think and understand the great narratives of the project in a concrete way.

As its development advanced during 2022, the graphic novel expanded to twice the original size and consolidated in a single document; likewise, during the year all the illustrations of the novel were completed.

The graphic novel will be published in 2025 by Fondo de Cultura in Spanish for the Latin American market. We are hoping to secure a publisher for the English version later in the year.

