

A Position Paper from the Task Force on Environmental & Economic Justice For the Delegates of the Society of Jesus, Higher Education Directorate 2018 Meeting in Bilbao, Spain

Overview of the issue and the Charge of this Task Force

The Church under Pope Francis has taken a leadership role in promoting economic and environmental justice. *Laudato Si'* has captured the respect of the world's leaders and the enthusiastic support of those interested in addressing our growing economic inequality within and between nations. By linking the environmental crisis to its roots in economic forces, and calling for an integral environmental humanism, the Church has pointed to economic, social, political and psychological changes that are necessary if we are to survive in our "common home". How can all of our institutions take a leadership role in addressing these two challenges, which amount to different sides of the same coin? Michael J. Garanzini, S.J., PhD

An Expansion on the Context, Scope and Nature of the Challenge

Context: A brief history of the Earth, the evolution of biodiversity, and the late arrival of humans

Scientists understand that the first living organism on earth, a prokaryotic bacterial life form, came into existence 4.1 billion years ago. From here, all other higher forms of life eventually arose. These early life forms started out as ocean bacteria which, over 600 million years, evolved the complex molecular machinery of photosynthesis, allowing the newly evolved cyanobacteria to capture solar energy to support their own metabolism. This phenomenal miracle of evolution changed our atmosphere making it 20% oxygen, and gave rise to the evolution of larger and more complex life forms including



new species of life on land. By 360 million years ago the process of evolution had created complex, diverse forest ecosystems all over the planet. The tree of life continued to branch to form all kinds of prokaryotes and fungi as well as higher forms of life like reptiles, flowering plants and mammals. The functional role of each new and unique species filled an important ecological niche in the fantastically complex web of life. Together, all species in the web support the balance of the entirety of the biosphere. Some species are food to others, some provide physical habitat, others decompose the waste of plants and animals, some convert CO₂ to oxygen, others convert oxygen to CO₂. The complex web of life that developed over billions of years also supports and helps to regulate the major planetary systems such as the hydrological cycle, and the biogeochemical cycling of elements like carbon, nitrogen, phosphorus and sulfur, and stabilizes climate cycles. This is what we think Pope Francis meant by an “integral ecology”. Everything is connected, everything is interdependent in the remarkably intricate design of nature.

Humans did not appear on the evolutionary tree until very, very late, the last minutes in the timeline. Our ancestral group, the primates, first appeared 65 million years ago, about the same time as when dinosaurs went extinct. But not until around 6 million years ago did the evolutionary branch from which humans eventually arose, split off the African apes. Modern humans of the genus *Homo* first appeared about 2.8 million years ago in Africa. We recently discovered that the most highly evolved species of *Homo*, our species, *Homo sapiens* is only 300,000 years old. Between the time when the first life forms appeared on Earth, to the arrival of *Homo sapiens*, the tree of life had evolved millions of fascinating,

beautiful and diverse forms of life, each with an integral role in the web of life, which supports human life and contributes to the stability of Earth's systems.

The biosphere we know and enjoy today is a 4 billion-years' journey, an odyssey of growth, diversification and evolution with built-in natural checks and balances such as predation, disease, resource scarcity, natural disasters, natural extinction, and reproductive constraints. Scientists believe today there are over 12 million different species of higher organisms (and many more prokaryotes), and yet we've only discovered, studied and named about 2 million of them, and only 200,000 of these are said to be well-known.

Homo sapiens invented agriculture in the Fertile Crescent at the beginning of the Holocene period, around 10,000 years ago which is almost 2.8 million years after humans were first on the planet. Importantly, all of our agricultural development took place during the Holocene in a steady and stable climate. Reliable sources of food allowed humans to build cities and civilizations, and allowed people to diversify into specializations.

The advent of very recent agricultural technologies, namely the capture of atmospheric nitrogen gas and conversion to ammonia fertilizer, and the discovery of coal to fuel the internal combustion engine, transformed agricultural production. Cheap fertilizer increased crop yield significantly, while the newly discovered access to a large amount of stored fossil fuel energy multiplied the capacity of humans to do work. These two things together, transformed the existence of humans on the planet. The yield of food from a given field was increased over ten fold, and human populations climbed exponentially, aided by developments in health practices which significantly extended life expectancy. At the beginning of primitive agriculture 10,000 years ago, the world population was 1 million people. It

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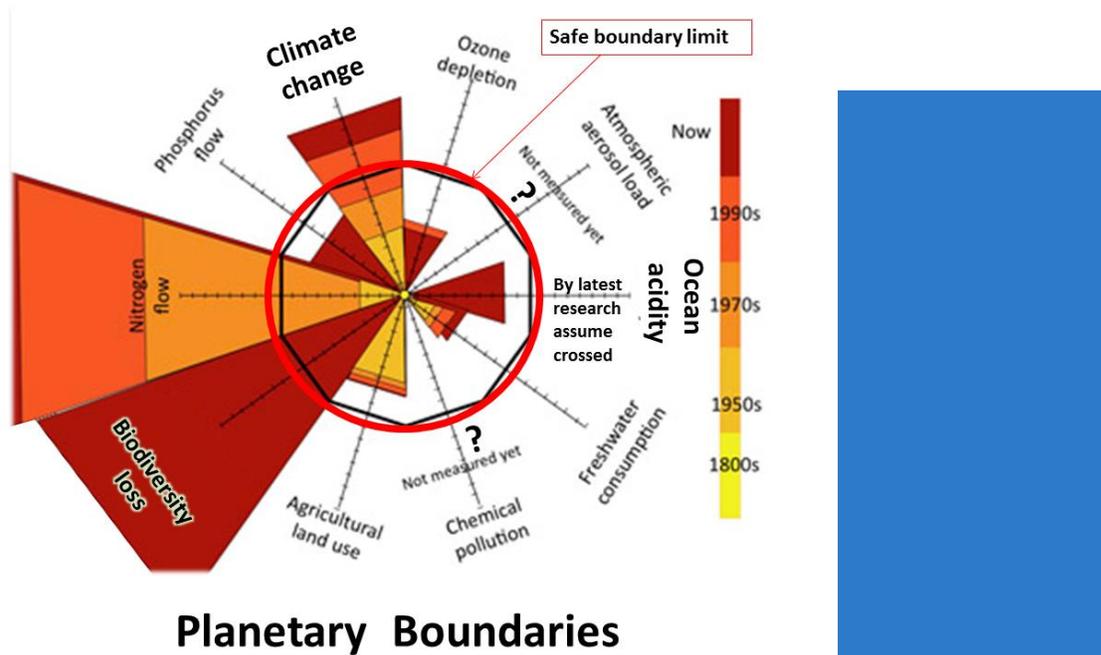
wasn't until Napoleonic times around 1810 that the world population reached 1 billion. Then, in only 120 years (by 1930) during which time we discovered coal and nitrogen fertilizer, we reached our second billion.

Today we have 7.5 billion people on the planet and we are growing at an unprecedented and unsustainable rate of 225,000 new people per day, heading for 9-10 billion by 2050. We have experienced this alarming population explosion in just the last 100 years of the entire 2.8 million year history of humans on earth. This, compounded with our increasing ability to use energy and other resources

through technological developments, and our unstoppable desire for material riches, has driven us to exceed nature's natural checks and balances by a long shot, and the biosphere which supports us is greatly suffering as a result. We humans are clearly overwhelming the earth; our deforestation, relentless development of wetlands and grasslands, and extensive and unsustainable agricultural practices are crowding out whole ecosystems and driving species to extinction at an unprecedented rate. Our use of fossil fuels is changing the climate. Consumerism is flooding the planet with accumulated waste, and also with new, potentially harmful materials. All this is transforming the Earth into an unlivable habitat for all of the species in the biosphere, including ourselves. Our domination of Creation and modification of earth and its atmosphere have defined a new epoch; since WWII we have single handedly modified the earth and its systems to such a degree that we are now in a new geologic period, the Anthropocene.

This diagram, termed **Planetary Boundaries** developed by Johan Rockström from the Stockholm Resilience Centre with many scientists and economists from around the world, helps us to understand how much damage we have done, relative to the safe operating space for humans on planet Earth. There are nine major environmental threats to the planet that are being monitored and modeled in this schema. Any amount of mining of natural resources, production of pollution or alteration of the planet that stays within the boundaries of the red circle, is considered to be within the resiliency

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powers of the planet. We can do some deforestation, emit some pollution, extract some water, fossil fuels, and minerals from the land and fish from the oceans within a limit, and the earth will recover. We can see here that for climate change, nitrogen flow and biodiversity loss we have already far exceeded the planet's ability to rebound. We are well beyond the tipping points for these three perturbations, which has greatly destabilized the earth's major planetary systems.

We cannot continue to pollute our air, water and soil and exterminate the biosphere and expect to be able to survive on this planet. We are completely and utterly dependent on the goods and services that are bequeathed to us by the biological diversity on this planet. In addition to providing 100% of our food and over 80% of the world's medicines, the forests, grasslands and oceans grace us with the oxygen we breathe, consume our bodily wastes, regulate the water cycle and stabilize the climate.

Modern Technology, Economic Growth, and Human Growth

In his 1798 *Essay on the Principle of Population*, Economist T.R. Malthus demonstrates the simple principle that human populations grow exponentially, while food production grows at an arithmetic rate. He predicted a future when humans would be too numerous for the earth to support our resource needs. To avoid such a catastrophe, Malthus urged controls on population growth. Technological advances in energy (energy-dense coal replacing horsepower and wood) and fertilizer (nitrogen gas from the atmosphere being converted to cheap ammonia fertilizer) within 50 years of the Malthusian Theory of Population, allowed us to exceed nature's population limits by coaxing more yield out of agricultural land, which in turn supported more humans. Subsequent technological advances in food production, health, transport, industry, etc., in turn, perpetuates the continued growth of the human population. But today with 7.5 billion and growing, and in spite of human ingenuity and constant technological advances, we are running into a wall. We are seeing that resources on our planet are ultimately finite, and that as we deforest our last tropical rain forests, and extract every last resource for the sake of capital and development, there are dire consequences not only to ourselves, but the rest of Creation. Entire ecosystems continue to be plowed down, species are driven to extinction to make way for our kind, and our common atmospheric, geologic and oceanic resources have become open dumping ground for our toxic industrial waste. The poor and indigenous continue to be exploited and left behind with smaller pieces of the pie. In *Laudato Si'* Pope Francis points out that we are leaving the poor to be destitute with inarable land, and water and food insecurities.

The unidirectional economic model of growth is fatally flawed on a planet with finite resources. Our economies are driven by extracting natural resources (mining, deforesting, fishing, harvesting) and exploiting human workers in order to make goods that are mass produced, sold and preferably used lightly so as to perpetuate the cycle of single-use once, disposable and purchase again and again. Think Starbucks' disposable coffee cups in developed nations. In our current economic systems nature is depleted, natural resources dwindle, and trash and toxins pile up. The faster we can push this unidirectional economic model, the more stable we perceive our economies to be. While our planet is dying, we insist on the relentless growth of our capitalist economies, turning a blind eye to the truth that our own children will be unable to thrive. Today we are stealing the future, selling it in the present, and calling it gross domestic product. When what nearly all humans desire is an economy that

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5 is based on healing and restoring the future instead of stealing and exploiting it. As Paul Hawkin so

clearly stated in 2009 "Working for the earth is not a way to get rich, it is a way to be rich".

This does not affect only future generations, but also the current ones. Modern economies are becoming increasingly unequal and unfair. The rich become richer, the poor become poorer and also suffer more from environmental problems. And this in turn exacerbates environmental challenges. Again, ethics, economy and environment are shown to be inextricably linked. As stated in the recent special report [Promotio Justitiae](#) n.121/2016: "Justice in the Global Economy: Building Sustainable and Inclusive Communities" from the Society of Jesus,

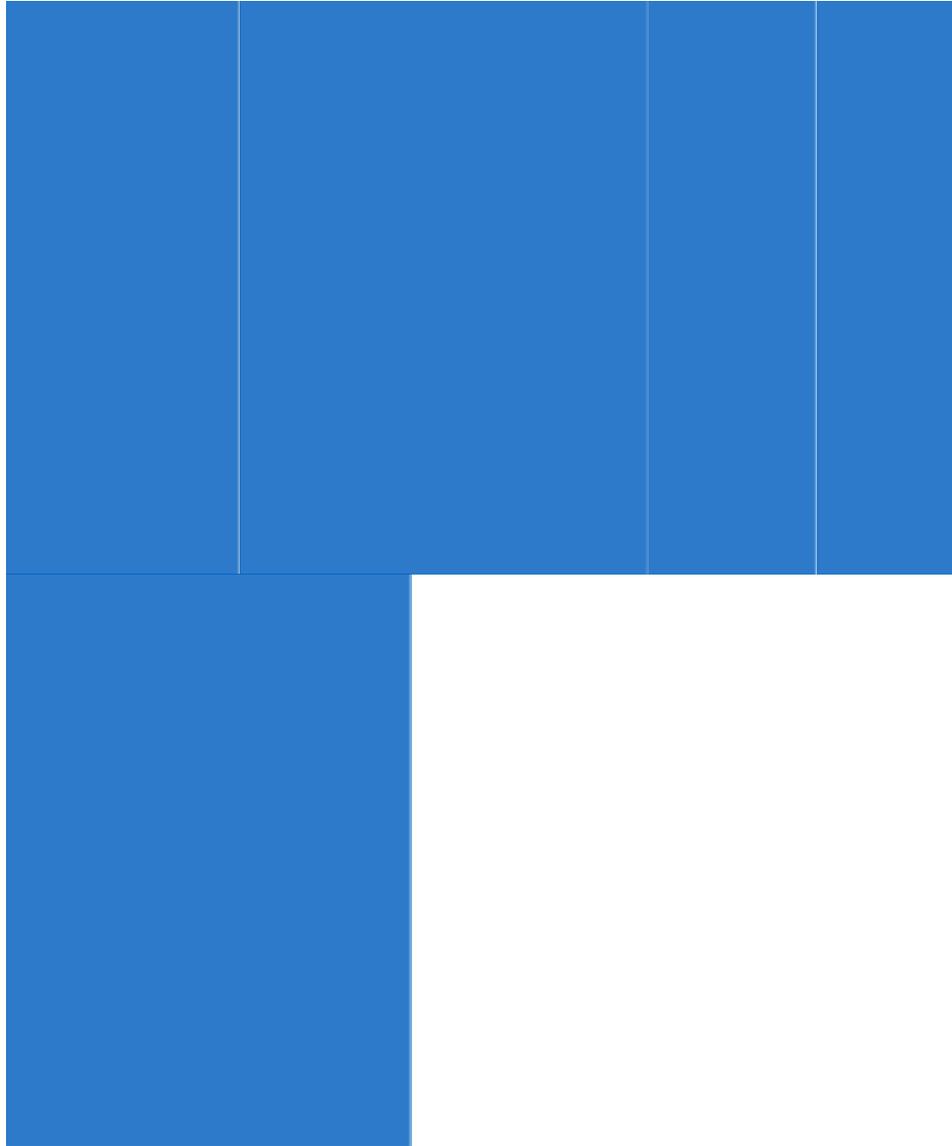
"Poverty undermines the fundamental value and dignity of human life. Inequality, in income, in living standards, access to health care and education, etc., undermines social cohesion and indeed the very fabric of society. Severe inequalities exclude and deprive people of their basic participation in the social order. And, those without access to the goods of this earth too often find themselves engulfed in violence, are uprooted and their displacement only adds to their marginalization. Finally, environmental degradation impoverishes us all, and the poor more acutely".

The health of nature and the stability of earth's systems are in the best interest of all people, regardless of nationality, political party, socioeconomic status, race or

religious beliefs. Climate change and the loss of clean water and biodiversity are not partisan issues, and protecting them is in the best interest of a healthy and stable global economy. Getting off our growth based fossil-fuel economy and shifting to a renewable energy-based, fairer economy is necessary to stabilize the planet and world peace, not the other way around. What the people desire is a clean, healthy, civil, peaceful and just future. Yet the people's voices are not being heard and are not what is driving the globalized economic machine. The multinational corporations have the most powerful lobbying interests in the world, and have influenced the spirit of governance away from the people. The corporatization of national governments is an age-old problem common to countries all over the world; in the name of development, civilization, and foreign investments, most African governments have sold their rivers, forests and land to corporations for exploitation. The practice suggests that the economic survival of the people depends on the destruction of their environment.

Global measures needed for a healthy planet, healthy people, peace and prosperity

Global problems require global leadership and engagement that can guide the changes at local, national and global levels. In 2015 world leaders came together at the United Nations and adopted 17 [Sustainable Development Goals](#) as the organizing principles for a way forward for sustainable, just global development. Likewise in 2016 world leaders came together and agreed upon the [Paris Climate Agreement](#) which pledges to keep the planet within 2 degrees Celsius of warming. In addition, the European Commission is advancing a [Strategy for a Circular Economy](#) which is bold in its thinking on building a fair and sustainable economic framework. We now have a set of goals that the UN and the Paris Agreement have outlined to set us moving in the desired direction, and a promising strategy for a circular economy being developed by the EU. However, given the lack of a true global authority, the sovereignty of nations, the ambiguous agendas of governments, and the interest of corporations,



achieving these goals poses an enormous challenge. Changes that need to take place are fundamental to our environmental, social, political and economic systems, and include:

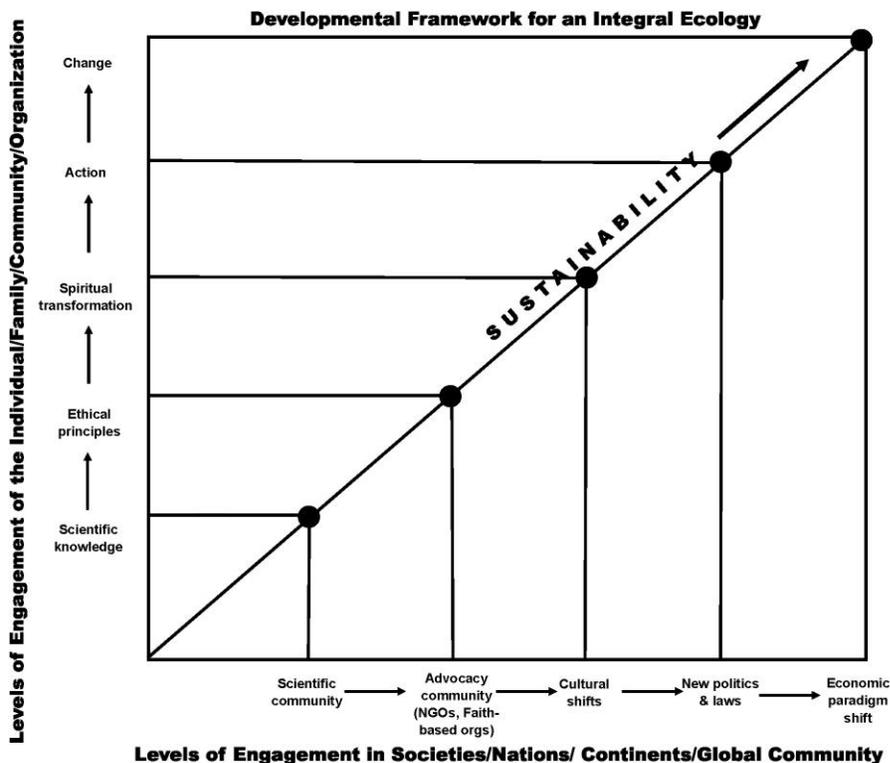
- A drastic decline of carbon emissions to zero. A shift to renewable energy systems and a commitment to leave the remaining oil, coal and natural gas in the ground.
- A sensible, fair, and sustainable use of our natural resources, including a sustainable agriculture and land use that is resilient to the climate changes that are underway, and no further claims on remaining natural biomes.
- Sustainable and inclusive cities, in which more than 70% of the population will live and must thrive.

- A fairer society, in which the needs of all people are met. In particular stronger and more equitable health, education and governance systems, with a focus on the most vulnerable populations.
- Technological development that is ethical and intentional and meets the needs of these world challenges including information and communications technologies

Implementation of these ambitious goals will require engagement at all levels of society, from the individual to the global community (see diagram of achieving sustainability below). In this quest, the roles of scientific understanding and an ethical guiding principle cannot be understated. The opportunities for transformative change coming from the worldwide leadership of Jesuit High Schools, Social Centers, and Universities is the focus of the Bilbao meeting of University Presidential Delegates.

The role of Jesuit Universities in advancing Laudato Si', the SDGs, and the Paris Agreement

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It is our opportunity and responsibility to advance this movement to rescue the planet and humanity. In a short list of the multiple ways we can approach this, we offer the following recommendations as critical areas of concern for the Jesuit University Presidents. Our universities should be:

- • Teaching environmental & economic justice across the curriculum. Not a single student should be graduating from our universities without a high degree of ethical, environmental and economic literacy. In Fr. General Adolfo Nicolas's *Healing A Broken World*, the recommendations for Universities included integrating these multidisciplinary issues throughout our curricula. This goal is achieved most effectively when the faculty recruitment, promotion and tenure systems reflect these priorities. In our Business, Economics, Architecture, Law, and Engineering Schools we should be teaching an alternative and sustainable way of proceeding in society. Are our traditional professional Schools complicit in the problem by perpetuating the mainstream extract-manufacture-sell-dispose economic model?
- • Conducting community-based research and action, with a global perspective. Employ science, social science and humanities researchers to work with community members on building and implementing a local plan to shift to 100% renewable energy and stimulate a local clean-energy economy. Engage students in this plan so that they can put to work what they learned, and practice what they should do in their professional lives. Create in them a global mindset and a desire to address large-scale challenges.
- • Collaborating with our Social Centers in service and advocacy. Our Universities could provide answers to the social and environmental issues posed by our social centers, and work together with them in implementing them. As an example, working together we can empower and educate women and impoverished communities, enabling the stabilization of the human population with this education, collaboration and outreach.
- • Building a Campus Sustainability Ethic. Living *Laudato Si'*. Demonstrating love of each other and care for our common home. We must embrace the practice of reduce, reuse, recycle, and share the wealth while also sharing the pain, poverty and pollution. Our campuses must "walk the walk", not just "talk the talk". We lead our students, faculty and staff by example. Our Universities should be leading in Corporate Social and Environmental Accountability in their practices and investments.
- • Leveraging our strengths. Identifying where each Jesuit University can make the most impact on advancing *Laudato Si'*, the SDGs, and the Paris

Agreement, and developing networks of faculty research and curricular resources toward strengthening those impactful areas of learning and action. For example, some universities might have expertise in sustainable agriculture, while another might have a center on water conservation, or excel at community organizing, international law, or environmental science. We need to identify our strengths and leverage them by collaborating broadly and deeply within the IAJU, the largest higher education network on the planet, gifted with a common mission of a faith that does justice.

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Summary thoughts

As human consumptive and growth pressure on the earth increases, we estimate more than half of the existing species will be gone by the end of this century. Global climate change will make this much worse. At the end of the Permian period, there was a 10°C rise in temperature, and 95% of all species were driven to extinction. There is no possible way we can put the earth back together when we lose our species. Extinction is final and irreversible – we are killing off the species on which we completely depend for our own existence. Pope Francis urgently asks us to attend to an Integral Ecology. Only a small fraction of humanity is benefitting from the capitalist economic model, while we are all speeding headlong into crisis.

If we integrate reconciliation with Creation into our behaviors, our university cultures, and our curricular teachings, we will not only experience a positive feedback to our own health, but also to that of people at the margins. This is what the millennials understand. Everything is connected. Every action, decision, and purchase we make has a ripple effect both upstream in the supply chain, and downstream in the waste stream. The overall goal of *Laudato Sí*, is to help all of us recognize the urgent need to become integral ecologists, people who dare to imagine a healed Earth and are willing to put their hands, hearts, and minds to the task.

The Society of Jesus must employ moral and religious leadership to intervene and affect a change in direction, through its expansive social and educational directorates.

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