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# CARING FOR OUR COMMON HOME IN THE CHURCH AND BEYOND

Theological Foundations for a Comprehensive  
Decarbonization Strategy in the Catholic Diocese

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# CARING FOR OUR COMMON HOME IN THE CHURCH AND BEYOND

Theological Foundations for a Comprehensive Decarbonization Strategy in the Catholic Diocese

In his encyclical *Laudato Si'*, Pope Francis calls for a global ecological conversion from the technocratic paradigm that predominantly shapes human activities today, towards the more just, equitable, and ecologically sustainable alternative of integral ecology. Presupposing the ontological interconnectedness of all things, integral ecology offers a holistic relational matrix within which human beings can negotiate the moral norms of their interactions with one another, other organisms, and nature in general. Dioceses around the world are trying to heed the Pope's call for fundamental change by adopting more sustainable operational strategies, including comprehensive decarbonization efforts. In this LSRI Research Report, we are exploring the theological foundations for such an ecological conversion and explore how Church teaching informs the conception and implementation of these sustainability efforts on the diocesan level and beyond.

## 1. INTRODUCTION

Unless we take immediate action to mitigate greenhouse gas emissions and sequester carbon dioxide from the atmosphere, the average surface temperature on our planet will continue to warm for at least another 300 years [1]. At that point, the Earth's climate will begin to resemble conditions found 30 million years ago in what is known as the Late Eocene-Miocene Icehouse [2]. Back then, the average surface temperature of the planet ranged between a rather comfortable 16.5 and a positively balmy 20.5 degrees centigrade, with a large ice cap covering Antarctica and no permanent ice in the northern hemisphere. Temperatures near the equator were a bit warmer than today, allowing a diverse fauna to thrive in tropical rainforests and in the oceans. The sub-polar regions and Australia were more humid and significantly warmer. Large deserts separated the lush rainforests from an extensive temperate belt that stretched right across the northern hemisphere. Life abounded, habitats were plentiful – altogether not a bad world to live in. So why, then, the great fuss about climate change?

As geologist Christopher Scotese observes, “the problem we face is not so much where we are headed, but rather how we will get there” [3]. Instead of gradually warming up, the Earth is rapidly heating. The biosphere does not have the necessary time to adapt to these new conditions. What such catastrophic changes are likely to mean for life on Earth can be discerned by looking back into the geological record. Here, we note that climate change has been one of the major drivers of the five mass extinction events that have taken place over the past 541 million years [4]. At one time, during the end-Permian mass extinction event of some 252 million years ago, more than 90 per cent of all organisms were killed off [5]. Life on Earth almost came to an end. And climate change was the primary culprit [6]. It is unclear whether anthropogenic climate change will cause an equally cataclysmic loss of life, but it will certainly come at a great cost to many organisms, humans included. Living conditions will drastically worsen and the extinction rate will spiral dangerously out of control [7].

But even in the present we can feel the dramatic impacts of global warming. Storms have increased in intensity, floods have become more severe, and droughts occur more commonly and last longer. As a result, wildlife, which is already under pressure, has suffered possibly irreparable losses, while millions of people around the world have lost their homes and livelihoods [8]. For now, it is those who live in the low-income countries of the so-called Global South who are most affected. But before long, even the wealthiest of nations will succumb to these pressures. Once the Earth exceeds its capacity for buffering this human-caused warming, it will likely undergo rapid and irreversible changes that will impact everyone [9]. Climate change is no longer the doomsday fantasy of a few fringe scientists and some alarmist environmentalists; in fact, it never was. It is a scientifically established fact that can no longer be ignored. The time to act is now.

Faced with this challenge, the world religions have raised their voices with an unprecedented unity to call for a fundamental societal transformation toward a more just, a more equitable, and a more sustainable future [10]. In his social encyclical *Laudato Si'*, Pope Francis calls for an ecological conversion, a change of heart giving rise to a new

view of reality where all things are connected due to their shared origin in God’s creation [11]. This new holistic framework the Pope calls *integral ecology*. Catholic dioceses worldwide are seeking to respond to this appeal in a variety of ways, from avoiding single-use plastics to using fair trade products, and from considering divestment strategies to initiating decarbonization programs.

But what are the theological foundations for such an ecological conversion? And how does Church teaching inform our thinking on decarbonization approaches? These will be the questions this paper tries to address.

## 2. INTEGRAL ECOLOGY

### The Papal Encyclical

Protecting creation has been an issue for the Catholic social tradition ever since the early 1970s, but it was not until the publication of *Laudato Si'* in 2015 that the socio-ecological crisis moved firmly into the centre [12]. In this encyclical, the suffering of nature at our hands and the material, social, and emotional hardships of the poor are seen as two inseparable sides of the same underlying problem. Any attempt to resolve the social crisis without addressing the ecological crisis, or vice versa, will be an exercise in futility. For Pope Francis, the challenge we must face is “an integrated question of justice” embracing both “the cry of the Earth and the cry of the poor” [13].

However multifaceted the crisis might be, according to *Laudato Si'* its cause can be pinpointed to one single phenomenon, namely, the globalization of the technocratic paradigm. The Pope does not mean to criticise the use of technology *per se*. On the contrary, many of the science-based technologies available today deserve our praise as “wonderful products of a God-given human creativity” that have helped to remedy “countless evils” that have plagued humanity [14]. To be sure, we can say that modern technoscience has at times empowered those with the means to exploit nature’s resources for their own benefit at the expense of their neighbours. But this only underscores the importance of adopting a sound ethic with regard to the development and

use of technology [15]. The problem is not so much technology as the worldview that sometimes underlies it. It is our worldviews that shape our understanding of reality and inform our behavior, which in the case of the technocratic paradigm amounts to a sense of infinite human power and entitlement. Accordingly, science allows us to explain natural phenomena and, in doing so, renders them ours to exploit or manipulate as we see fit. By the sheer power of our technoscientific ingenuity we can use creation to maximize our personal gain – no matter what the consequences might be. Nature is no longer appreciated as a gift, something to which humanity belongs, but rather it is viewed as our vis-à-vis that must be tamed and controlled [16]. It is this confrontational relationship, the encyclical concludes, that constitutes the foundation of modern notions of unlimited growth. And as this originally Western understanding of reality made its way around the globe via colonial expansion, it exported attitudes that encouraged the exploitation of the Earth’s resources and all of God’s creatures in it [17].

For Pope Francis, the antidote to this is to be found nowhere else than in a global societal transition into an integral ecology. At its foundation lies the idea that *all things are interconnected*, linked to one another in such a way that individual well-being is never independent, but always contingent upon the well-being of the entire system. In other words, the world is seen through a carefully hewn *integral lens*, where humans are still part of the whole and do not oppose it from some hypothetical place of superior entitlement.

## An Alternative Paradigm

Few aspects of *Laudato Si’* have received as much attention as the phrase “integral ecology” [18], and more often than not, it has been misunderstood or misrepresented, or both. Readers from outside the Church have frequently interpreted it in a way that is completely detached from its theological foundation, seeing it either as a new way of doing ecology, or as promoting some kind of environmental activism. Others applauded the Pope’s acceptance of a new age concept by the same title [19]. And even some Catholic theologians have suggested it is primarily

philosophical in nature. What makes this concept so susceptible to these rather loose interpretations seems to be less the qualifier “integral” as much as the word whose meaning it enhances, that is, “ecology.”

The term ecology was coined by nineteenth-century German biologist Ernst Haeckel to describe that discipline within the biological sciences which studies the interactions and interconnections of organisms with one another and with their physical environment [20]. Since its conception, the concept has undergone some fine-tuning and its horizon of meaning has fanned out. Today, biologists use at least three definitions of ecology, and more continue to emerge [21]. This is true also for other concepts in biology, including such generally familiar ones as gene, species, forest, biodiversity, or, for that matter life, to name a few [22]. This vagueness should not worry us; it merely shows that ecology, like any other science, is developing with new knowledge. And although biologists might not be able to agree entirely on one final definition, overall, there is consensus among them that ecology is a biological sub-discipline dealing with the intricate relationships of organisms and the world in which they live and evolve.

*Laudato Si’* adopts a rather different understanding of ecology which emphasizes the inherent interconnectedness of the biological and human realms. Here, ecology is no longer merely an empirical science, but has economic and social dimensions along with an environmental one [23]. Even when it mentions “the environment”, the encyclical is referring to “the relationship existing between nature *and the society which lives in it*”, rather than to the sum total of all biological and physical influences that affect organisms [24]. In the hands of Pope Francis, then, “ecology” becomes more of a sociological construct than a biological field of study. And we can now begin to see what he means by that phrase “integral ecology”.

What seems to be at work, here, is Leonardo Boff’s appropriation of French psychoanalyst and activist Félix Guattari’s distinction between environmental, social, and mental ecologies [25]. Guattari saw the same technocratic tendencies at work in traditional environmentalism that had caused the problem in

the first place. To him, this ‘mechanical ecology’ [26] was insufficient or dangerous unless it was complemented and framed by an ethico-political ecological philosophy (ecosophy) connecting environment, social relations, and human subjectivity. What seems to be at work, here, is Leonardo Boff’s appropriation of French psychoanalyst and activist Félix Guattari’s distinction between environmental, social, and mental ecologies [25]. Guattari saw the same technocratic tendencies at work in traditional environmentalism that had caused the problem in the first place. To him, this ‘mechanical ecology’ [26] was insufficient or dangerous unless it was complemented and framed by an ethico-political ecological philosophy (ecosophy) connecting environment, social relations, and human subjectivity. It is such an ethico-political ecosophy that informs Pope Francis’ use of ecology, and it seems that this understanding of the concept leads to misunderstandings among those who quite rightly view ecology as a field of biological inquiry. Disconnect the term from the fullness of its intended meaning in *Laudato Si’*, and you invariably fail to grasp the main thrust of the encyclical’s argument.

Integral ecology, then, is neither a science nor a method of environmental activism, but a *paradigmatic* way of understanding the relationships humans have with the world around them, with other organisms, and with one another. The qualifier *integral* underscores the interconnectedness that is implied in this definition and hints at a fundamental theological assumption underlying the whole project: not only is human existence and well-being closely connected to nature, but it is also *part* of nature and, as such, part of God’s creation. We cannot view ourselves as separate from the rest, nor can we assume the world-as-‘nature’ is ours to use as we please. We are, all of us, rich *and* poor, part of that one creation and so belonging with it to God. As a paradigmatic worldview, integral ecology and its primary assumption of an ontological interconnectedness is a framework for how we are to live our lives and interact with the world around us – and with God [27]. This includes our economic strategies as well as our use of technology and of the planet’s natural “resources.” *Laudato Si’* abounds with references to integral ecology as the openness to our God-given place in creation which is needed to overcome the

crisis and restore our relationship with creation [28]. It is the only framework within which justice is possible, be it equity in the distribution of wealth worldwide or the sustainable use of the ecosystem services all humans require to survive and to live their lives to the fullest of their God-given potential. Where the technocratic paradigm has at its core the desire for the maximization of individual power and wealth, the integral paradigm revolves around a fraternal sense of care and responsibility for all [29]. If there is one message to take home from *Laudato Si’*, it is that humanity needs to transition from the technocratic into the integral paradigm.

A question arises concerning the part religion plays in this momentous paradigm shift and the future integrality to which human society is to convert: is faith merely one possible route into change or is it its *conditio sine qua non*? That is to say, is integral ecology really just a metaphysical framework which believers and non-believers can share equally, or one for which spirituality, faith, and religiosity are essential? This is a loaded question; at stake is not only the traction the encyclical’s message could gain universally among non-Catholics, but also its immediate implications for Catholics.

One could attempt to construct an argument for integrality free of any religious or spiritual sentiments, but this is hardly what *Laudato Si’* does. Here, integral ecology marks an “openness to categories which transcend the language of mathematics and biology, and take us to the *heart of what it is to be human*” [30]. That for the Pope this openness necessarily implies a spiritual dimension seems self-evident. And so, indigenous worldviews that embed notions of universal interconnectedness in rich religious cosmologies and cosmogonies are indeed examples of integral ecology, while models disregarding spirituality altogether are not. They are, at least in the Pope’s analysis, still caught up in the technocratic mindset. It is safe to say, then, that faith and every form of its articulation, is an indispensable feature of integral ecology.

Upon close analysis the Pope’s main proposal for resolving the socio-ecological crisis will not appeal to a great number of people especially in the countries that cause most of the problem. It is important, though, to keep in mind the threefold

objective of the encyclical. First, *Laudato Si'* is an invitation to a general conversation on how to respond to the current global socio-ecological crisis [31]. Second, in it, the Church seeks to present itself as a valuable and reliable partner in this conversation amongst various stakeholders [32]. Finally, the document is part of Catholic Social Teaching, and as such its aim is to show Catholics that converting to integral ecology so as to protect God's handiwork is essential to a life of virtue [33]. What can make *Laudato Si'* important for non-believers committed to sustainable development is that willingness of the Church to cooperate as a faith-based stakeholder in the great transformation. For Catholics, however, the significance of the encyclical is that it is now a major document within the Church's social tradition and, as such, cannot be ignored [34]. The task for Catholics is how to effectuate the paradigm shift into integrality, which means to understand integral ecology in its religious dimensions. To that end, one must consider the theology informing *Laudato Si'*.

## Theological Foundations of Integral Ecology

As an encyclical addressing the socio-ecological dilemma of our times, *Laudato Si'* is part of the Catholic social tradition but, strictly speaking, no work of theology. Nevertheless, since encyclicals attend either to some disputed matter of theology or to a general matter of concern, or both, they always pertain to Catholic doctrine and in their arguments rely constantly on theological foundations. The way *Laudato Si'* constructs the outlines of an alternative integral paradigm is deeply steeped in theological reasoning, as are the instructive parts of the encyclical offering Catholics ways of entering into the conversion process. Standing out are doctrines on creation, anthropology, and morality, but also others relating to salvation, eschatology and, of course, the Church. They are elegantly weaved together with insights from the natural and social sciences in the form of a hypothetical consonance [35]. It is this elaborate use of theology and science that allows Pope Francis to bring scientific data to bear on ethical decisions regarding the socio-ecological crisis and to develop integral ecology as a particularly Christian framework informing a believer's way of being in the world. As we have seen above, key here is an openness for all that lies

at the heart of being human.

*Laudato Si'* does not offer any revolutionary new theological insights into human nature, instead deploying a rather traditional anthropological perspective. Accordingly, humanity is unique in that it alone has been created out of divine love in God's image and likeness [36]. And since with exceptional status comes exceptional responsibility, humans must act in accordance with their God-given ontological constitution regardless of what existential crisis they face. What precisely these responsibilities are and how we must implement them in our actions depends largely on what it means to be the bearer of the divine image. The encyclical is quite clear on this, and it is important to review its arguments carefully so that the resulting consequences become obvious. In essence, the document reasons that being created in God's image is to have received a mandate to care for each other and for the natural world with justice and holiness, thereby expressing the intimate relationship we have with God. That needs unpacking.

That humanity is moulded after the Creator and endowed with special privileges not extended to any other creature has its origin in a short and somewhat contested passage from the book of Genesis (1:26–28). In it, God decides to make humankind in the divine image (בְּצַלְמֵנוּ, *b'tsalmeinu*), and according to God's likeness (בְּדְמוּתֵנוּ, *kid'muteinu*), and to let humans have dominion (וְיָרְדוּ; *v'yirdu*) over all the creatures of the Earth [37]. Theologians have long debated how to understand this obscure description and in the course of history have proposed a plethora of interpretations which can be subsumed under one of three broad types [38]. According to *substantive* readings the image marks a trait or property of the human being; *relational* expositions locate image-bearing in our relationships with others and with God; finally, *functional* interpretations see it reflected in our actions, especially human dominion over the earth. These three types form a kind of nested hierarchy, insofar as some cognitive and affective capacities (type 1) are needed to have personal connections with others (type 2), and dominion over the creatures (type 3) constitutes a special form of relationship. Not surprisingly, then, Roman Catholic teaching has traditionally favoured an amalgamation of all three [39]. It is by our self-consciousness



and reason that we share in “the light of the divine mind” and can accept the always already graciously extended divine invitation for unity with God. And it is within this communion that we come to understand how we are to rule responsibly over the rest of creation. It is this notion of human ontological uniqueness that is operative in *Laudato Si’*.

But what of our dominion? *How* are we to rule either over each other or over the natural world? The etymology of dominion suggests that nature is given to us as our property over which we reign as masters, free to manipulate as we please [40]. For Pope Francis, such a rendering of the Hebrew text ignores the divine command in Genesis 2:15 that we must till and keep the garden of Eden. We are to be stewards on Earth in God’s stead and to live with all creatures, human and nonhuman, in harmony [41]. All humans bear the divine image and, because of it, are endowed with infinite dignity, making it mandatory to treat one another accordingly. Nature provides for us, but it does not belong to us. It belongs to God, and we are to tend to it carefully, making sure it thrives and does not suffer unnecessarily at our hands. It is in this harmonious fellowship that we come to live out our relationship with God. Any technocratic self-aggrandizing is an act against our God-given disposition, our human and nonhuman neighbours, and, ultimately, against God.

As of late, stewardship has become one of the main theological responses to the socio-ecological crisis. While its appeal is quite understandable, even this approach needs qualifying. First, it potentially remains anthropocentric, placing humanity into an ontologically elevated position that once again separates us from the rest of creation. So, regarding the ecological crisis little is gained. Second, arguing for the stewardship approach based on Genesis 2:15 seems to introduce assumptions about human management of the Earth that are questionable from an exegetical perspective [42]. Emphasizing interconnectedness thus does not point at human stewardship as much as it underscores human creaturely fellowship with all other creatures that exist outside the garden of Eden. We share with them our origin in God, and it is only through rekindling our relationship with one another, with them, and with God that we can hope for redemption. It is our very creatureness as one of “them” that requires

us to care for all creatures lovingly and humbly. Integrality means creaturely fellowship.

Creaturely kinship also chimes well with a central aspect of the Christian doctrine of creation, namely that God found all of creation to be good (Gen 1:31). It is a common strategy adopted by Christian environmental advocates to point this out and deduce from it that all organisms deserve our care and protection. *Laudato Si’* does so, too, and given its integral inclination, it follows that for the encyclical it is creation in its integrative cosmic sense that God declares good [43]. All creatures have intrinsic value, but they are good also with respect to the world in its interconnected entirety. Here, then, lies another theological anchor of integral ecology. It is *everything* God made that God deemed very good (Gen 1:31). And in this integrated whole the human being plays as important a role as other beings, even if by itself it may have been warranted for its own sake. Humanity is called to an intimate relationship with the Creator without being exalted. We are to other beings fellow creatures, and we are answerable to God in how we treat them. Pope Francis does not avoid naming the special dignity of human beings and affirming a qualified version of anthropocentrism that resists all forms of domination and tyranny [44]. Although his position is somewhat in tension with his insistence on the interconnectedness of all life, which implies a shift away from ethical hierarchy, engendering a special role for humanity means in practice that we must also care for the fragile planet that is the home of all creatures as well as ourselves, rather than through our insatiable greed put all of it at risk.

## Scientific Foundations of Integral Ecology

It seems only prudent to take at least a brief look at the scientific data that supports an integral perspective, especially since Pope Francis reasons from within the consonance approach of theology and science.

Earth System Science views the planet as one network of intrinsically interconnected parts. Within this system, certain sub-systems can be identified that are not operating independently, but which are in a somewhat fine-tuned relationship with one another. The planet’s atmosphere cannot be understood unless it is studied in connection with the geosphere,

the hydrosphere, and the biosphere, and *vice versa*. Dividing the Earth system makes it easier to study its underlying physical, chemical, geological, and biological processes, but it is imperative to remember that all these four sub-systems and their constituent elements are inherently interconnected. The physical sciences have demonstrated how at the most elemental level all entities are composed of the same material stuff observing the same laws. Chemistry has shown how this stuff can combine to form the basic molecules of life and sustain organisms by generating and converting energy. And it is through biology that we know how closely related all organisms are, having evolved from a common ancestor and resolving into complex ecological communities. Social scientists have long linked changes in the Earth system to societal effects, such as poverty or social unrest, and even violent conflicts. The main assumption of integral ecology that we exist in an integrated system that extends beyond merely the physical realm and into the social sphere is also clearly supported by the scientific data from various natural and social sciences.

One example showing this well is the whole complex of problems associated with climate change, where changes in one part of the global system will have far-reaching ramifications in others. At the time of writing, anthropogenic injection of greenhouse gases into the atmosphere have raised CO<sub>2</sub> levels to an unprecedented 416 ppm and have increased the average surface temperature of the Earth by about 1.2°C (2.1°F) [45]. It may not seem like much, but this “moderate” warming has already diminished the arctic ice minimum by 13.1% per decade. Every year, the ice sheets lose around 430 billion metric tons of ice. In some mountainous regions, glaciers have largely disappeared, causing severe flooding and weather changes [46]. Before too long, rivers and streams fed by glacial waters will dry up and cease to provide for plants, animals, and humans downhill. Countries depending on hydropower will have to find alternative, usually less sustainable means of electricity production, thus further advancing global warming. Flora and fauna worldwide will be confronted with novel environmental conditions to which they will not be able to adapt in time and eventually, face extinction. By now, several animals on land and in the oceans have altered their migration

patterns in response to climate change, which further aggravates already suffering ecosystems [47]. The warming of the oceans intensifies storms while simultaneously rendering sea water more acidic [48]. Human-caused climate change not only impacts the atmosphere adversely, but also the hydrosphere, the geosphere and ultimately the biosphere. It also has dramatic social impacts, ranging from the loss of homes and livelihood due to extreme weather to the loss of food sources due to flooding or droughts. Add to it the spread of diseases, such as the COVID-19 pandemic, which is made easier by changing temperatures and the resulting loss of biodiversity, and it quickly becomes obvious how the scientific data further validates integral ecology while calling into question the technocratic paradigm.

### 3. RADICAL ECOLOGICAL CONVERSION

As mentioned above, the primary message of *Laudato Si'* is that as a global community, humanity needs to transition from the technocratic paradigm into integrality. To Pope Francis, such a paradigm shift requires an *ecological conversion*. The concept is indeed so central to the encyclical message that it needs to be carefully reviewed here.

Originally coined by Pope John Paul II, ecological conversion in *Laudato Si'* is developed further and becomes much more than a vague description of an observable societal phenomenon. Here it denotes a *fundamental reorientation of our existential concern away from selfish egocentrism toward a caring relationship with all of creation, and thus, with God*. One must not underestimate the immensity of this demand, which goes right to the roots of our individual self-understanding and our societal structures. We are called to an essential *volte-face* that demands we give up much of that to which we have grown accustomed [49]. It is no exaggeration to say that Pope Francis envisions a *radical* ecological conversion [50].

When John Paul II spoke of it in a general audience at the turn of the century, ecological conversion was but a gradually growing phenomenon in certain parts of the global society that he deemed worthy

of emulating [51]. Like his later successor Francis, John Paul II felt that we no longer were fulfilling our stewardship role and instead had turned into “autonomous despots”, selfishly destroying what had been given to us to safeguard. He saw far more at stake than just “physical” ecology. Our reckless actions threaten “a ‘human’ ecology which makes the existence of creatures more dignified, by protecting the fundamental good of life in all its manifestations and by preparing for future generations an environment more in conformity with the Creator’s plan” [52]. In a sense, then, ecological conversion is less the passage into something new, as would be the conversion to another faith, than repentance and the return to our true, God-intended being [53]. *Laudato Si’* concurs with this sentiment.

To Pope Francis, radical ecological conversion is a deeply spiritual transformation that cannot be divorced from its religious dimension. When it comes to making concrete suggestions on how to overcome the socio-ecological crisis, *Laudato Si’* is rather pragmatic and lays out the blueprint for a global transdisciplinary conversation on the matter [54]. But of course, such a dialogue is only possible when its participants have already become aware of the necessity for change, which suggests that at least to some degree they have undergone a change of heart. The ultimate problem, though, is *how* one may achieve this, and chapter six of the encyclical focuses on what lies at the very heart of Christian life: human development towards integrality [55].

“Many things have to change course,” Francis writes, “but it is we human beings above all who need to change” [56]. Only when we assume a habit of deep concern for each other and the world around us can we hope to avert the looming catastrophe. But what would such a conversion involve? As far as Pope Francis is concerned, it would require at the very least raising awareness of “our common origin, our mutual belonging, and of a future to be shared with everyone” [57]. In other words, we face a cultural as well as a spiritual challenge, and the needed “renewal” requires the education of the whole person – an “ecological catechesis,” as it were [58]. The world is in trouble largely because we have lost our spiritual anchor, and so it is by means of ecological and spiritual education that we can once again understand ourselves more adequately, leave

the technocratic paradigm behind, and move forward into the holistic framework of integral ecology [59]. A massive undertaking, no less.

Massive indeed, but not really a matter of choice. To Christians, undergoing this total existential reorientation - some might even call this a new Enlightenment - is tantamount to a life of virtue [60]. It is a common and universal duty, not the least because protecting the Earth system, including the atmosphere, is an act of respecting a common good [61]. Moreover, it is a necessary aspect of creaturely fellowship and, as such, part of what God intended for us to do. In the end, however, ecological conversion is merely one aspect of the constant reconciliation with God, neighbour, and creation to which Christians are already called [62]. And since humans are social beings, radical ecological conversion has both a personal and a communal dimension.

## Personal Radical Ecological Conversion

Theologically, conversion is difficult to be isolated from other, slightly differently connotated concepts of change such as *repentance*, *metanoia*, or *epistrefein*, but like all of them it denotes more than just an intellectual shift in opinion [63]. It concerns a change of heart and mind, the inner transformation of the whole human being in view of its relationships with neighbour, nature, and God [64]. This can mean that a person converts to a particular faith and willingly enters a new spiritual community, possibly as the result of a lengthy development in response to a personal crisis [65]. It also refers to the ongoing effort of a believer to turn around his or her life and to realize a healthy relationship with creation and the Creator. At times, then, the call for ecological conversion emphasizes the aforementioned turn toward an entirely novel understanding of creation and humanity’s place in it, while at other times it underscores the necessity for believers to acknowledge their failings and sinful actions, and their resulting willingness to reconcile with those they have wronged. Either way, conversion is truly radical, indeed, for the change it implies affects what at the core motivates a person’s hopes and actions.

The twentieth-century Catholic theologian Karl Rahner refers to such a constitutive orientation as

an “existential” [66]. He creatively appropriates the notion introduced into philosophy by Martin Heidegger to capture the concern that at the innermost defines us as human beings, and determines how we interpret our experiences and choose our actions in an attempt to understand the meaning of our existence [67]. But where Heidegger identifies as the underlying and unifying human existential a kind of fear of nonbeing, Rahner, drawing on the work of Thomas Aquinas, singles out our desire for the beatific vision we received as a gratuitous, unowned divine gift [68]. We are, one might say, “wired” for God. Only in our intimate and personal relationship with the transcendent and loving God can we find fulfilment and holiness. And since this central concern is God-given, Rahner calls it the supernatural existential [69].

Nothing really prevents us from rejecting the divine gift but ourselves, and so we can turn away from our relationship with God and, thus, from what is our innermost and most authentic centre [70]. Selfishly destroying nature or using others for our own gain is nothing short of such a dismissal of God’s offer, an act that tradition knows as sin and that can only be repaired through our voluntary reconciliation with those we have hurt. Conversion therefore always involves a fundamental decision, even if this decision is not entirely available to analytical reflection [71]. In this sense, radical ecological conversion is the return to our God-intended way of being in the world via the fundamental reorientation of our existential concern away from our self-centred obsession with wealth, consumerism, control, and power onto a genuine care for the wellbeing of all creatures purely for the sake of their intrinsic value, goodness, and participation in God’s creation. And like all virtues, this care for the other must be honed until we assume a new habit of concern and action, and “turn what is happening to the world into our own personal suffering” [72].

So much for the *what* of radical ecological conversion, but what about the *how*? How does one turn one’s life around completely and return to an integral way of being in the world? This is, of course, the central task of the Christian life anyway, and theologians have offered a variety of suggestions on how to fulfil it. What characterizes these models is the distinction between different aspects or modes of conversion

that can occur each by itself, though always in connection with the other. It is not guaranteed that a person undergoing conversion will attain all of them, but often the order in which the different modalities are realized seems to move from the more affective to the more cognitive ones [73]. Whatever its exact course, personal conversion often emerges from some personal crisis, and how one responds to such an existential challenge will affect the extent of the subsequent conversion. Hence, radical ecological conversion must begin with our acknowledgement of the crisis at hand and our role in it.

There is another step that must precede acknowledgement, and that is the perception of the situation as critical. Environmental psychologists are increasingly dealing with this issue and have identified a complex web of factors influencing perception, chief among them values, personality type, emotions, cultural background, but also personal interactions with nature and those who suffer from one’s actions [74]. As much as these modulators of perception can help an individual to perceive the socio-ecological circumstances as dire, they can also hinder conversion. For those who were socialized and educated within the technocratic paradigm it may prove difficult to connect their actions to environmental degradation and human suffering in other parts of the world. Furthermore, for those inculcated with the technological paradigm a sense of resignation and acquiescence to historical trajectories of globalization, industrialization, capitalism can often reduce the belief that anything can change [75]. One way the Church can help here is by offering education and spiritual guidance to the faithful. Therefore, a diocese that adopts a sustainability strategy, including a comprehensive decarbonization campaign, should include in their plan specific spiritual practices to aid individuals in recognizing the severity of the situation and the need for immediate action. Other steps that correspond to the different modalities of personal conversion following from such an initial move would be the conscious acknowledgment of the crisis (intellectual conversion), empathy for suffering neighbour and nature (affective conversion), and the willingness to act accordingly (moral conversion).

## Societal or Communal Radical Ecological Conversion

Humans are corporeal-spiritual, historical, and social creatures, and as such they affect the community in which they live. This is true for society in general and the Church in particular. Because of it, when individuals have undergone a personal ecological conversion, their newly gained habit of concern and action can ultimately help alter the general attitude and governance structures of their community. Radical ecological conversion is always also a societal endeavour. In fact, it is precisely this collective transformation that Pope Francis has in mind when he proposes the world abandons the technocratic paradigm in favour of integral ecology.

For *Laudato Si'*, Christians should partake in such an about-face of the global community in a spirit of generous care carried by gratitude for the world as God's loving gift, together with an awareness that as fellow creatures we belong to this world together with all other beings. Individuals can easily feel overwhelmed by the daunting task that lies ahead of them, but the encyclical assures us that even in the smallest deeds, in humble, loving daily gestures, the converted can help convert the system. Strength can be found in a lived spirituality, but also in the realization that we are utterly dependent on one another and cannot hope for change by removing ourselves from society or, for that matter, by trying to take on the world's problems alone. Even seemingly superfluous acts of love and kindness, of mutual care, are ultimately civic and political, and thus help to move society closer to integral ecology. Every act devoted to bettering the world is making society more human and more worthy of the human person, and it is this existential concern for the community that needs to become normative for all.

What does this imply for the communal life of Catholics specifically? Above all, it means that the Church as such must undergo a radical ecological conversion. As an institution the Church both constitutes a community in need of change, but it also understands itself as being part of a global society that is desperately in need of transformation. Our individual contribution, however inconsequential it may appear, combined with all other small deeds, amounts to what is true integrality. Whether in

congregations or dioceses, a radical and holistic conversion is no mere choice, but a necessary aspect of a genuine Christian life.

This also means that as part of general society, the Catholic Church must engage in a transdisciplinary and participatory negotiation with other stakeholders on how to achieve such a general transformation in which the economic emphasis lies on the common good, the social focus on fraternal love, and the ecological accent on creaturely fellowship. Chapter five of *Laudato Si'* highlights a variety of arenas in which such dialogues should take place. Important for all of them is the necessary humility all participants must assume. No stakeholder, not even the Catholic Church, is in possession of the one solution to the problem. On the contrary, everyone involved will bring something unique to the table, and it will be the objective of all to find a common ground in a shared strategy to overcome the crisis. For instance, much can be learned from those who have always maintained an integral perspective, such as indigenous peoples. Whatever mode the dialogue will take on, from the perspective of Catholic Social Teaching it must be centred around the preferential option for the poor. In the spirit of a radical ecological conversion, this does not need to be limited to humans. Giving preference to all who are powerless and abused by those in power could and should be extended also to nonhuman creatures. A "civilization of love" should be based on creaturely fellowship and loving care for all of God's creation.

It was no coincidence that the publication of *Laudato Si'* occurred around the same time the United Nations passed their Agenda 2030 on sustainable development and the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) was held in Paris. Here, the Church actively sought to set the stage for a conversation with world leaders and different non-governmental stakeholders. Since then, the agenda with its 17 Sustainable Development Goals (SDGs) has become a major effort to which numerous nations are committed. Throughout the Church, congregations and dioceses have welcomed the agenda and are trying to adopt the SDGs in their daily decisions. Unfortunately, the Paris Accord on reducing climate change has not had the desired

effect of the member parties truly committing to significantly reducing carbon emissions in the near future. That makes it all the more important for institutions like the Church to take the initiative and lead by example. *A decarbonization strategy is therefore one essential step in a necessary ecological conversion of churches, particularly the Roman Catholic church.* How, then, can this be achieved at the level of individual dioceses?

## 4. TRANSFORMING THE DIOCESE

**T**he roots of the Church are the dioceses and their respective congregations, and it is here that the ecological conversion of the Church must begin. But contrary to the general perception, the Catholic Church is not monolithic, and negotiating this transformation will inevitably have to reflect a multitude of voices. In this conversation it will be key that the dioceses cultivate ecological virtues and practical wisdom to overcome the adversities of the socio-ecological crisis. And they will have to do it fast.

### It is Time!

Earth is running out of time. Anthropogenic climate change is accelerating, and with every day we delay change we extend the catastrophe for centuries, possibly even millennia. We must act now.

Our excessive consumerist lifestyle of the past two-hundred years has placed us into what theologian Paul Tillich has called a boundary-situation – a moment in history that demands of us an immediate existential choice in which we negotiate the very meaning of our existence. Tillich calls this a *kairos* moment, appropriating the Greek concept of a *critical time to act*. As opposed to *chronos*, marking sequential time, *kairos* is a qualitative measure that has an ethical dimension [81]. It is in such moments we become aware of the challenges before us and the need to respond to them adequately. Therefore, throughout the ages, *kairos* has been related to the virtue of prudence (*phronesis*) or practical wisdom [82]. The current crisis is an ecological *kairos* that demands swift and sensible action.

For Christians, this seemingly profane understanding of *kairos* may come as a surprise, given that in the New Testament the term is used to designate the “fulfilment” of time in which the kingdom of God is at hand (Mark 1:15) [83]. It is, thus, seen as a gratuitous gift with eschatological significance, for in this fulfilment of time humanity is offered salvation from all the trespasses against God it has committed. And yet, even here *kairos* marks a time of a personal, inevitable, and pressing decision [84]. Jesus tells the people to repent (*metanoete*) and turn their lives over once more to God. But to do so, they must first see the “signs of the times” and recognize the critical need for appropriate action [85]. It is the time for people to wake from their sleep, to lay aside the works of darkness, and to put on the armour of light (Rom 13:11-12). And so, while for Christians *kairos* is indeed the centre of history, it also is a time that demands of us a fundamental change of heart along with prudential action.

History is full of moments when due to circumstances or human transgressions we are faced with an existential decision. Such moments demand of us a prophetic consciousness, and it is from within this mindset that we need to assess these “relative *kairoi*” against the central criterion of the “great *kairos*” that is the coming of Christ [86]. Over and over again, we are faced with a chance to respond to a crisis in the right manner, but whether we succeed depends on how our actions bring the world closer to the kingdom as the fulfilled eschaton. The socio-ecological crisis constitutes such a challenge and offers the chance for us to act so that the “kingdom of God manifests itself in a particular breakthrough” of the prophetic Spirit [87]. Thus is the ecological *kairos*.

### The Socio-Ecological Wisdom of Virtues [88]

The notion of wisdom is connected with philosophy (*filos-sophia*), which means love of wisdom. Yet the gradual detachment of this classical understanding of philosophy from its original sense means that philosophy today is more often than not associated with a much narrower pursuit of knowledge. In its ancient meaning philosophy was about *life*, how to live that life, and about the relationship of everything with everything else. In religious

terms that relationship is necessarily inclusive of a religious commitment, including in many cases, acknowledgement of the divine. Since sustainability, understood at least in an environmentally sensitive way, is about maintaining relationships between humans, other creatures and the planet, wisdom is most properly linked with, and some might say integral to, the pursuit of sustainability in a socially responsible way.

Practical wisdom, or *prudence* in the classical tradition, is concerned with deliberation, judgement, and action, and in this sense cannot be separated from how to act, that is, from practical ethics. In the Aristotelian tradition prudence, or practical wisdom, includes the correct discernment of how to engage in a particular course of action, as well as the correct way of expressing a particular virtue. Socially important virtues such as justice, for example, are judged as approaching true virtue, but only if they align with practical wisdom. To give a concrete example: in a situation where there is a conflict of interests between acting so as to reduce one's carbon footprint (such as using a form of transport reliant on battery power), and the mining of lithium used for batteries which then has negative consequences on vulnerable poor communities in the global South, the exercise of practical wisdom helps to sort out what the right course of action needs to be. It may be that through deliberation and judgment, the right action is to press for a structural change in mining practices so that those communities do not suffer further exploitation, even if the price of lithium increases as a result. Practical wisdom can also be named as a virtue or habit of mind that is orientated towards excellence. However, that excellence is not simply about what is good for the individual, but it is about what is good for the common public good, or the community as a whole, including those living in the global South. Working out what that good might be will not necessarily be a straightforward task based on following specific rules, but it will be about discernment based on what a community considers the good might be.

It is here that Judeo-Christian traditions can find common ground with Asian traditions [89]. For Confucius, for example, the cultivation of a moral sense has a high priority, and those that sought to acquire morality had to fit into certain cosmic

patterns, leading to a peaceful, flourishing society. Confucian thinkers also affirm the role of the “heart and mind” in making decisions. The term they use for this (*in*) incorporated the cognitive and the emotional faculties, as well as the moral sense. Christian theology has tended to separate these two functions. For example, Aquinas distinguished the intellectual virtues of understanding (*scientia*) and wisdom from the theological virtues of faith, hope, and charity. However, he strongly believed in the unity of virtues, so that wisdom was necessarily rooted in charity, and the close connection between wisdom and compassion also resonates strongly with the Buddhist tradition.

Confucian wisdom, like that in the Abrahamic traditions, is orientated towards the good, not just of the individual, but also of society as a whole. All traditions argue for a purgation of forms of selfish behaviour or self-seeking, which are regarded as the antithesis of wisdom. Neo-Confucian traditions also stress the importance of practice, so that knowledge without action fails to lead to progress in the moral life, including a particular emphasis on daily practice. This is an important ingredient of sustainability, for without due attention to the patient implementation of good practice, and listening carefully to insights from indigenous and other communities of those living through these specific challenges, more theoretical calls for sustainability will fail to become concrete. For neo-Confucian thinkers, there was a grand design for individuals, families, and society. Moral self-cultivation was the way to bring human needs into harmony with the natural world and nature's capacity for producing goods. Traditional Abrahamic faiths also adhere to belief in an ordered universe, but they tend to place humanity as ruler of the natural world, hence the strong tradition of stewardship in Islam. There is rather less of a sense of finding harmony with nature than of becoming masters of it for human benefit.

The wisdom traditions remind us of the paramount importance of looking to our own human attitudes and dispositions. While for Abrahamic wisdom the source of such insight ultimately comes from God, neo-Confucian wisdom reinforces the holistic nature of such a task. In other words, it is not just my own individual journey, but who I am in relation to others, and in relation to the natural world. For

those following the neo-Confucian tradition, this amounts to an expression of *The Way*. For Jewish writers, such an orientation is impossible without reference to the Torah. For Christian writers, such an orientation is impossible without reference to Christ, who is also “the Way, the Truth, and the Life”—and one might also say Wisdom incarnate. For Muslim writers, Mohammed provides the pattern for right human living according to wisdom.

A rather different way of perceiving wisdom that also takes its cue from grounded practices may be found in African proverbial wisdom traditions. These traditions also share some common ground with indigenous religious traditions. Arguably, those who have pressed for an ecological wisdom more often than not mean that which is by its very nature against any form of hierarchy or elitism that seems to persist in the Abrahamic faiths, even though, as suggested above, there are strands within it that subvert such tendencies. The African proverbial tradition of wisdom is intuitive, relies on oral transmission, is focused on benefits for the group, and is shared in common with others through daily practices.

Wisdom may therefore be thought of as being grounded both in an understanding of the divine for those traditions that adhere to belief in God, and as emerging from consideration of the natural world, an ecological wisdom. In as much as wisdom connects very disparate religious traditions, it can be fruitful as a basis for discussion leading to a global religious ethic of sustainability in a way which importantly chimes with the message of *Laudato Si'*. It is also important to point out that practical wisdom is both individual and political. Hence, it has a social dimension as well. Prudence in a popular cast of mind is often portrayed as caution about taking risks, at least as applied to political decision making. The classical notion is so different that it is worth considering in more detail what each element involves and its implications for practical action.

Prudence, in the classical tradition, has a number of different facets that are worth highlighting in this context. In the first place, it is sensitive to *memory of the past*, that is, it is conscious of the history of what has gone before and has learnt lessons from this history. Secondly, practical wisdom is conscious of

what is the case in the present, *circumspection*, and is open to being taught. This openness is an essential ingredient of all learning, whatever level and whatever the final goal of such learning. Deliberation needs to include, therefore, consultation with others, so that if an important decision is to be made, those with relevant expertise need to be brought to the same table.

In an ecclesial context this means gathering representatives from the parish and discerning together what needs to be done. Practical wisdom is also able to make correct decisions in the face of the unexpected. Given the number of emergencies that are constantly surfacing as climate change begins to escalate and become more extreme, the ability to make good decisions in the face of the unexpected is crucially important. Practical wisdom also combines caution and foresight. Caution is awareness of where mistakes have been made in the past and being able to adjust future policy in the light of those mistakes. Can foresight enable churches to see into the future with respect to what different strategies might entail and how each might be implemented? Practical wisdom is wisdom orientated towards the common good. Although there are philosophical debates about what this good might entail, a vision for the public good, that is, what is good for the whole community and not just for an individual church, for example, goes some way towards expressing what it intends.

If different churches start to develop sustainable strategies and practices in their local contexts, then they also need to be places where there is a strong sense of being at home, engendering connectivity with the past. Does sustainability as practised in the church take into account this need for *memory*, which is also another vital aspect of prudential reasoning? Ecologist and Anglican priest John Rodwell questions whether “the sustainability process knows how to handle the past at all” [90]. There is, furthermore, a lack of appreciation in visions of a sustainable future as to whether justice has been done to the past, for the focus is on the needs of future generations, or that of the more immediate ecological community.

In addition to prudence, the virtues of *compassion* and its associated virtue *mercy* help connect us with both the needs of the poorest of the poor and the creatures suffering on planet Earth. The theme of



mercy has been central to Pope Francis' pontificate, yet it recalls earlier papal teaching, including Pope John XXIII's opening speech to the second Vatican Council where he called for the Church to engage in the "medicine of mercy" [91]. Later, Pope John Paul II indicated that "the word and the concept of 'mercy' seem to cause uneasiness in man, who, thanks to the enormous development of science and technology, never before known in history, has become the master of the earth and has subdued and dominated it. This dominion over the earth, sometimes understood in a one-sided and superficial way, seems to leave no room for mercy." [92]

Behind this discussion is an important principle, namely, the principle of *mercy*. As Jon Sobrino suggests, "everything, absolutely everything, turns on the exercise of mercy" [93]. Sobrino uses the term *miser cordia*, sometimes translated as compassion. As Aquinas recognised, the mercy of God, unlike expressions of human mercy, can never contravene justice, as God is not bound by a higher law [94]. Jon Sobrino fills out Aquinas' account of what human mercy entails by insisting on human imitation of Jesus' radical acts of mercy which is specifically orientated towards those who are most vulnerable [95]. Sobrino explores the *material, social and structural* dimensions of what mercy means. But he confines his attention to structural flaws in society that impact most on the lives of impoverished human communities. He does not, however, expand his ideas on structural and social change to include the vulnerable and suffering creatures of the earth, which, it seems to me, is vital to consider.

Mercy is particularly relevant in situations of innocent suffering. Those who are suffering the most are those that have done least to deserve it, including creatures unaware of the reasons for change. Both those who are suffering and those caught up in considering the structural nature of such problems and the complexities in finding their resolution often feel a sense of paralysis. Yet, as Gustav Gutierrez pointed out: "are human beings capable, in the midst of unjust suffering, of continuing to assert their faith in God and speak of God without expecting a return?" [96] Further, the biblical character of Job expresses ultimate hope in God in the midst of his innocent suffering, but in an inclusive way, so that he "practiced a kind of ecological justice towards

the earth, mother of life and source of food for the poor" [97]. Gutierrez believes that Job provides the basis for an adequate theological response to innocent suffering firstly as a prophetic one through solidarity with those that are poor and secondly through contemplation.

Innocent suffering applies not just to those humans who are suffering unfairly, but to the billions of creatures who are losing their lives in ecocide. Further, solidarity is a term which needs to encompass not just those who are poor but also the creatures of the Earth as well. We need to start to think within their world as if we are also one of them. In that solidarity the virtue of mercy can be born.

While it is easier for us to identify with those creatures most like ourselves, the statistics on biodiversity loss hide the suffering of millions of creatures that are also part of this innocent suffering. The role for the church is to live what it preaches: if we truly believe that the message of the Gospel is one of mercy and compassion, then that means that acting sustainably to reduce one's carbon footprint in any way possible is no longer a prophetic option, but the responsibility of every Christian.

Virtues are formed in Christian communities through practices of faith, and it is in the prayerful and sacramental life of the Church, in so far as it is inclusive in its attention to creation, that these virtues find expression in ecologically relevant ways. It is not as if Paul envisaged an ecological agenda when he speaks of the theological virtues of faith, hope, and love in his first letter to the Corinthians. Rather, when combined with reflection on the importance of the idea of creation in the Hebrew Bible, the expression of these virtues cannot avoid an ecological agenda. Love, for example, pays attention to the disproportionate impact of environmental harms on the poorest of the poor, especially women, and provides the underlying motivation for environmental justice and its gendered expression [98]. Faith never gives up in spite of recognition that the environmental problems such as that engendered by climate change form a series of complex and overlapping issues, sometimes known as "wicked" problems because of their intractability [99]. Hope refuses to accept, as many secularists do, that all we can hope for are local agreements [100].

Hope that is informed by faith is prepared to be bold in considering larger structural change as well as smaller changes at the local level.

Sabbath practices which stress that time is holy not only help to generate hope and instil love for all creation, and recognition of the deep interconnectedness between persons and other creatures, they also remind Christian communities to slow down and so begin to move away from compulsive habits of consumerism that contribute to ecological harms, including climate change [101]. Further, within those ecclesial practices it is important to include creation in the teaching ministry of the church instilled through catechesis, homiletics, and prayer so that the practices of faith match and cohere with other practices of sustainable living. Other practical steps include aspects which contribute to decarbonisation of a given community, including choices about what to eat in shared meals as well as choices about means of transport.

### Supporting Personal Conversion in the Diocese

As mentioned above, any sustainability strategy implemented on the diocesan level should also involve plans to support individual members in their personal conversion toward more ecological and social justice. Aside from offering spiritual guidance, this should also include education on ecological matters and their social correlates. To that end, it might be helpful to hold classes or workshops run by scientists or well-informed environmental advocates from inside or outside the diocese. Spiritual education and spiritual exercises with an emphasis on the crisis could be developed and led by diocesan members. But perhaps most the most effective strategy would be for dioceses to develop alternate liturgies of both praise and lament, crafting homilies which are intended to celebrate creation and focus on eco-social justice. Given the need for communal ecological conversion of the Church, it is important that all aspects of Church life are addressed so as to foster a fully integrated approach to integral ecology.

## 5. CONCLUSION

This report has sought to outline, from a theological perspective, how the lens of integral ecology as developed in *Laudato Si'* can inform the carbon transition framework in the Roman Catholic Church. Presupposed in this question is the following more basic one, namely, is the suffering of nature, the warming of the atmosphere, and its impact on biodiversity of theological relevance? Moreover, is it a pressing issue for Catholics? These questions seem moot in the light of today's environmental crisis, especially when one factors in the tremendous human suffering anthropogenic climate change causes. Already today, it is responsible for at least 150,000 deaths annually, a number that is expected to rise to 250,000 by 2050 [102]. Nonetheless, given that many Catholics still worry more about life after death rather than what lies right in front of us, posing the question is not at all trivial. Though overall a dwindling position, the conviction that Christians should concern themselves more with how to go to heaven than with how the heavens go is no maxim of the past [103]. Even today, five decades after the second Vatican Council, many Catholics see the Church as the last bastion protecting the true faith against the onslaught of the modern world. Is it not more important to save the Church and secure for humanity eternal salvation than worrying about how to safeguard nature?

In a way, this has been the pressing question underlying the present paper. It set out to describe the theological foundation based on Pope Francis' argument for integral ecology, which means radical ecological conversion and decisive actions, such as implementing a comprehensive decarbonization strategy at the diocesan level. Key here was the call to a global transition from the technocratic paradigm to the metaphysical framework of integral ecology laid out in *Laudato Si'*. The fact that Pope Francis wrote this encyclical and that, in doing so, moved the socio-ecological crisis into the very centre of Catholic Social Teaching does not change the fact that many Catholics still need encouragement in order to discern the signs of the times. While the encyclical's

message has been well-received in general, particularly by the laity, there has been and continues to be significant push-back in the Church. It was the hope of this study that by laying out the theological foundations for a Catholic ecological conversion and for integral ecology those still sceptical might still be moved to begin their own conversion.

The arc of the theological argument proposed here could be summarized as follows: with integral ecology *Laudato Si'* presents a holistic framework for how Christians and other believers can live their lives, interact with each other and with nature, and relate to God. Theologically, such a transformation is justified from various viewpoints. Integrality is a mindset that accepts the interconnectedness that defines creation on all levels. According to a theology of creation, this deep link, which is so readily perceptible in nature and its laws that constrain and liberate the web of life, has its very origin in the divine creation of the universe. Humanity is part of this web and, as such, exists in creaturely fellowship with all other creatures. Christian anthropology has frequently portrayed humanity as stewards of creation. We are part of creation and must live with it in fellowship rather than see ourselves as superior to all other life. But our particular cognitive abilities have given rise to science and technology, and thus

have empowered us to cause greater destruction than any other creature. This power comes with the responsibility to use it for good. From the perspective of moral theology, such good must be the common good, and it need not be limited to humans alone. Taken together, theology suggests that a transition into integral ecology is the only acceptable way of living according to our God-given constitution, respecting and safeguarding the creation that belongs to God, and not to us. Doing so always implies the preferential option for the poor, another reason why from a theological outlook integrality is the only way forward. Crucial for such a transformation is radical ecological conversion, a change of heart affecting the entire person and in turn the community in which he or she lives. Biblical studies have long identified conversion as an essence of the Christian life to which we are called. In times of crisis, such as the ecological *kairos* of our days, we must question the meaning of our existence, acknowledge our failures, and return to our true, God-intended being. As a community, the Church must equally convert and carry this prophetic spirit into the world. It can do so at the highest level of intergovernmental diplomacy, as well as at the diocesan level. Engaging in a decarbonization strategy is no longer optional – it is essential to the life of virtue to which God has called us.

## NOTES

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[5] S.M. Stanley. “Estimates of the magnitudes of major marine mass extinctions in earth history,” *Proceedings of the National Academy of Sciences USA* 113, no. 42 (2016), E6325–E6334; J.L. Payne and M.E. Clapham. “End-Permian mass extinction in the oceans: An ancient analog for the twenty-first century?” *Annual Review of Earth and Planetary Sciences* 40 (2012), 89–111; M.J. Benton. *When Life Nearly Died. The Greatest Mass Extinction of All Times*, revised edition (London: Thames & Hudson, 2015), 203; S. Sahney and M.J. Benton. “Recovery from the most profound mass extinction of all time,” *Proceedings of the Royal Society B* 275 (2008), 759–765.

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[7] As a matter of fact, many scientists are convinced we have already entered Earth’s sixth mass extinction (A.D Barnosky, N. Matzke, S. Tomiya, et al. “Has the Earth’s sixth mass extinction already arrived?” *Nature* 471 [2011], 51–57; Ceballos, G., P.R. Ehrlich, A.D. Barnosky et al. “Accelerated modern human–induced species losses: Entering the sixth mass extinction,” *Science Advances* 1, no. 5 [2015], e1400253). Currently, the anthropogenic loss of biodiversity due to land use change, overexploitation, and pollution poses the far greater and imminent risk to earth’s wellbeing than climate change, even though climate-driven changes are increasingly interacting with these drivers of extinction, exacerbating their impacts on nature and society. (W. Steffen, K. Richardson, J. Rockström, et al. “Planetary boundaries: Guiding human development on a changing planet,” *Science* 347 [2015], 736; World Wildlife Fund for Nature, “Living Planet Report 2020. Bending the Curve of Biodiversity Loss,” WWF, <https://livingplanet.panda.org/en-us/> [accessed December 18, 2021]; A.E. Cahill, M.E. Aiello-Lammens, M.C. Fisher-Reid et al. “How does climate change cause extinction?” *Proceedings of the Royal Society B* 280 no. 1750 [2013], 20121890; C. Román-Palacios and J.J. Wiens. “Recent responses to climate change reveal the drivers of species extinction and survival,” *Proceedings of the National Academy of Sciences USA* 117, no. 8 [2020], 4211–4217). In the

end, though, all these human-caused rapid ecological changes jeopardize biosphere integrity, which is why biodiversity loss is the most pressing socio-ecological challenge we are facing today.

[8] The Intergovernmental Panel on Climate Change (IPCC). “Climate Change 2014 Synthesis Report,” [https://www.ipcc.ch/site/assets/uploads/2018/02/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf) (accessed April 8, 2021).

[9] J.C. Rocha, G. Peterson, Ö. Bodin and S. Levin. “Cascading regime shifts within and across scales,” *Science* 362 (2018), 1379–1383; T.M. Lenton, J. Rockström, O. Gaffney et al. “Climate tipping points – too risky to bet against,” *Nature* 575 (2019), 592–595.

[10] See for example the *Interfaith Declaration on Climate Change*, <https://interfaithdeclaration.org/index.html>. Also J.A. Wardekker, A.C. Petersen and J.P. van der Sluijs, “Ethics and public perception of climate change: Exploring the Christian voices in the US public debate,” *Global Environmental Change* 19, no. 4 (2009), 512–521; W. Jenkins, E. Berry and L.B. Kreider, “Religion and Climate Change,” *Annual Review of Environment and Resources* 43 (2018), 85–108.

[11] Pope Francis, “*Laudato Si’*: On Care for our Common Home,” Vatican, [http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco\\_20150524\\_encicla-laudato-si.html](http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_encicla-laudato-si.html) (accessed March 12, 2020).

[12] In his apostolic letter *Octogesima Adveniens* from 1971, Pope Paul VI observed how in view of humanity's excessive consumption and destruction of natural resources, the Christian must "take on responsibility, together with the rest of men, for a destiny which from now on is shared by all." (Paul VI, *Octogesima Adveniens* 21, Vatican, [http://www.vatican.va/content/paul-vi/en/apost\\_letters/documents/hf\\_p-vi\\_apl\\_19710514\\_octogesima-adveniens.html](http://www.vatican.va/content/paul-vi/en/apost_letters/documents/hf_p-vi_apl_19710514_octogesima-adveniens.html) [accessed January 3, 2021].) Already in his first encyclical, John Paul II warned of the "the threat of pollution of the natural environment in areas of rapid industrialization," and later call for an "ecological conversion" in response to the maltreatment of God's creation. (John Paul II, "*Redemptor hominis*," Vatican, [http://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf\\_jp-ii\\_enc\\_04031979\\_redemptor-hominis.html](http://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_04031979_redemptor-hominis.html) [accessed April 21, 2021]; John Paul II, "Ecclesia in America," Vatican, [http://www.vatican.va/content/john-paul-ii/de/apost\\_exhortations/documents/hf\\_jp-ii\\_exh\\_22011999\\_ecclesia-in-america.html](http://www.vatican.va/content/john-paul-ii/de/apost_exhortations/documents/hf_jp-ii_exh_22011999_ecclesia-in-america.html) [accessed December 22, 2020]) Pope Benedict XVI repeatedly addressed the problem of environmental degradation, and in *Caritas in veritate* speaks of a "pressing moral need for renewed solidarity" with nature. (Benedict XVI, "*Caritas in veritate*," Vatican, [\[veritate.pdf\]\(http://www.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf\_ben-xvi\_enc\_20090629\_caritas-in-veritate.pdf\) \[accessed October 14, 2020\]\)](http://www.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20090629_caritas-in-</a></p>
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[13] *Laudato Si'*, §49. Here, of course, Pope Francis adopts Leonardo Boff's phrase (L. Boff. *Cry of the Earth, Cry of the Poor* [Maryknoll: Orbis, 1997]).

[14] *Laudato Si'*, §104. See also Dogmatic Constitution *Gaudium et spes*, §34. Vatican, [https://www.vatican.va/archive/hist\\_councils/ii\\_vatican\\_council/documents/vat-ii\\_const\\_19651207\\_gaudium-et-spes\\_en.html](https://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19651207_gaudium-et-spes_en.html) (accessed March 4, 2021).

[15] *Ibid.*, §105

[16] Hans Jonas locates the beginning of this anthropocentric behavior in the Hellenistic notion that nature was ethical neutral, simply because nature in all its might was perceived as impervious to human actions (H. Jonas. *Das Prinzip Verantwortung* [Frankfurt a.M.: Suhrkamp Verlag, 1979], particular in Chapter 1).

[17] For a summary of this history, see Bonneuil \*.

[18] Denis O'Hara, Matthew Eaton, and Michael Ross, eds., *Integral Ecology for a More Sustainable World: Dialogues with Laudato Si'* (Lanham: Lexington, 2019); Gerard Magill and Jordan Potter, *Integral Ecology: Protecting Our Common Home* (Cambridge: Cambridge Scholars Press, 2018).

[19] Ryszard Sadowski was not alone in drawing parallels between the use of integral ecology in *Laudato Si'* and in Ken Wilber's work and those influenced by him (R.F.

Sadowski. "The concept of integral ecology in the encyclical *Laudato Si'*" *Divyadaan* 27, no. 1 [2016], 21-44).

[20] For an introduction see R.J. Berry, *Ecology and the Environment: The Mechanisms, Marring and Maintenance of Nature* (Philadelphia: Templeton Science & Religion Series, 2011).

[21] In addition to Haeckel's definition ecology is also defined (1) as the study of the distribution and abundance of organisms (H.G. Andrewartha and L.C. Birch, *The Distribution and Abundance of Animals* [Chicago: University of Chicago Press, 1954]) and (2) as the study of ecosystems (E.P. Odum, *Fundamentals of Ecology*, 3rd edition [Philadelphia, Saunders, 1971]).

[22] W.A. Reiners, J.A. Lockwood, D.S. Reiners, and S.D. Prager. "100 years of ecology: what are our concepts and are they useful?" *Ecological Monographs* 87, no. 2 (2017), 260-277. Biologists still have no generally accepted concept of gene, work with at least 22 concepts of species, struggle with the consequences of different understandings of forest, and while biology is the science of life, what life really is remains a matter of dispute. There are many more concepts in biology with equally diverse definitions.

[23] *Laudato Si'*, §138.

[24] *Laudato Si'*, §139. Emphasis added. This understanding of "environment" is indeed closer to the original meaning of the word than the one introduced by Jakob Johann

von Uexküll in 1909 (J.J. von Uexküll. *Umwelt und Innenwelt der Tiere* [Berlin: Springer, 1909]) and still in use amongst biologists today. Etymologically, environment simply denotes the state of being encircled, which was indeed how it was used when it entered the English language in the early 17th century. It was with Thomas Carlyle's 1827 rendering into English of Goethe's *Umgebung* (physical surroundings) as *environment* that the term implied the totality of all external influences on an individual or organism. With von Uexküll, then, *environment* was generalized to imply the surroundings affecting all organisms rather than just *humans*.

[25] Boff (1995), 68; F. Guattari, *The Three Ecologies*, translated by I. Pindar and P. Sutton (London and New Brunswick: The Athlone Press, 2000). See also Leonardo Boff, 'The Magna Carter of Integral Ecology: Cry of the Earth: Cry of the Poor', <https://leonardoboff.org/2015/06/18/the-magna-carta-of-integral-ecology-cry-of-the-earth-cry-of-the-poor/>

[26] Guattari (2000), 50.

[27] *Laudato Si'*, §66

[28] For example *Laudato Si'*, §§10, 11, 15, 63, 118, 138ff.

[29] Pope Francis, *Fratelli Tutti: On Fraternity and Social Friendship* (London: Catholic Truth Society, 2020).

[30] *Laudato Si'*, §11, my emphasis.

[31] *Laudato Si'*, §3.

[32] *Laudato Si'*, §7.

[33] *Laudato Si'*, §§15, 216ff.

[34] Dogmatic Constitution on the Church, *Lumen Gentium*, §25. Vatican, [http://www.vatican.va/archive/hist\\_councils/ii\\_vatican\\_council/documents/vat-ii\\_const\\_19641121\\_lumen-gentium\\_en.html](http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19641121_lumen-gentium_en.html) (accessed January 15, 2021).

[35] Introduced to theology and science (a sub-discipline of fundamental theology) by Catholic philosopher and physicist Ernan McMullin, the consonance approach demands Christians always seek the reconciliation of scientifically-construed explanations of nature with theological models of the world as God's creation (E. McMullin. "How should cosmology relate to theology?" in *The Sciences and Theology in the Twentieth Century*, edited by A.R. Peacocke [Notre Dame: University of Notre Dame Press, 1981], 26).

[36] *Laudato Si'*, §65.

[37] English translation from *The New Oxford Annotated Bible: New Revised Standard Version with Apocrypha*, Fully Revised Fourth Edition, edited by M.D. Coogan (Oxford: Oxford University Press, 2010), 12-13.

[38] M.J. Erickson, *Christian Theology* (Grand Rapids: Baker Book House, 1983), 495-517; M. Cortez, *Theological Anthropology: A Guide for the Perplexed* (London: T&T Clark, 2010).

[39] *Gaudium et spes*, §12.

[40] Dominion from Old French *dominion* as "rule" or "power", and from Medieval Latin

*dominionem* for "property" or "ownership", and Latin *dominus* for "lord" or "master".

[41] *Laudato Si'*, §116; 236.

[42] For a discussion of exegetical problems with the notion of stewardship see R. Bauckham, *The Bible and Ecology* (Baylor University Press, 2010): pp. 1-36. It is also worth noting that Islamic environmental religious traditions commonly refer to the notion of stewardship and some contemporary philosophers still argue it has moral valence. See R. Attfield, *Environmental Ethics: A Very Short Introduction* (Oxford: Oxford University Press, 2018): pp. 94-98.

[43] *Laudato Si'*, §65.

[44] *Laudato Si'*, §56, 65, 69.

[45] NASA Global Climate Change, <https://climate.nasa.gov> (accessed May 28, 2021).

[46] M. Pelto and WGMS network, "Alpine glaciers," in *State of the Climate*, Special Supplement to the *Bulletin of the American Meteorological Society* 99, no. 8 (2018), S23-S25.

[47] F. Seebacher and E. Post, "Climate change impacts on animal migration," *Climate Change Responses* 2, article 5 (2015), DOI 10.1186/s40665-015-0013-9; M. Clairbaux, J. Fort, P. Mathewson, W. Porter, H. Strøm and D. Grémillet, "Climate change could overturn bird migration: Transarctic flights and high-latitude residency in a sea ice free Arctic," *Scientific Reports* 9 (2019), 17767. DOI. [org/10.1038/s41598-019-54228-5](https://doi.org/10.1038/s41598-019-54228-5).

[48] K. Gao, J. Beardall, D.-P. Häder, J.M. Hall-Spencer, G. Gao and D.A. Hutchins, “Effects of Ocean acidification on marine photosynthetic organisms under the concurrent influences of warming, UV radiation, and deoxygenation,” *Frontiers of Marine Science* 6 (2019), 322. DOI 10.3389/fmars.2019.00322; H. Kawahata, K. Fujita, A. Iguchi et al., “Perspective on the response of marine calcifiers to global warming and ocean acidification: Behavior of corals and foraminifera in a high CO<sub>2</sub> world ‘hot house’,” *Progress in Earth and Planetary Science* 6, article 5 (2019), doi.org/10.1186/s40645-018-0239-9.

[49] By the end of 2019, 43.4% of the world’s net wealth was in the hands of only 1% of the global population, while roughly 90% of the world population held about 16% of the world’s net wealth (Credit Suisse, *The Global Wealth Report 2020*, <https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html> [accessed January 15, 2021]). At this point, it is unclear how the COVID-19 pandemic has affected the distribution, but there is at least some data suggesting that the gap between rich and poor may have widened even further. Low-skilled workers, women, minorities, the young, and small businesses have suffered severely, whereas those associated with industries who thrived have benefited. The top billionaires, especially in tech, have greatly increased their wealth. Given that the privileged few stand to lose far more, it is likely they will be most

resistant to calls for an ecological conversion.

[50] Radical from the Latin *radix*, or “root”.

[51] John Paul II, “General Audience Wednesday, January 17, 2001,” Vatican, [https://www.vatican.va/content/john-paul-ii/en/audiences/2001/documents/hf\\_jp-ii\\_aud\\_20010117.html](https://www.vatican.va/content/john-paul-ii/en/audiences/2001/documents/hf_jp-ii_aud_20010117.html) (accessed December 22, 2020).

[52] Idem.

[53] Etymologically, conversion originates from the Latin *convertere*, viz. turn back. Thus, the German translation of ecological conversion as *ökologische Umkehr*, i.e., ecological turning back, is indeed quite adequate. In its Spanish original, *Laudato Si’* refers to *conversión ecológica*. *Laudato Si’*, §216ff.

[54] *Laudato Si’*, Chapter 5.

[55] Not surprisingly, then, the chapter is headlined “Ecological Education and Spirituality”.

[56] *Laudato Si’*, §202, author’s emphasis.

[57] Ibid.

[58] For more on the concept of “ecological conversion”, see T. Howles, J. Reader and M. Hodson, “Creating an ecological citizenship: philosophical and theological perspectives on the role of contemporary environmental education,” *Heythrop Journal* 59, no. 6 (2018), 997-1008.

[59] That we are in spiritual crisis, Francis underscores by citing the words of Pope Benedict XVI: “the external deserts in the world are growing, because the

internal deserts have become so vast.” *Laudato Si’*, §217.

[60] Idem. See also Celia Deane-Drummond, ‘Biodiversity and Ecological Responsibility: Wonder, Value and Paying Attention to All Creatures’, *Antonanium* XCVI (2021): 87-113.

[61] Pontifical Council for Justice and Peace, *Compendium of the Social Doctrine of the Church*, Part II, Chapter 10, iv (London: Bloomsbury, 2004), 235.

[62] The Pope refers to his namesake Saint Francis of Assisi when he concludes that “a healthy relationship with creation is one dimension of overall personal conversion, which entails the recognition of our errors, sins, faults and failures, and leads to heartfelt repentance and desire to change.” *Laudato Si’*, §218. In a sense, then, the position of the encyclical is not new, but places a heretofore less stressed emphasis on reconciliation with *all of creation* and not only with our neighbor and God.

[63] *Metanoia*, found in the New Testament 34 times as μετανοειν and 22 times as μετανοια, is the Greek rendering of the Hebrew *shûbh* (שׁוּב) and, as such, refers to a change in one’s life as the result of penitence and spiritual reorientation, which makes it very close in meaning to conversion. In the Septuagint *shûbh* was translated as *epistrefein* (ἐπιστρεφειν) or *apostrefein* (ἀποστρεφειν). Each of these terms are within the same meaning horizon though

emphasize slightly different aspects of the transformation towards self-transcendence and holiness.

[64] T. Prendergast, "Conversion," in *Eerdmans Dictionary of the Bible*, edited by D.N. Freedman (Grand Rapids: William B. Eerdmans, 2000), 277; K. Rahner, "Conversion," in *Encyclopedia of Theology: The Concise Sacramentum Mundi*, edited by K. Rahner, 291-295 (New York: Crossroad, 1991 [1975]); J. Ratzinger, *Einführung in das Christentum* (München: Kösel-Verlag, 2006 [1968]), 45.

[65] B. Lonergan, *Method in Theology* (Toronto: University of Toronto Press, 1971); P. Tillich, *Systematic Theology*, Volume Three (Chicago: University of Chicago Press, 1963), 219; D.L. Gelpi, *The Conversion Experience: A Reflective Process for RCIA Participants and Others* (New York: Paulist Press, 1998).

[66] K. Rahner, *Foundations of Christian Faith: An Introduction to the Idea of Christianity* (New York: Crossroad, 1978), 127.

[67] M. Heidegger, *Being and Time*, translated by J. MacQuarrie and E. Robinson (New York: Harper Perennial, 2008 [1962]), 33.

[68] Heidegger (2008 [1962]), 228ff.

[69] Rahner (1978), 127.

[70] K. Rahner "Über das Verhältnis von Natur und Gnade," in *Schriften zur Theologie I* (Einsiedeln: Benziger Verlag, 1954), 338.

[71] Rahner (1991 [1975]), 291.

[72] *Laudato Si'*, §19.

[73] There is no empirical evidence truly supporting this assumption, but if by affective conversion we mean a turn toward genuine acts of love representative of God's love for us, it seems there are many who undergo affective conversion without yet philosophically reflecting on its nature.

[74] See for example K. Beyerl, O. Putz and A. Beckwoldt, "The role of perceptions for community-based marine resource management," *Frontiers in Marine Science* 3, article 238 (2016), doi: 10.3389/fmars.2016.00238; M.J. Hornsey and K. Fielding, Understanding (and Reducing) Inaction on Climate Change," *Social Issues and Policy Review* 14, no.1, (2020), 3-35.

[75] See for example J. Milbank, *Beyond Secular Order: The Representation of Being and the Representation of the People* (Oxford: Wiley Blackwell, 2013).

[76] *Laudato Si'*, § 220.

[77] *Laudato Si'*, §§224, 230, 231.

[78] *Laudato Si'*, §231.

[79] Idem.

[80] Pope Francis, *Querida Amazonia* 33, Vatican, [http://www.vatican.va/content/francesco/en/apost\\_exhortations/documents/papa-francesco\\_esortazione-ap\\_20200202\\_querida-amazonia.html](http://www.vatican.va/content/francesco/en/apost_exhortations/documents/papa-francesco_esortazione-ap_20200202_querida-amazonia.html) (accessed December 27, 2020).

[81] P. Tillich, "Kairos (1922)" in *Ausgewählte Texte*, edited by C. Danz, W. Schüßler, and E.

Sturm, 43-62 (Berlin: Walter de Gruyter, 2008).

[82] Idem., 43; I. Bekker, "Kairos and Carnival: Mikhail Bakhtin's Rhetorical and Ethical Christian Vision," *Religions* 9, 79 (2018), doi: 10.3390/rel9030079.

[83] Πεπληρωται ο καιρος και ηγγικεν η βασιλεια του θεου μετανοειτε και πιστευετε εν τω ευαγγελιω. ("The time [kairos] is fulfilled, and the kingdom of God has come near; repent [metanoete], and believe in the good news.") For English translation: *The New Oxford Annotated Bible: New Revised Standard Version with the Apocrypha*, Fully Revised Fourth Edition (Oxford: Oxford University Press, 2010). Aside from Mark 1:15, kairos is used another 85 times in the New Testament. Throughout, it connotes the notion of a suitable or necessary time for action.

[84] R. Schnackenburg, "Kairos. I. In der Schrift," in *Lexikon für Theologie und Kirche*, edited by K. Rahner et al. (Freiburg i. Br.: Herder, 1960), 1243.

[85] For interpreting the signs of the times, see Matthew 16:3: το μεν προσωπον του ουραου γνωσκετε διακρινειν, τα δε σημεια των καιρων ου δυνασθε ("you know how to interpret the appearance of the sky, but you cannot interpret the signs of the times" [shmeia ton kairon]).

[86] P. Tillich, *Systematic Theology*, Volume Three (Chicago: The University of Chicago Press, 1963), 370.

[87] Ibid.

[88] This section draws on Celia



- Deane-Drummond, *Ecotheology* (London: Darton, Longman and Todd, 2008).
- [89] For more on this, see J. Baird Callicott, *Earth's Insights: A Multicultural Ecological Ethics from the Mediterranean Basin to the Australian Outback* (Berkeley: University of California Press, 1994), esp. chapters 3-8.
- [90] J.S. Rodwell, 'Forgetting the Land', *Studies in Christian Ethics* 21, no. 2 (2008), 269-286.
- [91] See Pope Francis, *The Church of Mercy: A Vision for the Church* (Chicago: Loyola, 2014).
- [92] John Paul II, *Dives in Misericordia: On the Mercy of God*, Vatican, [https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf\\_jp-ii\\_enc\\_30111980\\_dives-in-misericordia.html](https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_30111980_dives-in-misericordia.html) (accessed June 17, 2021), § 2.
- [93] J. Sobrino, 'Spirituality and the Following of Jesus', in *Mysterium liberationis: Fundamental Concepts of Liberation Theology*, edited by I. Ellacuria and J. Sobrino, 677-701 (Maryknoll: Orbis, 1993), 682 .
- [94] Thomas Aquinas, *Commentary on Letter to the Ephesians*, Chapter 2, lecture 2.
- [95] T. Walatka, "The Principle of Mercy: Jon Sobrino and the Catholic Social Tradition," *Theological Studies* 77, no. 1(2016), 96-117.
- [96] G.Gutiérrez, *On Job: God Talk and the Suffering of the Innocent*, translated by Matthew J. O'Connell (Maryknoll: Orbis, 1987), 1.
- [97] G. Gutiérrez (1987), 42.
- [98] L. Cahill, "Laudato Si': Reframing Catholic Social Ethics," *Heythrop Journal* LIX (2018), 887-90.
- [99] S. Gardiner, *A Perfect Moral Storm: The Ethical Challenge of Climate Change* (Oxford: Oxford University Press, 2014).
- [100] D. Jamieson, *Reason in a Dark Time. Why the Struggle Against Climate Change Failed and What it Means for Our Future* (Oxford: Oxford University Press, 2014).
- [101] N. Wirzba, *Living the Sabbath: Discovering the Rhythms of Rest and Delight* (Brazos Press, 2006).
- [102] *Climate Change*, World Health Organization, <https://www.who.int/heli/risks/climate/climatechange/en/>; *Key Facts: Climate Change*, World Health Organization, <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health> (both accessed May 21, 2021). According to a recent study, if left unchecked, climate change related annual death rates might rise to as many as 85 per 100,000 people globally by the end of the century (T.A. Carleton, A. Jina, M.T. Delgado et al., "Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits", National Bureau of Economics Working Paper No. 27599, <http://www.nber.org/papers/w27599> (accessed May 28, 2021).
- [103] This peculiar formulation goes back to Galileo Galilei, who in a letter to Christina of Lorraine, Grand Duchess of Tuscany (1615) made the point that "the Holy Spirit's intention is to teach us how to go to Heaven, and not how the heavens go."

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