

Knowledge Meritocracy & Economics

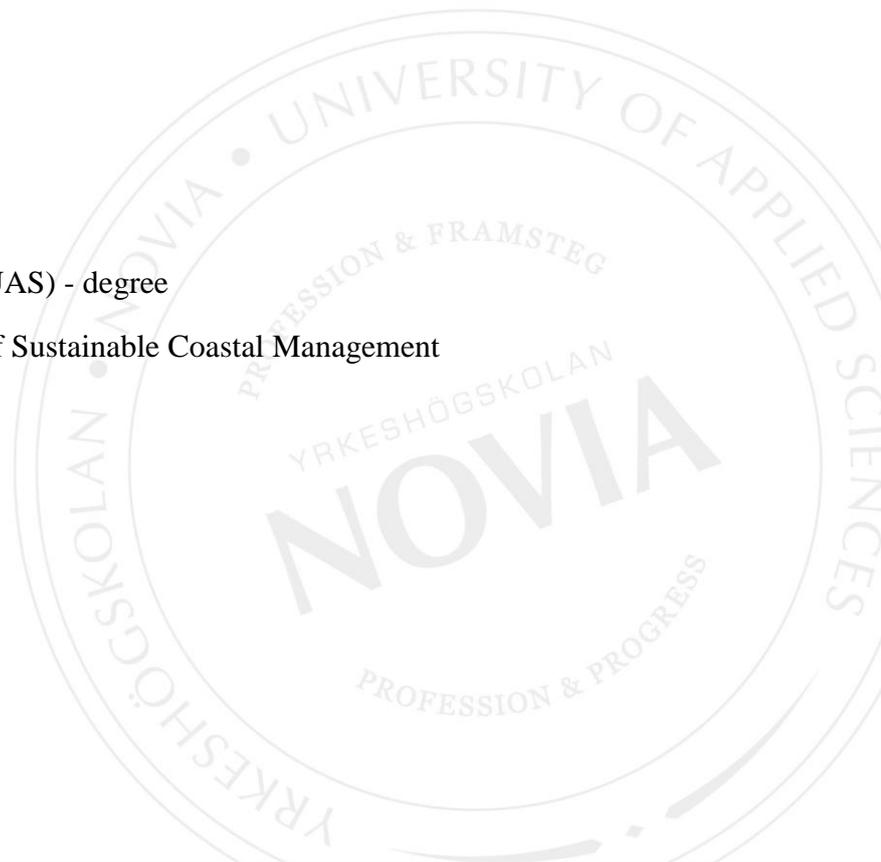
Governance for Sustainable Progress

Hernán Abad Ortega

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Author: Hernán Abad Ortega

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Place: Novia University of Applied Sciences, Raseborg, Finland

Supervisor(s): Anna Granberg & Veronika Bäckman

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Abstract

Climate change is one of the biggest threats our civilization and life in our planet as we know it. Our governments have known about this problem for many decades, but have failed to implement any effective solutions to it. On the other hand, our economies seem to be at the service of finances instead of our own wellbeing.

Thanks to technology and redesigning governance, today our societies can represent themselves more effectively than any political party will ever be able to. Knowledge Meritocracy provides a paradigm shift in governance to all countries that implement it and these countries will become Progressive Nations. With help of the Civic Network, this system accomplishes resilience in governance by distributing the decision making power from a small number of decision makers to a much larger number of qualified stakeholder citizens. In this interconnected platform, all qualified citizens will have the opportunity to actively participate in making the decisions that will shape the future of our societies.

The economic strategy that a nation uses to generate can also be considered as governance. For this reason I decided to propose an economic model that compliments the Distributive Meritocracy that the Progressive Nations implement as their governance system. This economic model is focused on generating social value and it combines the availability of technology, the population and the sustainable infrastructure that governments provide to their citizens, to produce the Living Standards Curve. This curve will determine the rate at which society will progress and the parameters by which this economic model functions, will ensure trans-generational equity and wellbeing.

Language: English

Key words: knowledge meritocracy, civic network, climate change, resilient governance, sustainable economy, wealth distribution, living standards, long term progress

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1 Introduction

We are currently living in the Anthropocene, an era in which humanity's ability to manipulate earth's environment has grown to such extent, that it has started to disrupt the ecological cycles that have provided us with the necessary means to prosper and evolve into the civilization that we know today (Brown & Schmidt 2013). Our civilization possesses an immense social complexity, one that surpasses any other known life form on Earth, and which has given birth to organizational structures that have evolved through our history to optimize our relations with each other and provide ourselves with the best conditions possible to perpetuate and succeed as a species.

One of these organizational structures is the economy and during the past decades, the most "popular" economic model in our planet has been Capitalism and the many different versions you can find scattered around the globe. This socio-economic system is degrading our planet at an alarming rate (Gowdy 2014). In 2013, a group of economists demonstrated the fallacy of using GDP as a proper indicator of economic growth by developing a Genuine Progress Indicator or GPI. When implemented, GPI showed that when you take into consideration the external costs that economic growth has imposed on the world, these externalities have surpassed the benefits since 1978 (Kubiszewski et al. 2013). Some even argue that Capitalism creates more waste than any social value (William & Magdoff 2017). In any case, this economic system gave birth to globalization and multinational corporations. Through financial wealth, some of these corporations have gained the ability to influence entire nations, including their laws, development strategies and "shape" them in their favor (Renner & Prugh 2014). As a consequence, the distribution of the financial wealth of our planet has become concentrated in a small group of people and today, you can observe great inequality in the living conditions human beings must face to survive in different regions of the world (Kirk 2017).

2 Purpose

The purpose of this thesis is to study and understand 2 problems that are a threat to the progress of our societies. These 2 problems are first, the unequal distribution of economic

wealth among the members of society and second, the failing of our current governance systems in properly engaging to solve the biggest threat we face today, climate change.

3 Method

In this thesis, I will study literature in search of the key causes of the failure in global climate governance over the past decades. I will also study the problems that modern economies have today, and will face in the future. As result to my findings, I will propose a model of governance that intends to solve these key issues and an economic model that supports it and ensures long term wellbeing for our civilization. To test the governance model I will put it in practice by describing how the model would work to solve the climate change threat.

4 Theory

4.1 Climate Change

Over the past decades, CO₂ emissions coming from the burning of fossil fuels have been constantly on the rise. Scientists have been warning us about the detrimental impact of greenhouse gasses in our climate for several decades. Scientific data suggests, almost unanimously, that we must hurry to stop green house gas emissions before they cause a rise of 2° C (above pre-industrial levels) in the average temperatures of our planet, or our climate and our entire civilization, will face severe consequences. Under the current international policies that have been implemented, it is likely that by 2020 the average temperatures in our planet will have increased by 3.7° C. For example by 2020, Australia might increase their greenhouse gas emissions by 12% compared to those of 2014, abandoning their pledge of reducing them by 5% compared to year 2000 levels. Japan also abandoned its target of reducing their emissions (regarding those of 1990) by 25% by 2020. Their new target is reducing them by 3.8%. Canada has kept developing their carbon intensive tar-sand deposits. In 2013 Poland ironically hosted an international climate and coal summit at the same time in which they held an international round of climate talk,

accepting sponsorships coming from builders of coal power plants and oil companies among others. (Renner & Prugh 2014)

In 2016, multilateral development banks like The World Bank and the European Bank for Development and Reconstruction (EBRD) have kept investing billions of dollars of public money, in new fossil fuel projects (Carrington 2017). Most recently USA, historically the biggest contributor of CO₂ emissions in the planet, announced that they will be pulling out of the Paris Climate Agreement, a climate deal that was created in 2015 to make countries work together to commit towards reducing their emissions. (Galeon 2017).

Carbon Markets or ETS (Emission Trading System) implemented in the European Union has proven to be a failure when achieving concrete results in diminishing CO₂ emissions. Although the carbon markets policy should theoretically work when implemented, corporate lobbyists have always found ways to saturate the market with emission allowances. This causes a substantial decrease in the price of the allowances making them useless when trying to achieve their goal. For example, when EU carbon markets were first implemented in 2005, the price for emitting one ton of CO₂ was of 30 EUR. By 2007, the price had dropped to 0.1 EUR. When re-implemented in 2008, the price for emitting one ton of CO₂ was set at 25 EUR (an estimated minimum price for the policy to be effective) and by the end of 2013, the price had dropped to 5-10 EUR per ton. Apparently, market based policies provide more of a relief mechanism to help governments to avoid making the hard political decisions that should be implemented to achieve real progress towards sustainability. On the other hand, well organized groups of climate change denialists have managed to take advantage of the complexity regarding climate science and have been able to implant a certain degree support against the ever increasing consensus that provides scientific evidence of human influence over climate change. (Renner & Prugh 2014)

Over the past 2 decades, the rise of countless organizations in charge of developing the necessary policies to address this issue, have failed to achieve concrete results. Part of this failure has occurred due to a powerful lobbying industry exercising economic pressure to defend the private interests of corporations (Bartosiewicz & Miley 2014).

Another responsible for this failure has been the high level of complexity and bureaucracy around the logistics of international organizations in charge of solving this problem. The UNFCCC (United Nations Framework Convention on Climate Change) alone has more than 180 acronyms which are almost undecipherable for most people on the planet. The COP (Conference of the Parties) has demonstrated through its history, an inability to achieve any substantial progress towards fighting climate change, since the negotiations keep postponing the implementation of the “hard” political decisions needed to address this issue, hoping that future climate talks will be able to achieve the massive reductions in carbon emissions that are currently needed. (Renner & Prugh 2014)

4.1.1 Local Governance

The political tactics and financial instruments that have been implemented worldwide, haven't been successful in achieving substantial progress towards mitigating climate change in the way it should be (Renner & Prugh 2014). If it wasn't for local governments, a few private organizations and grassroots movements powered by citizens, the progress would be even less. It seems like economic and financial growth, is more important even than the wellbeing of our planet and civilization.

Local governments have proven to play a key role towards trying to achieve global sustainability. This occurs because in local governance, sustainability is inevitably an important priority and local leaders, have shown to have strong leadership and commitment towards reaching goals they set. But local governments are also more effective at the moment they need to collaborate to solve global issues because their representatives are much more aware of the problems they need to overcome to provide their citizens with the infrastructure they need to have decent living conditions. On the other hand, governments at a national level represent broader and more abstract interests, making them less effective. This has been demonstrated by the fact that local governments have been much more efficient to successfully implement environmental initiatives. (Zimmermann 2014)

For example in 1992, once the United Nations Framework Convention on Climate Change (UNFCCC) was adopted, the first Municipal Leaders Summit on Climate Change was

organized by local governments after only 8 months. In the case of national governments, they needed 13 years to organize a global implementation mechanism which they called the Kyoto Protocol and which the U.S. (the biggest CO2 emitter at that time) didn't even ratify. Local governments are also good at cooperating with each other. The ICLEI (International Council for Local Environmental Initiatives) was founded in 1990 by more than 200 international city leaders with the purpose of building a cooperation network among local governments that were concerned about environmental issues. This network is still in use and has helped local leaders to act together at a local level in areas of global concern. It has also provided key support for sustainable development and for different processes of the United Nations. (Zimmermann 2014)

As more evidence regarding the resilience of local governance, when the president of the United States announced the withdrawal of the country from the Paris Agreement, states like California and New York announced that they will continue to respect the agreement goals, joining more than 375 Mayors, along with thousands of businesses, universities, investors and counties, in a pledge to keep the agreement going (Van Begin 2017).

4.1.2 Renewable Energy & Global Leadership

Now that the United States, the most powerful economy in the world, has announced its withdrawal from the Paris Agreement, the future of our climate may seem very uncertain. On the other hand, this important event may have an unexpected outcome. At first, we might deduct that the United States pulling out of the agreement, may cause a disincentive domino effect on the rest of the economies on the planet from investing their economic resources into transitioning to renewable sources of energy. This could happen mainly because of the extra costs of the transition and economic disadvantage that this would imply. But if you look at this from a different perspective, it might have exactly the opposite effect.

Transitioning into renewable sources of energy is an obligation that sooner or later, every country on the planet will have to go through to remain competitive in our globalized markets. Renewables are starting to become more cost efficient than fossil fuels when

producing the energy our economies need to function (Caughill 2017). This cost efficiency will increase even more when our financial systems and economic models, undertake a well needed upgrade and start seriously considering the massive long term financial costs, that the degradation of our environment will cause in the future and start including these figures into their equations. The first countries that make the transition will have a competitive advantage over the rest because of the technological “know-how” and efficiency improvements that will arise with it. Renewables are not only good for the planet, but are also very good for long term business.

As the U.S. pulls out of the Paris Agreement, the country is creating a huge void in global leadership and this void, represents an unexpected opportunity for a new “actor” to step in and become the new global leader in the coming decades (Sanger & Perlez 2017). This opportunity could be the extra incentive needed to make the “green revolution” attractive enough to be fully adopted by the different economies around the globe. It could even cause the appearance of new international coalitions and trading deals that will provide advantages for countries making a real effort to transform their energetic infrastructure over those countries that want to remain stuck with fossil fuels and jeopardize our future. After all, climate change is a threat that affects everyone on this planet, so why should we support economies that are making this problem worse?

China seems determined to seize this opportunity and today, they have the lead in becoming the global leader in renewable energies. During 2016, China did massive international investments in this sector. They invested in several projects worldwide in countries like Germany, Chile, Australia, Indonesia, Pakistan and Vietnam. Today, China is the largest manufacturer of wind turbines on the planet, they own 5 out of 6 of the world’s largest solar module manufacturing companies and they also possess the world’s largest electricity utility and ion lithium manufacturer. (Slezak 2017)

The country is not only heavily investing in renewable sources of energy and technology but as never before, they are also effectively implementing strict environmental regulations to address one of their biggest problems, environmental pollution. On what goes of 2017, Chinese environmental inspectors have temporarily shut down an astonishing 40% of the

factories in the country due to violations to the environmental regulations and in most severe cases, people are even being sent to prison. This is an event of unprecedented magnitude in the history of China and although they realize that closing a large amount of factories will cause a big economic damage in the short term, they intend to mitigate it with long term benefits for their population, the environment and an increase in the local demand for clean technologies. (Schmits 2017)

For better or worse, important events are starting to happen globally concerning the climate change topic. From my perspective, disruptions in the status quo that has reigned over climate policies during the past decades, are positive since they could have the potential to create new opportunities for important changes to occur.

4.2 Governance

4.2.1 The problem with Democracy

Socrates, one of the greatest thinkers in human history, didn't like democracy. He explained his way of thinking by comparing a nation, to sailing ship and asked: If you had a ship full of people navigating through a storm, would you like ignorant people making the decisions on how to sail, or would you prefer that people that is educated and experienced in sailing making the decisions? Then he extrapolates this concept to a nation electing its leaders. If you have uneducated people voting for a leader, they would vote for the one that makes the promises that sound more appealing regardless of the real feasibility of the promises, over the proposals coming from a better suited leader that is realistic and makes realistic promises. If you have a population that has high levels of ignorance, a realistic leader will be less appealing. This dilemma creates the risk of poorly educated societies electing and giving decision making power to sweet talkers, instead of electing the more capable and realistic leaders, putting at risk the prosperity of entire nations. More than 2000 years after Socrates first warned us about this issue, this still is a big problem in many parts of the world. (Jones 2016)

4.2.2 Liquid Democracy

One of the best ways to improve governance, is by reducing corruption and ignorance (Renner & Prugh 2014). The internet has profoundly changed the way the members of our civilization communicate with each other and the instantaneous connectivity that online platforms provide for us in the present day, might be the key to make a much needed paradigm shift in the way our governments are structured and the implementation of their policies. By using technology to give each one of us a voice in all the civic matters that concern us, we might be able to accomplish this shift.

If you are skeptical about online platforms that give citizens political power from ever being implemented, you should think twice. They are already starting to appear in different parts of the world as online platforms and Apps that are designed to provide “liquid democracy” for governments at a small scale. In Boulder Colorado (U.S.A.), Camilo Casas (candidate to the City Council) has pledged that if he is elected this November 2017, he will use an App called Parti.Vote (which he designed himself) to vote YES or NO on issues and policies that concern his citizens. If more than 50% of the citizens vote “no,” he will vote in the same way in the council. Only if votes end up in a tie, he will vote using his own criteria. In Silicon Valley there is a team developing an app called Sovereign app. The app aims to give people a political voice regarding important issues that concern them. They are using Blockchain technology to make the app resilient against hackers and fraud. (Galeon 2017)

In Australia, a similar app called Flux, which also uses blockchain technology, supported 13 candidates in the federal elections of Australia in 2016. Similar apps supporting democracy are being used in the UK and Kenya among many other places in the world. (Ross 2016)

4.3 Economic Wealth

We live in an era where automation, monopolies and globalization are causing a reduction in the labor’s share of the income. This means that workers in general, are receiving a smaller part of the wealth generated by our economies and on the other hand, the people

that own businesses are receiving a bigger share of the wealth generated by our economies. If we do not adapt our governance systems and economists fail to develop the necessary “market tools” to stop this trend, capitalism could transform into a sort of dystopia. (Smith 2017)

In 1930 a famous economist called John Maynard Keynes, predicted in his essay *Economic Possibilities for our Grandchildren*, that by 2030 the increase of productivity caused by technological advances would be such, that people would need to work 15 hours per week to satisfy their basic needs. When this day arrives, Keynes said that *“freed from the necessity of toil, mankind could devote itself to nobler causes than “detestable” money-making, such as science and the arts.”* (Moore 2017)

4.3.1 Universal Basic Income

Lately, one of the most mentioned solutions to unemployment is the implementation of UBI or Universal Basic Income. This policy basically consists of the government giving every citizen enough money for them to cover their monthly basic needs. This sort of allowance would be given to everyone without taking into consideration if they are employed or unemployed. A trial UBI program is being implemented in Finland where the government chose 2000 citizens to them 560 EUR every month for a period of two years. So far, the program seems to be having good outcomes like reducing stress levels in citizens and has created greater incentives for people to find work (especially part-time jobs for unemployed people under governmental welfare payments) and pursue business ideas. On the other hand, the chief economist of the Central Organization of Finnish Trade Unions Ilkka Kaukoranta, argues that this scheme takes social policy in the wrong direction and implementing it at a national level, would be *“impossibly expensive since it would increase the government deficit by about 5%.”* (Chapman 2017)

In the UK, a similar UBI scheme at a national level would cost around 240 billion pounds per year, which represents approximately one third of the total governmental spending (Moore 2017). There is though, a quite interesting alternative to this seemingly high cost

social policy. The name of this idea is Universal Basic Services and it could basically deliver the same benefits as UBI, but at a much lower cost than the later.

4.3.2 Universal Basic Services

Inspired by the experiments that have been done around the idea of universal basic income, a paper published by the UCL Institute for Global Prosperity proposes that a more viable way to address the unemployment, wages stagnation and poverty related issues, is by implementing what they call Universal Basic Services or UBS. The main idea behind this concept is to extend the actual healthcare and educational welfare systems that exist in the UK, but now adding free access to housing, food, transportation and internet. This would cause a radical improvement in the life quality of the citizens that belong to the lower income groups, since they would be mostly the ones making full use of the benefits provided by UBS. These people would now be able to invest more in their education and apply to better paid jobs, they could also travel longer distances when going to work, it would bring them great stress relief on the economic pressure of starting a family, would increase social equity and overall wellbeing in society. According to the research, implementing this scheme would have an annual cost of 42 billion pounds, meaning that UBS could represent a much more viable option compared to the 240 billion pounds per year that would cost the UK government to implement the universal basic income scheme. (Moore 2017)

These and other options for possible solutions to the problems that modern economies face are starting to arise. Some argue that the key to solve these issues could be through re-thinking the entire purpose the economy and its outcome towards society (Palley 2014). I support the idea that our economies should be measured by the social value they generate and focusing only in financial indicators like GDP, unemployment and inflation, is a mistake when trying to assess the real outcome that an economy has on society (Williams & Magdoff 2017). In this way we make sure that the financial system is serving society and not the other way around.

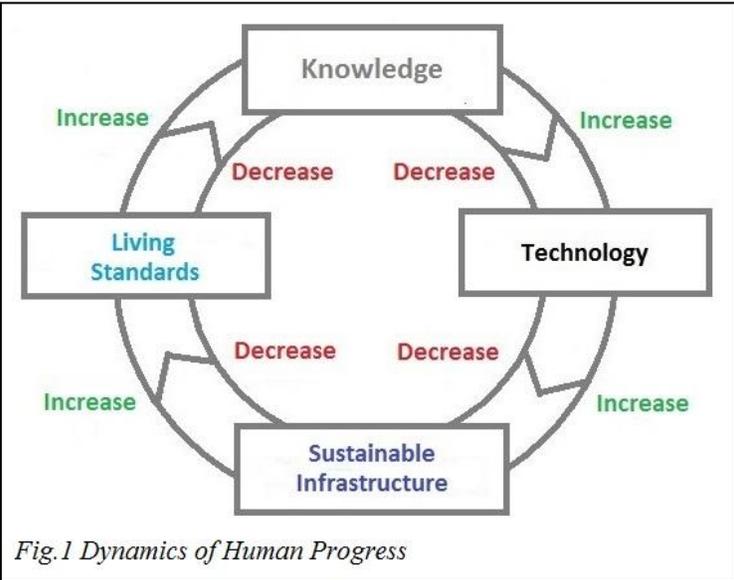
The redistribution of wealth at a local and global scale, is a key factor for achieving a prosperous and sustainable governance system (Alperovitz 2014). To build a better future for humanity we must shift our economies towards sustainability and fairness. A sustainable and fair economy is one that creates no waste, faithfully pays the full costs of its impacts and invests a big part of the wealth it generates in public necessities and goods, rather than incentivizing consumerism and financial speculation (Orr 2014).

5 Results

5.1 The Economy of Knowledge

As I realized during my study that a nation can have increasing financial growth rates and be wealthy, but if you don't properly distribute the wealth that is generated and aim for a useful purpose other than the allocation of financial resources in certain sectors, then we will be at the service of an economy that works to benefit a few instead of benefiting society as a whole. For this reason I decided to propose new ideas on what our economies should strive for and align these goals with targets that are sustainable and that will bring benefits to all members of society.

I propose that Human Progress occurs as a result of increasing our access to new knowledge. As seen in *Fig 1*, an increase in knowledge generates new technology. New technology generates an increase of efficiency in the use of our resources. Resource efficiency increases our ability to generate Sustainable Infrastructure, providing our citizens with better Living Standards and as a result, this will increase our chances of generating new knowledge. Then the cycle is complete



and ready to start again. On the other hand, a decrease in knowledge produces a decrease in technology. A decrease in technology reduces resources efficiency and as consequence, we decrease our capacity to create sustainable infrastructure. With less sustainable infrastructure our living standards decline, we generate less knowledge and human progress is endangered.

Having human progress that is generated by knowledge as the most important goal of our economies, the basis for the economic model I propose are funded in 4 main pillars that are intimately related to each other. These pillars are Sustainable Infrastructure, Technology, Living Standards and Population. When they work together they can create long term prosperity for the human race and provide real indicators on the health of the economy.

5.1.1 Sustainable Infrastructure

The first pillar of my model is the Sustainable Infrastructure you can provide for the people in society. Based on my study, I propose that the most important characteristic of this kind of infrastructure is that **all sustainable infrastructure must be created using such mechanisms, that by the end of its life cycle, the environmental conditions and the availability of resources needed to re-create it, should be no less than when the infrastructure didn't exist.** Using this definition as a fundamental law, we make sure that when any infrastructure is built to provide certain living standards (education, health services, food, shelter, transportation, employment, leisure, etc...), the next generation will be able to replicate or improve them, ensuring trans-generational equity.

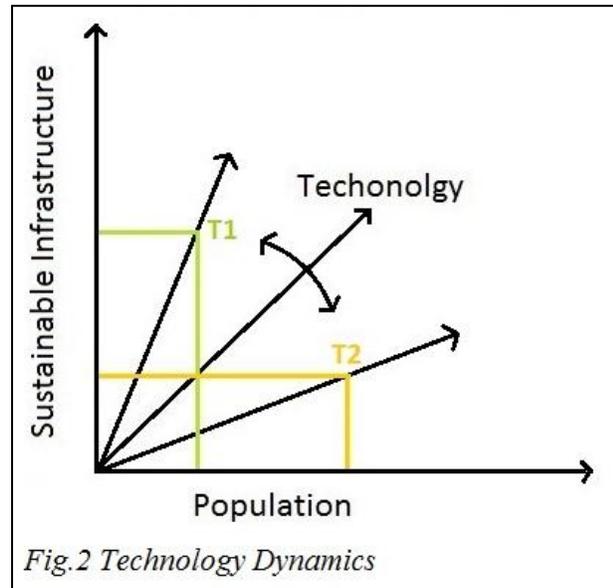
5.1.2 Technology

The more we increase our understanding of technology, the carrying capacity of our planet increases since the processes that generate our wealth can be upgraded, and hence they become more efficient.

The larger the amount of individuals, with certain amount of knowledge working towards solving a problem, the better the chances there will be to solve it. If we upscale this assumption, the larger the population we can sustain in our planet using sustainable

infrastructure, the higher the probability we have to increase technology and solve our problems.

The interaction between these factors and how they work together to produce technological availability for a given population, is shown in *Fig. 2*. When you have a given level of technology at society's disposal, the number of citizens in society and the sustainable infrastructure you can provide them, will determine the availability of technology for the population. As shown on T1 in *Fig. 2*, when you have certain amount of sustainable infrastructure at your disposal



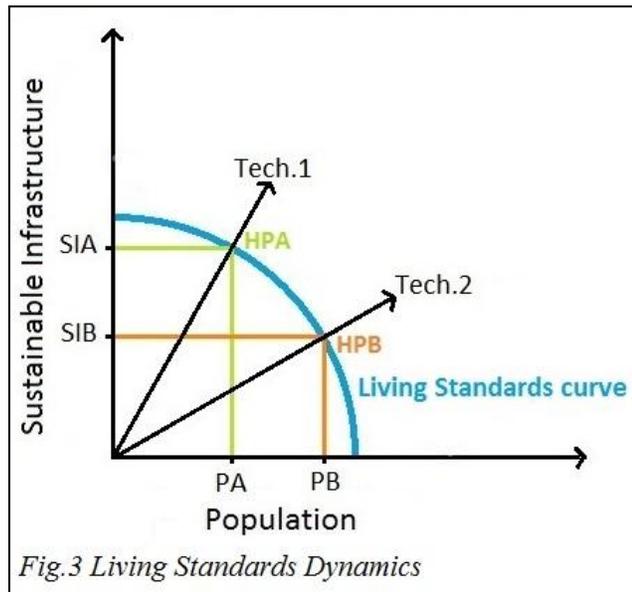
and a given level of technology, a smaller population will increase the availability of technology and sustainable infrastructure. When this occurs, the line representing the technological availability to society becomes steeper. The opposite occurs when you have a larger population. The sustainable infrastructure and level of technological availability you can provide are reduced (T2 *Fig.2*). Then the inclination on the technology line is less steep and more horizontal.

5.1.3 Living Standards

Improving the living standards of the citizens in society is of great importance to generate knowledge at faster rates. If people have decent living standards, they don't have to spend their time and effort worrying about where their next meal is going to come from or how are they going to pay their rent. As Maynard Keynes proposed, if people wouldn't have to worry about money to meet their basic needs, they could dedicate their time to nobler causes like science and arts. If more people are dedicated to these causes, we will increase our chances of generating new knowledge.

In a given society, the interactions between the technological availability, the size of the population and the amount of sustainable infrastructure you can provide, will create the boundaries of the living standards curve. In other words, this curve determines the conditions you provide your citizens to achieve human progress.

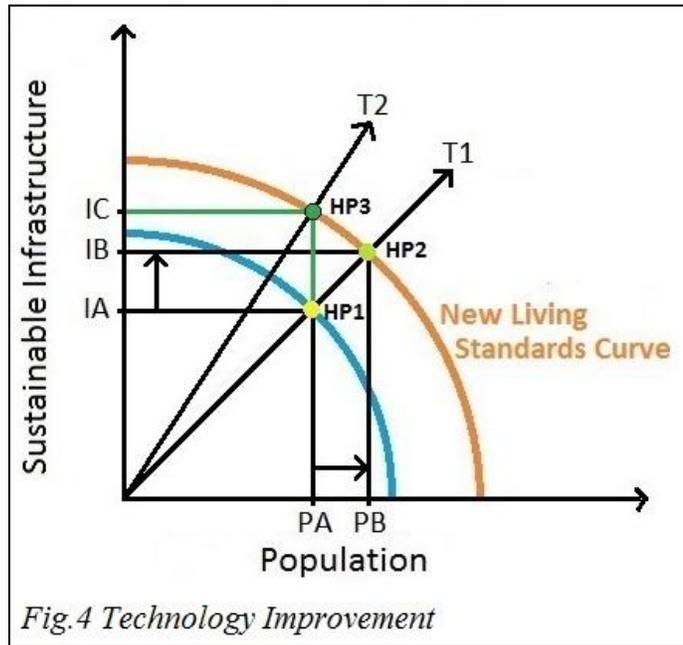
As shown on *Fig.3*, when you have a smaller number of citizens (PA), you can provide them with higher levels of Sustainable Infrastructure (SIA) and better technology availability (Tech.1). The Living Standards in this situation will provide society with the conditions to generate “A” amounts of human progress (HPA). On the other hand, if you have a larger amount of citizens, the levels of sustainable infrastructure and technology availability will be lower. This situation will provide different living standards and in this scenario, you will achieve “B” amounts of human progress (HPB).



5.1.4 Technology Improvement

Human progress generates new knowledge and new knowledge generates new technology. When there are technological breakthroughs and technology is improved, the efficiency in the use of resources will also be improved. This will cause an increase in the capacity to generate sustainable infrastructure and an update in the living standards curve will be possible. When this happens, you have several options to shift the economy in different directions and produce new ways for generating human progress.

As seen in *Fig. 4*, when technology is improved, the Living Standards curve moves to the right in the population axis, and upwards in the sustainable infrastructure axis. This gives you the possibility to increase the population in a given society (from PA to PB), without changing neither their access to Sustainable Infrastructure (from IA to IB) nor their Living Standards. This event is represented by the transition from point HP1 to HP2.



Another option to follow when improvements in technology occur and a new living standards curve is possible, is maintaining the same population but this time increase their access to Sustainable Infrastructure (move from IA to IC on *Fig. 4*), increase the technological availability (move from T1 to T2) and generate better Living Standards for them. This event is represented by the transition from point HP1 to HP3, showing a different path to achieve human progress.

By analyzing the results of the interactions between the 4 main pillars of this economic model (Sustainable Infrastructure, Technology, Population and Living Standards), you will realize there are virtually endless paths to produce human progress that a given Living Standards curve can generate. Some nations may achieve higher progress rates with larger populations and moderate amounts of sustainable infrastructure. Others may achieve higher progress rates by increasing their sustainable infrastructure when technological breakthroughs occur and the population is stable.

5.1.5 A New Economic Indicator

In my opinion, measuring the mental health of the citizens in society would be a real indicator of human progress and the success of an economy. If we measure how many

citizens in society are mentally unhealthy, we can assume that the rest of them are fairly healthy. This would mean that the living standards that a government is providing for its citizens are appropriate. To measure the mental health of society I propose that we should count the amount of people in society that are affected by mental illnesses that arise as consequence of their living standards. To be more specific, I'm talking about counting all the people being treated for chronic stress, burnouts, anxiety, depression and drug addictions (including pharmaceuticals used to treat stress, anxiety, depression, alcoholism and illegal drugs). Then you calculate the percent of people in society that are affected by these mental illnesses. In this way you can get a real indicator of the ultimate outcome that the economy is having on its citizens.

Because it doesn't depend on people producing and consuming an ever-increasing amount of goods, this way of measuring the economic success of a country is much more aligned with achieving sustainable development strategies and at the same time, it can be applied to any nation. If the citizens of society are enjoying good mental health, their economy will be doing well regardless the amount of goods it is producing and selling.

Having these kind of ideas in mind, we must reshape our economies and focus them towards producing knowledge, social value and long term prosperity. To me these are our most valuable assets.

5.2 Knowledge Meritocracy & Progressive Nations

Throughout my study I realized that common citizens, local governments and communities, play a key role in governance when changes are needed to improve the wellbeing of our societies. I also found out that good governance must govern by consent, governs sustainably, protects human rights and allows specialization (Conor & Wilburn 2014). It is also important to consider that in order to improve governance, we should responsibly empower our citizenry and give local governments a higher degree of autonomy to act in time when facing all sorts of challenges. On the other hand, the more you concentrate political power in a small number of decision makers, the easier it becomes for corporate interests to influence governmental policies.

Knowledge Democracy is a governance proposal that seeks to relieve our current policy makers from the financial pressures lobbyists exercise on them at the moment they have to implement or create laws and projects that will shape the future of our societies. This proposal achieves this goal by distributing the decision making power to every citizen that will be affected by these laws and projects.

A nation that is governed by Knowledge Meritocracy will become a Progressive Nation, where **free access to all levels of education is a basic human right** for all citizens willing to educate themselves and become empowered stakeholder citizens. Nations will be divided into Municipal, Regional and National Governments. When a National, Regional or Municipal government wants to implement any kind of project, they must present the project and all its development details (financial, social, structural, environmental, etc...) to all the stakeholder citizens whose life may be affected by the project. Then all these citizens will have the opportunity to approve or reject the project by voting through an online Civic Network, which functioning mechanisms are explained in detail later. The amount of decision making power that each one of the stakeholder citizens will have, will depend on their educational level and working experience in a given area of expertise. Citizens that possess a superior level educational degree (bachelor, masters, PhD, etc...) or more than 9 years work experience in certain specialty area related to a project, will have a stronger “voice” in the voting process.

For example, let us imagine that the municipal government has a project that consists in building a cultural center to promote culture and arts in the area. For this project to be approved by the stakeholder citizens in that municipal area, the municipality will have to present and upload to the Civic Network, a highly detailed report of the project’s development plan and the benefits they believe the project will have on the municipal area. Then all the citizens living in the municipal zone will be able to approve or reject the project through the Civic Network, which functioning mechanisms are explained in detail in the following pages.

5.2.1 Areas of expertise and the decision making process

In this governance system all laws, projects, jobs and study degrees will be related to certain extent, to at least one main category. For example, let us define these main categories into Business Administration, Agriculture, Finances, Economy, Natural Resources, Environment, Sustainability, Social Sciences, Biology, Health, Education, Culture & Arts, Engineering, Technology, Laws, Foreign Affairs and Urban Development. Let us suppose that into these categories, we can fit all the different superior level studies and any given law or project proposed by the government. If we keep using our previous example of the cultural center the municipal government wants to build, this project would belong to the categories of Social Sciences, Economy, Culture & Arts, Education and Urban Development. Then all the stakeholder citizens will be able to vote in favor or against this project, but those that possess a superior education degree or work experience related to any of these 5 categories (Social Sciences, Economy, Culture & Arts, Education and Urban Development), will have a higher “voting strength.”

An example at a larger scale, involving two regional governments, would be a project for building a bridge to connect 2 regions that are divided by a large river. In this case, let us say that this project belongs to the categories of Economy, Urban Development, Environment, Sustainability, and Engineering. Then all the citizens living in the 2 regions will be able to use their voting points to approve or reject the project.

As an example at an even larger scale, let us imagine that all regional ministers in a nation have agreed upon a law project to raise taxes by 6% to all businesses that have annual profits above 9 million EUR, to generate more financial resources and invest them exclusively in the educational infrastructure of the nation. This project would belong to the categories of Law, Economy, Social Sciences, Education and Finances. Then all the citizens in the nation will be able to vote in favor or against the implementation of the law.

To make sure that a project at a municipal, regional, or national level is truly viable, it will only be approved if 60% or more of the total voting points are in favor of the project. In this way you make sure that the approval of the project is truly representing the voice of the majority of the stakeholders, giving them a sense of responsibility whether the project is a

success or a failure. The period in which the stakeholder citizens will be able to vote for municipal project will be of 3 weeks starting from the day that the municipality uploads the detailed project plan to the Civic Network. For regional projects, the voting period will be of 6 weeks and for national projects, the period will be of 9 weeks.

If a municipal project is rejected, the municipal ministers will have 3 weeks to amend the project taking into account the citizens recommendations, and submit it for a new voting process. If the project is rejected for a second time, there will be a third amendment period of 3 weeks so the project can be presented to the citizens for a third time. If the project is rejected for a third time, it won't be viable. For regional laws or projects the amendment period in case of rejection will be of 6 weeks. For national laws or projects the amendment period will be of 9 weeks. Any project or law that is rejected by 75% or more voting points against it, will be permanently rejected no matter the amendment instance the project is going through.

To ensure diversity and equity in the type of projects that are developed in a municipality or region, every 3 years all stakeholder citizens will be able to vote and choose 3 development areas in which they believe their regional and municipal governments should improve and focus their projects for the next 3 years. Then the municipal and regional government should destine at least 60% of their budgets to develop their projects according to the development areas that got most voting points.

5.2.2 Education and Voting Points

All citizens will have at least 1 voting point to use when approving or rejecting any law or project that the government (municipal, regional or at a national level) wants to implement. The difference though, is that citizens with a Bachelor's degree in certain area of expertise, will have 3 voting points to use in the approval or rejection of a project that affects him/her and that is related to his/her area of expertise. A citizen with a Master's degree will have 6 voting points to use when approving or rejecting a project that is related to his/her area of expertise. A citizen that has a PhD (or other type of similar level educational degree) will have 9 voting points to use when approving or rejecting the project. If you have 9 or more

years of working experience in a particular area of expertise (for example social sciences), you will have 3 voting points to use when voting for the project.

The points provided by working experience can be added to the points that are assigned to you by your educational degree. For example, taking into consideration the previous case of the Municipal government wanting to build a cultural center, if a citizen has a bachelor's degree (3 point) in social sciences, that has been working for more than 9 years (3 points) in a job related to any kind of social work and lives in the respective municipality, he/she will have 6 voting points to approve or reject any related project that would affect him/her. The same accumulation of points occurs for citizens with Master's and PhD degrees, meaning that they will be able to accumulate up to 12 voting points in the case of someone that has a PhD or similar degree and 9 or more years of working experience in a particular area.

5.2.3 The Civic Network

What if governments from all over the world that are willing to implement the Knowledge Meritocracy as their governance system, developed a civic online platform that is secure and allows every citizen (based on his/her knowledge on different areas of expertise) to actively participate and vote for every decision that municipal, regional, national and even international governments intend to make? It's been demonstrated that governments that properly involve all stakeholders in their decision making processes are much more successful than those who don't (Newman & Jennings 2008). With the technology we have today and the will of citizens to participate in the decision making processes that concern them, we can shift the role politicians play as decision makers by transforming them into policy proposers.

The Civic Network is an interconnected governmental online platform that contains the information of all citizens addresses, educational degrees and job experience. To build this network, we must gather the previously mentioned data from municipalities, every existing business or company, universities and other official educational institutions. Once we have gathered this information, we can build the online platform. Then you give access to this platform to all the stakeholder citizens, special representatives from educational institutions

(professors and deans) and the elected governmental officials proposing new laws or development projects of any kind.

What is the purpose of creating this? With this information in one interconnected network, we can create a trustworthy tool to build a truly resilient governance system that actively involves all stakeholders in the decision making processes of approving or rejecting new or old laws or national and regional projects (infrastructure, scientific, social, cultural, etc...).

5.2.4 How it works

After you build the online platform you create a profile for every adult citizen in a nation. This profile will be filled with the educational degree of the citizen (high school, college, technician, bachelor, masters, PhD, etc...) and the specialty area to which his/her education belongs (Business Administration, Agriculture, Finances, Economy, Natural Resources, Environment, Sustainability, Social Sciences, Biology, Health, Education, Culture & Arts, Engineering, Construction, Technology, Laws, Foreign Affairs and Urban Development), and his/her working experience and the specialty area to which it belongs (using the same classification as the educational degrees). All this information will be provided and uploaded to the platform, only by an official representative from the educational institution in which the citizen got his/her education degree or the company in which he/she has worked for a determined period of time. This means that when a student graduates from a certain degree, the university will be responsible for uploading his degree information to the Civic Network. The same happens when a citizen has been working for more than 9 years in a company. In this case the company will be responsible for uploading this work accomplishment to the Civic Network.

5.2.5 Civic Duty and the Civic Network App

Every time a citizen accesses the Civic Network website, he/she will be able to access all the laws and projects in which he/she can participate at that moment. These will be listed in the Civic Duty part of the website, organized in order of expiring urgency. This means that the laws and projects which voting periods are going to end sooner, will appear in the upper part of the Civic Duty section. Citizens will also be able to choose the option of being

notified by email every time a law or project in which they are qualified to vote, has been uploaded to the Civic Network. To make the participation process even easier, there will also be a mobile “app” version of the Civic Network. The app will contain the same functionality as the website but you will be notified in your phone every time a law or project that you are qualified to participate in, has been uploaded to the network.

5.2.6 Civic Profiles

The profiles of all elected leaders will be accessible for all citizens and they will be able to see the projects or laws in which the elected official has participated during his entire career as a government official. You will also be able to see how many projects and laws (and its details) in which the official has participated and how many have been approved or rejected, indicating his/her approval rate. This will be of great use when electing governmental officials.

In the Civic Network, the identity of all stakeholder voting citizens will be absolutely private and their personal details like names and address won't be available for anyone. Not even governmental officials will have access to it since the sole purpose of this online platform, is to provide a highly autonomous voting tool that transforms qualified citizens into decision makers.

5.2.7 The Voting Process

When citizens are going through the voting period, they will be able to write an optional comment on the reason why they voted in favor or against a law or project. Citizens will be able to see the amount of voting points that the project has in favor or against before submitting their vote. Citizens will also be able to see which percent of voting points are coming from people with PhD (or similar) degrees, Master's degrees, Bachelor's degrees and 9+ years of working experience. The voter will also be able to read and rate the comments that previous voting citizens wrote after voting for approving or rejecting a project or law. Comments in favor or against with higher ratings, will be shown on the most upper part of the list of comments. In this way, the voter will have at his/her disposal a proper amount of information before making his/her decision on approving or rejecting a

project. To provide complete privacy to the citizens participating in the Civic Network, all comments and votes will be absolutely personal and no information related to their personal identities will be ever shown in the network.

Now that every citizen has a profile that determines the amount of voting points he/she can assign to a law or project of his/her concern, we can effectively implement the voting system of Distributive Meritocracy. The processes, by which projects and laws are approved or rejected through the Civic network, are explained in Fig 5.

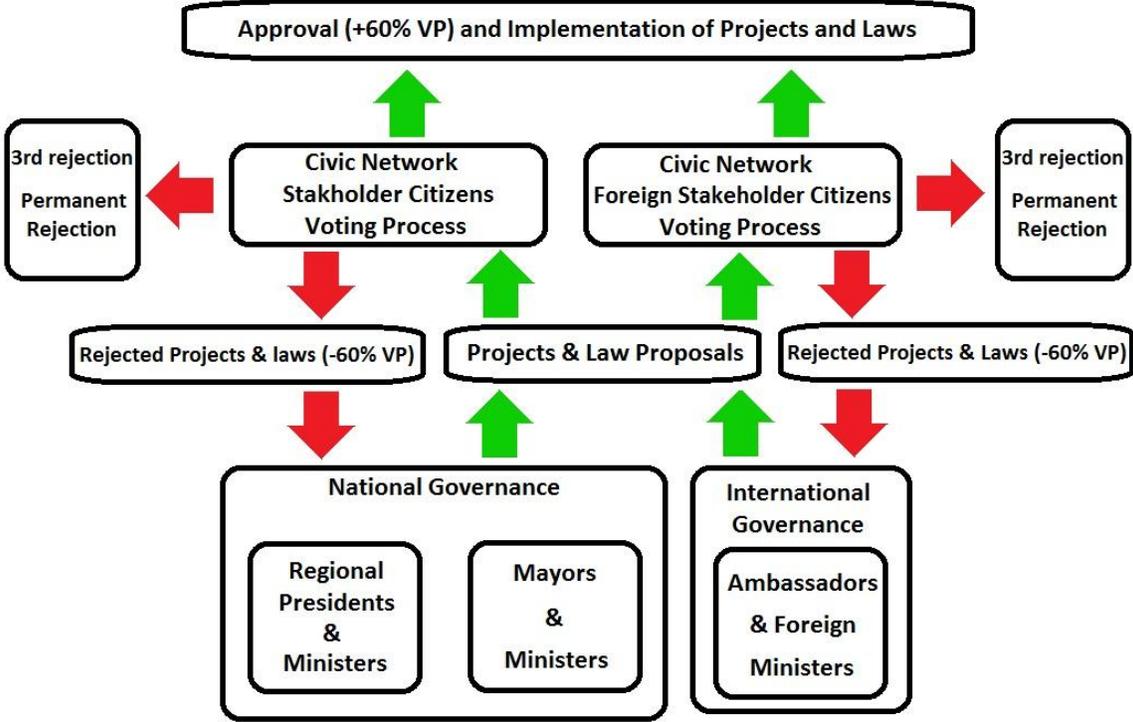


Fig. 5 Projects and Law Implementation Process VP = Voting points

5.2.8 Universities, Regional Presidents and Ministers

In a nation governed by a knowledge meritocratic system, there are no political parties competing with each other over political power and public support. Instead, every region within a nation elects its own Regional Presidents and its Regional Ministers for different areas of governance. These Presidents and Ministers are proposed by the educational institutions of the highest level (universities), and within these institutions, the professors

are the ones that will choose 1 candidate for the regional presidency. Each university in a given region will propose one candidate for the regional presidency and all citizens in the region will participate in a first voting process to choose the 2 candidates with a higher amount of votes. Then a second voting round will be held and the candidate with most votes will be elected as regional president. At the same time, each university will propose one minister for each area of expertise, and the regional president will choose the ones that he/she believes are the most competent for each ministry and publish his/her choices in the Civic Network before the voting process starts.

The regional president and his/her ministers will be in charge of the region for a period of 6 years and he/she could be reelected for one more 6 year period. The Regional Presidents will form the Regional Council that will be in charge of proposing projects and laws at a national level. If a region has less than 3 universities in its territory, the region and its universities will form part of the electoral process of a neighboring region of their choice. The citizens of the region will vote to decide to which neighboring region they want to belong to.

5.2.9 Mayors and Municipal Ministers

This same process occurs for electing the Mayors in charge of the different municipalities. Each university in a region and its professors will choose a Mayor for every municipality in that region. The Mayor will choose his/her team of municipal ministers from a list of ministers provided by the professors in each university and publish it in the Civic Network. Afterwards, the citizens living in that municipality will vote in a first round to choose the 2 candidates with the larger amount of votes. Then on the second round the citizens from the municipality will elect the Mayor out of these 2 candidates and he/she will be in charge of the municipality for 6 years.

After the first 3 years of duty, Mayors and Regional Presidents will need to be confirmed by a voting process in which the citizens of their municipality or region, will vote for (or against) their permanence. Elected leaders will only be removed from duty if after 3 years, they obtain 60% or more votes against them.

5.2.10 Professors and the Dean

The professors and the dean in universities also are subjects to an electoral process. Every student that graduates from any degree, has the right to vote in favor or against the permanence of the professors that taught him/her any course(s). If a professor has more than 60% of votes against him after 3 years of accumulated student votes, he must be replaced by someone chosen by the dean of the university. The same happens with the dean of the university, but the replacement decision and the accumulation of votes is done for a period of 6 years. The voters for the permanence or replacement of the dean are the professors teaching in that university. The votes of students and professors are completely private and the votes are submitted through the Civic Network. If the accumulated votes after 6 years is 60% or higher against the dean, the dean is replaced. If after 6 years the dean has 60% or more votes in favor he/she will be reelected for a maximum period of 6 more years.

When a new dean is required, the professors in the university will choose 2 professors to become candidates for the dean position. Then the professors will vote between the 2 candidates with most votes and the one with most support will be elected. If a dean has 70% of votes against him/her after a period of 3 years, he will be replaced by the dean election process. Regarding the professors, if a professor has 70% of votes against him after a period of 1 year, he shall also be replaced by a professor chosen by the dean.

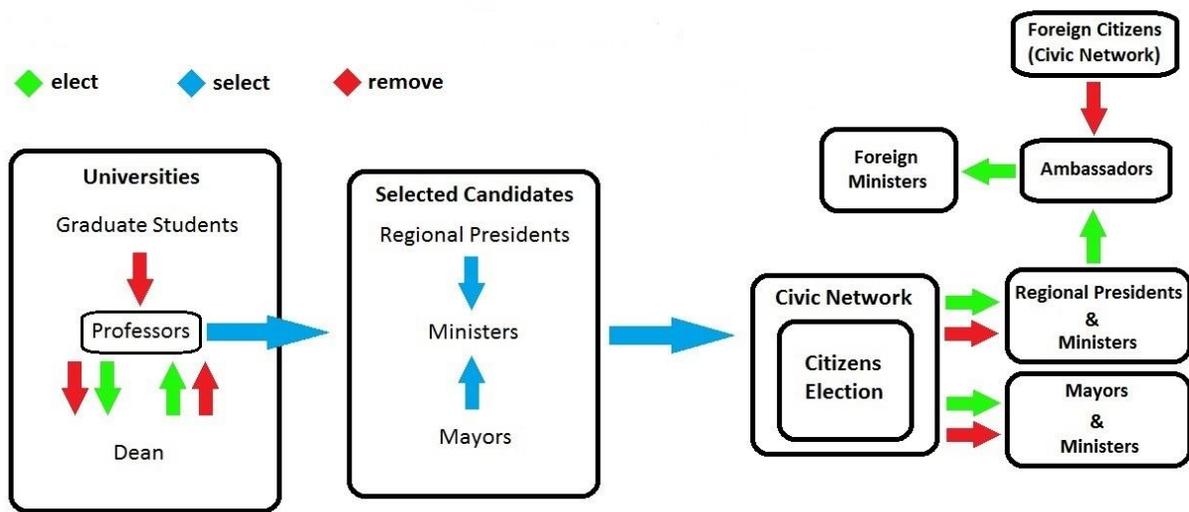


Fig. 6 The Electing Process

5.2.11 Electoral Campaigns

In the Progressive Nations all sorts of electoral campaigns will be prohibited by law. Candidates to Mayors and Regional Presidents (with their respective ministers) will only be allowed to upload to the Civic Network, a document containing the details of the development projects and law proposals that he/she intends to implement during his/her governing period. Candidates will also be able to upload a video (9 minutes max) to compliment the description and arguments for the projects and laws they want to implement. Citizens will be able to comment on each candidate proposals in a comment section that will be available to all citizens. Each comment will show the level of education or work experience from the person that posted it and the amount of “approvals” that the comment has received from other citizens, but will never show any of citizen’s personal details. In this way, citizens will choose their leaders according to their success rate (available at the candidate’s profile in the Civic Network) and the characteristics of their governance proposals. Thanks to this system, candidates won’t have to worry about gathering fortunes to finance their electoral campaigns. They will be chosen solely according to the “quality” of their governance proposals and their historic performance in their previous public or private roles.

5.2.12 Ambassadors and Foreign Ministers

Ambassadors for the progressive nations will be selected by the regional presidents in a progressive nation. The larger the amount of citizens living in a region, the regional president of that region will have to choose a proportionally larger amount of ambassadors for the foreign embassies in other progressive nations. The ambassador will then select his team of foreign ministers and will carry his/her duty for a period of 6 years and will be allowed to be reelected once. After the first 3 years of duty, the ambassador will need to be confirmed by a voting process in which the regional ministers from the foreign progressive nation, will vote for (or against) the permanence of the ambassador. An ambassador and his/her team will only be removed from duty if after 3 years, they obtain 60% or more votes against them. If the ambassador is removed from duty, the regional president that elected him/her will have to choose a new ambassador for that country.

The main mission of the ambassador and his/her foreign ministers will be to implement Sustainable Development Aid projects on the Progressive Nations that belong to the less developed third. These projects will be mainly focused on improving access to shelter, health services, food, clean water supply and education. When needed, different embassies will be able to join their efforts in common projects. In this way, they will be able to combine their budgets and expertise to accomplish and implement all sorts of sustainable development projects. Through the interconnected Civic Network, these projects will have to be approved by the stakeholder citizens of the foreign nation, using the same mechanisms described previously for regional and municipal projects.

Ambassadors working in the most developed 2 thirds of the Progressive Nations, won't be in charge of implementing development projects and hence, they won't have foreign ministers working with them. The role of the ambassador and embassies in this case, will be the same as they currently perform today.

5.2.13 Accountable Leaders

Regional Presidents, Municipal Presidents, Ambassadors and their respective Ministers will have the obligation to implement all their projects according to the project proposals that they submitted to the Civic Network when they were elected. Deliberately failing to do so, will be considered fraud against the state and the people involved will be penalized without exceptions or privileges, by the same laws that would apply to common citizens. Every two years, Regional Presidents, Ambassadors and Mayors, will be required to implement a minimum amount of laws and projects. Failing to do so will reveal that they are not capable of creating laws and projects for the benefit of the citizenry and they will be removed from their duties along with their ministers. They will then be replaced by new elections.

5.2.14 The Sustainable Development Aid Budget

The progressive nations implementing the Knowledge Meritocratic governance system will be categorized in three groups depending on the level of sustainable infrastructure that they can provide their citizens. As a law of the Progressive Nations, the most developed third of the progressive nations will destine 6% of their own annual infrastructure budgets to

implement sustainable development aid projects in the progressive nations that belong to the most undeveloped third. The middle third will destine 3% of their own annual infrastructure budgets to finance projects in progressive nations belonging to the most undeveloped third. In this way, we create a constant re-distribution of resources to help the most undeveloped nations to eradicate poverty and provide the conditions for them to progress.

This budget plan will be a big incentive for the leaders of developing and undeveloped nations to implement the distributive meritocratic governance system and become Progressive Nations. This will provide them with the opportunity to develop and strengthen their cultures and economies. With time, all nations implementing this governance system will have similar living standards without losing their cultural heritage. By reducing inequality, preserving cultural diversity and encouraging people to educate themselves so they can become empowered citizens, we will build sustainable, resilient, peaceful and interconnected society that will direct our planet towards achieving unprecedented long term prosperity.

5.3 Knowledge Meritocracy & Climate Change

Although the equitable distribution of the wealth that is generated by society is key to create a sustainable future for the human race, there is another topic that the Progressive Nations need to address and mostly every human being on this planet is, to certain degree, aware of it. This topic is Climate Change, it represents today's biggest threat to the future prosperity of life in our planet and our current governance systems, have demonstrated that they are not up to the task of solving it.

When the global scientific community reaches a general consensus regarding any threats that may affect the future of humanity or life in general in our planet, a general consensus of the measures needed to affront the problem must also be reached. Once this is accomplished, the Progressive Nations (nations that are governed by Knowledge Meritocracy) will submit the consensus to a voting process of rejection or approval. In this voting process all citizens that have knowledge and experience regarding the concerning

topic, will use their respective voting points to decide if the consensus is valid or not. If it is not validated, a new general consensus must be reached and presented for a new voting process until it is approved by the involved citizenry.

If the consensus is validated, it automatically becomes a law to which all Progressive Nations will have to inevitably adapt and help each other to do so through the Sustainable Development Aid Budget. Once the law is implemented, municipal and regional governments will have one year to develop their strategies to implement the new law. These strategies will consist of tri-annual targets that will progressively implement the law until it is completely instituted. All governmental leaders (regional and municipal) that fail to achieve their targets, will be automatically removed from their office and will be replaced by the respective election process according to their governmental positions.

Let us hypothetically take the case of climate change and set the goals of keeping the global average temperatures from increasing more than 2°C (compared to pre-industrial levels). To do so, let us imagine that developed Progressive Nations will have to produce 100% of its energetic supply with renewable sources of energy by 2030 and developing Progressive Nations, should reach this goal by 2040 with the help of the Sustainable Development Aid Budget.

Once the majority of the global scientific community agrees that the main cause of climate change is human activity and the severe long term consequences that it will inflict on our planet, they will have to prepare a detailed report about the topic. Afterwards, the commitment towards the implementation of the strategies (transitioning to renewable sources of energy by 2030 and 2040 respectively), will be submitted to a voting process where all Progressive Nations will participate. In this voting process, all citizens that have experience regarding any kind of engineering related to energy supply, urban development, environmental sciences and social sciences, will be able to use their respective voting points in the Civic Network. Then the goal will be approved or rejected. If the goal is approved (50+% of the total voting points in favor) it will immediately become law and the regional and municipal leaders, will have a period of one year to prepare their tri-annual strategies towards achieving this goal. The strategies will be developed and implemented

regionally. Municipal leaders will have to work hand in hand with regional leaders to succeed. Thanks to the implementation of this mechanism, every region and municipality is going to be responsible for reaching their own targets, which as mentioned previously during my study, greatly increases the likelihood of succeeding.

6 Discussion

6.1 Resilient Governance

As I learned during my research regarding climate change governance, money and politics can be a bad combination. The fossil fuel industry and its armies of lobbyists who's mission is influencing politics in favor of the corporations they represent, have put our civilization and life in our planet as we know it, into a sort of climate "dead-lock" from which we haven't been able to break free. On the other hand, the global coalitions like the COP (Conference of the Parties) and the UNFCCC (United Nations Framework Convention on Climate Change) that have been formed to solve this issue, are highly bureaucratic and complex, and have failed to convince national leaders of implementing the necessary policies needed to keep climate change within safe limits.

Most of the progress that has been achieved until today, has been thanks to local governments (regional & municipal), grassroots movements, the private sector, NGOs, non-profit organizations and an actively involved citizenry. This made me realize that bottom-up pressure is much more effective when actions are needed to solve issues that our leaders are unable solve because of a lack of political will. For this reason and thanks to the technology we have today, I decided to use "liquid democracy" to transfer decision making power to every citizen that is properly qualified to exercise it.

The result was the creation of Knowledge Meritocracy. As mentioned in the Results chapter, this governance system uses technology to empower citizens that have gathered enough knowledge through their education and work experience. Although using education as a tool of political empowerment for citizens could cause the monopolization or distortion of education to promote specific interests and agendas, if you make all levels of education a basic human right and give free access to everyone, you can greatly diminish the

possibilities of this to happen. Another issue to take into account would be the cyber security of an online civic platform. Unless you develop the technology that makes this platform completely secure against hackers (like block-chain technology seems to be doing), it could be a big risks for governments to implement it.

On the positive side of my proposal, by empowering a large amount of citizens you make the governance system very resilient. When doing this, you are making sure that governments work in benefit of public interests and not wealthy minorities and corporations. I recommend you to analyze this from the following perspective; it is much easier for corporate lobbyists to exercise pressure on a few decision making politicians to implement their corporate agendas, than to lobby a legion of voting citizens from an entire nation, region or municipality. Even if they tried to lobby all voting citizens, the financial costs for the corporations would be too high to make lobbying profitable. Thanks to this mechanism, public opinion would be the strongest force in a government and only laws and projects that are aligned with the public interest would be approved and implemented. Isn't this exactly what governments are for?

6.2 Sustainable Economy

As mentioned throughout this thesis, some of the biggest problems our modern economies have today are on one hand, that its prosperity indicators like employment, GDP and inflation, are not well aligned with creating real social value nor takes into consideration the well being of societies in the long term. On the other hand, the highly complex financial instruments that have arise during the past decades, seem to have concentrated most of the wealth that is generated by our economies, in a very small group of people and corporations. If you add to these tendencies the fact that in the coming years automation will start replacing people and the tasks they've been carrying out, the future does not look very bright.

For these reasons I decided to create the foundations for a new way of evaluating the "health" of our economies and make them work towards generating the conditions to produce knowledge and long term social wellbeing, instead of mere financial wealth. To do so I propose that Technology will produce Sustainable Infrastructure for a given Population

of citizens and the interaction between these factors, will give birth to the Living Standards Curve. This curve will not be measured by financial or material wealth but by the mental health of the Population. In this way, economic growth won't depend on producing a constantly increasing amount of products, services and trying to create a demand for them, but on creating conditions that produce good mental health in the citizenry. The purpose of this is to create a sustainable economy that is less materialistic, creates less waste and at the same time provides the conditions that societies need to reach their full potential for generating human progress.

The downside to my proposal is that currently most cultures on the planet, fueled by huge industries of propaganda and advertising, value and see citizens as mere consumers. Whether we like to admit it or not, our societies have had this assumption in their foundations for generations and hence, changing this point of view represents a challenge that will require a complete paradigm shift in the way we think and behave. The difficult cultural transition into a less materialistic and sustainable version of "the economy" is an effort that we all have to go through in the present, to provide prosperity for the generations of the future.

7 Literature

Gar Alperovitz, The Political-Economic Foundations of a Sustainable System, State of the World 2014, Governing for Sustainability

Petra Bartosiewicz and Marissa Miley, The Too-Polite Revolution: Understanding the Failure to Pass U.S. Climate Legislation, State of the World 2014, Governing for Sustainability

Peter G. Brown and Jeremy J. Schmidt, Living in the Anthropocene: Business as Usual or Compassionate Retreat? State of the World 2014, Governing for Sustainability

Damian Carrington (10/10/2017), Fossil fuels win billions in public money after Paris climate deal, angry campaigners claim, The Guardian
https://www.theguardian.com/environment/2017/oct/12/fossil-fuels-win-billions-in-public-money-after-paris-climate-deal-angry-campaigners-claim?CMP=Share_iOSApp_Other
(accessed on 08/11/2017)

Patrick Caughill (29/12/2017), Solar Energy Prices Continue to Plunge While Coal Prices Climb Higher, Futurism News <https://futurism.com/solar-energy-prices-continue-plunge-coal-prices-climb-higher/> (accessed on 01/12/2017)

Ben Chapman (21/06/2017), Finnish citizens given universal basic income report lower stress levels and greater incentive to work, Independent News
<http://www.independent.co.uk/news/business/news/finland-universal-basic-income-lower-stress-better-motivation-work-wages-salary-a7800741.html> (accessed on 26/10/2017)

D. Conor Seyle and Matthew Wilburn King, Understanding Governance, State of the World 2014, Governing for Sustainability.

Dom Galeon (17/10/2017), A U.S. Political Candidate Just Pledged to Make All Decisions via an App Poll, Futurism News <https://futurism.com/a-u-s-political-candidate-just-pledged-to-make-all-decisions-via-an-app-poll/> (accessed on 21/10/2017)

Dom Galeon (07/11/2017), The US Is Officially the Only Country in the World Not in the Paris Climate Agreement, Futurism News <https://futurism.com/us-officially-only-country-world-paris-climate-agreement/> (accessed on 17/10/2017)

John M. Gowdy, Governance, Sustainability and Evolution, State of the World 2014, Governing for Sustainability

Josh Jones (2016), Why Socrates Hated Democracies: An Animated Case for Why Self-Government Requires Wisdom & Education, Open Culture, <http://www.openculture.com/2016/11/why-socrates-hated-democracies-an-animated-case-for-why-self-government-requires-wisdom-education.html> (accessed on 28/09/2017)

Martin Kirk (2017), Capitalism's excesses belong in the dustbin of history. What's next is up to us, The Guardian, https://www.theguardian.com/commentisfree/2017/aug/01/capitalism-excesses-dustbin-history?CMP=share_btn_fb (accessed on 01/10/2017)

Ida Kubiszewski et al. (2013), Beyond GDP: Measuring and achieving Global Genuine Progress, Ecological Economics, Vol. 93

Henrietta Moore (13/10/2017), Forget a basic income, here's how Universal Basic Services could fund houses and transport for all. Prospect Magazine <https://www.prospectmagazine.co.uk/politics/forget-a-basic-income-heres-how-universal-basic-services-could-fund-housing-and-transport-for-all> (accessed on 22/10/2017)

Peter Newman and Isabella Jennings (2008), Empowerment and Participation, Cities as Sustainable Ecosystems: Principles and Practices

David W. Orr, Foreword, State of the World 2014, Governing for Sustainability

Thomas I. Palley, Making Finance Serve the Real Economy, State of the World 2014, Governing for Sustainability

Michael Renner and Tom Prugh, Failing Governance, Unsustainable Planet, State of the World 2014, Governing for Sustainability

Eleanor Ross (19 August 2016), Apps for democracy-open data and the future of politics, The Guardian https://www.theguardian.com/media-network/2016/aug/19/apps-for-democracy-open-data-and-the-future-of-politics?CMP=Share_iOSApp_Other (accessed on 21/10/2017)

David E. Sanger and Jane Perlez (01/06/2017), Trump Hands the Chinese a Gift: The Chance for Global Leadership, The New York Times <https://www.nytimes.com/2017/06/01/us/politics/climate-accord-trump-china-global-leadership.html?action=click&contentCollection=Climate&module=RelatedCoverage®ion=Marginalia&pgtype=article> (accessed on 09/11/2017)

Rob Schmits (23/10/2017), China Shuts Down Tens of Thousands of Factories in Unprecedented Pollution Crackdown, NPR News

<https://www.npr.org/sections/parallels/2017/10/23/559009961/china-shuts-down-tens-of-thousands-of-factories-in-unprecedented-pollution-crack> (accessed on 10/11/2017)

Michael Slezak (07/06/2017), China cementing global dominance of renewable energy and technology, The Guardian <https://www.theguardian.com/environment/2017/jan/06/china-cementing-global-dominance-of-renewable-energy-and-technology> (accessed on 10/11/2017)

Noah Smith (20/09/2017), Why Workers are losing to Capitalists, Bloomberg View <https://www.bloomberg.com/view/articles/2017-09-20/why-workers-are-losing-to-capitalists> (accessed on 22/10/2017)

Gino Van Begin (30/10/2017), It's time for new climate governance – from below, Climate Home News <http://www.climatechangenews.com/2017/10/30/time-new-climate-governance/> (accessed on 11/11/2017)

Chris Williams and Fred Magdoff (2017), Capitalist Economies Create Waste, Not Social Value, Truth Out <http://www.truth-out.org/opinion/item/41639-capitalist-economies-create-waste-not-social-value> (accessed on 01/10/2017)

Monika Zimmermann, How Local Governments Have Become a Factor in Global Sustainability, State of the World 2014, Governing for Sustainability