A Bishops' letter about the climate

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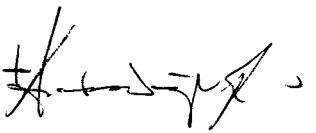
Foreword

Existence has always seemed almost limitless. There was a new continent to colonise when Europe became too poor and densely populated. Easily accessible energy has been available for a few hundred years. It has been so cheap that we have been able to squander it. We have quite simply become used to being able to expand out of crises.

We have now reached a few limits. More greenhouse gases in the atmosphere will definitely destabilise the climate. Will the earth be able to provide food for all of its billions of human inhabitants? Is fair distribution feasible when the struggle for survival becomes tougher? Does peace have any chance?

Has God equipped us to meet this crisis too? Do we have the spiritual, mental and material resources to meet this challenge? Can the basic structure of giving that Christian faith anticipates in life make us release our tight grip on what we have achieved and see the opportunities for and joy in a changed lifestyle?

With this Bishops' letter, we want to highlight the things that have real value and are what we humans value most highly, suggesting that if we care for these things, we can dare to make the necessary changes. For the sake of life!



Uppsala, March 2014
Anders Wejryd,
Archbishop

Introduction

Sharing the gift of life is a source of constant wonder. It does us good to wonder at our existence and the fact that the world we inhabit supports our lives day and night, through every breath we take, and has done so for millions of years of human evolution. Our bodies are made of stardust and a handful of earth contains almost as many living organisms as there are human beings on earth. Wonder is the mother of insight.

Wonder is also the right place to start to encourage awareness of climate change. We know that the way we live is threatening the many natural processes on which we all depend. The earth, our home, is exposed to climate change. The limits of our planet's ability to feed and support human beings and other species are being exceeded. This is largely because the world's population, primarily in the richest parts of the world, is using resources unsustainably.

We have lived with reports and forecasts of climate change since the 1980s. Our climate is the result of the interaction of complex systems and there is often a great distance between cause and effect in terms of both space and time. There are uncertainties and a lack of clarity. However, the knowledge we possess today does not allow us to postpone until tomorrow

what needs to be done now. Our human climate impact must decrease for the sake of the earth, for the sake of the world that God so loves that God gave us Jesus Christ.

The mission of Bishops involves '… giving strength to God's people in their vocation to interpret the signs of the times and testify to God's mighty deeds to all creation'.[1] These words are the reason for this Bishops' letter. Along with innumerable other people, we are fascinated by the delicacy of creation and the beauty of the earth. We want to reflect on the best knowledge about creation, in the light of our faith in God as Creator, Liberator and Giver of Life. In the discussions on climate change, Jesus's request rings in our ears: 'Hypocrites! You can look at the earth and the sky and predict the weather; why, then, don't you know the meaning of this present time?' (Luke 12:56).

The letter begins by summarizing what is currently known. Global emissions of greenhouse gases are continuing to increase. Living conditions for plants and animals are changing. International solidarity between human beings and states will be put to a hard test. Those who have contributed least to the critical situation risk being hit hardest. Questions relating to climate change raise questions relating to justice.

How did it come to this? Changes in how we have seen nature and our world down the ages have affected developments in science, technology and economics. This history also influences how we currently manage growth and consumption and think about ecology. Our feeling of solidarity with our fellow human

beings and our ability to organize societies in a socially, ecologically and economically sustainable manner have not kept pace with other developments.

Now it is time for science, politics, business, culture and religion, everything that is an expression of human dignity, to work together. The challenge of climate change is existential and spiritual because it concerns the basic conditions of human life in the deepest sense: what is the role of human beings in creation? What responsibility do we have for those who are far away? What should we do about our concerns? What can we hope for? Not least is the perspective of children important. Is our generation passing on the costs of the future of the earth to our children and grandchildren?

We need hope, to release power to act. Hope can begin in a song of praise for the beauty of nature and the love of the Creator. In the realm of God, everything is a gift before it becomes a task. Human beings are dissolubly part of the fabric of creation but still have a unique task. We live in the tension between the small and the big, limits and limitlessness, sin and restoration. Conversion is possible.

Faith releases the desire for the good. It produces the openness necessary to dare to change even in uncertain situations. The way forward involves both big and small steps and individual and shared responsibility. The transition to a fossil free economy required may involve many positive changes and enhanced

quality of life and it must be supported by a clear focus on fairness and justice.

The Bishops' letter ends with challenges to the Church of Sweden, its parishes, dioceses and national bodies, to all of our fellow human beings, to decision makers and public authorities, companies and organizations, the member states of the United Nations Framework Convention on Climate Change (UNFCCC), international decision makers and organizations and church leaders worldwide. We dare formulate these challenges not because we are closer to the goal than others. We also struggle against the inertia that prevents words from becoming deeds and we also share the experience that good ideas do not necessarily become good reality. However, we are driven by love of God and God's creation and the assurance that the mercy of God is greater than our best performances and our biggest failures.

Climate change is probably the biggest common challenge ever faced by humanity. The work to face this challenge must be reflected in social development and make us reassess how we think about lifestyle, welfare, sustainability and justice, for the sake of creation, for the sake of life and for the sake of our grandchildren and our grandchildren's grandchildren.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I What do we know?

The situation from a scientific perspective

We are on the threshold of a time of dramatic climate change. For the first time in human history, our impact on the environment is such that one of the fundamental conditions of life is changing. The climate changes constantly but the current global warming is happening very fast and is placing great strain on plants, animals and human communities.

Throughout the four and a half billion year history of the earth, its climate has always switched between periods of rain, drought, heat and cold. In the past three to five million years, the earth has undergone around thirty ice ages. We currently live in the *Holocene* epoch, an interglacial period with a milder, relatively stable climate that has represented an important precondition for human development over the past twelve thousand years. Nevertheless, the average global temperature has changed quite a lot. During the 10th century, for example, it was relatively high, a degree higher than today in our part of the world. A much colder period began around the 14th century. Periods of climate change in the past have often coincided with dramatic, violent periods of human history. The climate change we are seeing today is caused by human beings and its extent is such

that several researchers are talking about a new geological epoch – the *Anthropocene*.[2]

Science is unable to give us absolute truths but since the world's climate scientists began working together in the UN IPCC (Intergovernmental Panel on Climate Change) in 1988, they have presented us with an concerted view. The IPCC is a unique institution that compiles the state of research in a series of assessment reports roughly every six years.

A FEW FACTS FROM THE IPCC'S FIFTH ASSESSMENT REPORT

It is 95 per cent certain that human activities has been the dominant cause of the climate change that can be observed. The global average temperature increased by 0.85 degrees Celcius between 1880 and 2012. If the content of carbon dioxide in the atmosphere doubles compared with the preindustrial level, which is not improbable during this century, this is estimated to have the potential to result in a temperature rise of between 1.5 and 4.5 degrees. The global sea level is currently rising by approximately 0.3 cm per annum. It is estimated to rise by between 30 and 80 cm during this century and to continue to rise subsequently.*

In the past fifteen years, the globally averaged temperature has increased more slowly than expected, despite an increase in greenhouse gas (GHG) emissions. Reduced solar incident radiation, increased heat absorption in the oceans, volcanic eruptions, increased reflection of incoming radiation by aerosols in the atmosphere and deficiencies in the climate data models used are possible explanations of this. The slower temperature increase in recent years may quite simply be the result of the natural climate variability on which human impact is always superimposed.

* The figures are taken from sections B.1 and D.2 and table SPM 2.1 in the Summary for Policymakers..

The first part of the Fifth assessment report (AR5) was presented in autumn 2013. It detailed the knowledge about climate change and enhanced the image of the climate as perhaps the biggest challenge we face (see fact box).[3]

Global climate change has so far given rise mostly to relatively linear, predictable changes in the environment. However, when an ecosystem passes a certain point, a previously calm, often linear change process may suddenly become considerably more dramatic. Such non-linear process may involve *tipping-points* and lead to an entire ecosystem collapsing. One of several possible tipping-points in climate change could be the release of huge quantities of methane when the Arctic tundra thaws,[4] which may, in turn, lead to dramatically accelerated temperature increase.[5]

Things are moving in the wrong direction – global emissions are increasing!

Antropogenic climate change is caused by emissions of greenhouse gases (GHG), primarily carbon dioxide from energy production, transport systems, food production and industry. Roughly a fifth of human climate impact consists of deforestation and other changes in land use. The main strategies to stop climate change therefore primarily involve reducing society's direct emissions. Deforestation must also be stopped. This has been clear to the world community at least since the early 1990s,

when the United Nations Framework Convention on Climate Change was adopted.

We know today that renewable energy sources must replace fossil fuels if it is to be possible to stabilize the climate. It is necessary for emissions of greenhouse gases to decrease considerably and cease completely by the middle of the century. Measures must be taken fast. The later emissions start to decrease, the more difficult, the more expensive and the riskier it will be to reduce them to zero. Towards the end of the century, emissions of carbon dioxide probably need to be *negative*, i.e. more carbon dioxide is captured from the atmosphere, primarily via photosynthesis but also via technical separation, than is emitted.

However, we are still moving in the wrong direction. Figure 1 shows that global emissions need to level out and start falling dramatically in the next few years if it is to be possible to keep warming under two degrees, which is the target set in the United Nations Framework Convention on Climate Change. The figure also shows that actual emissions are continuing to increase, despite decades of climate debate and international negotiations. If we look at political commitments, there is nothing to indicate that emissions will level out or decrease in the next few years. The UN's calculations of countries' commitments to reduce emissions by 2020 show that they are insufficient to stop the increase in emissions, let alone to cause the emissions curve to move downwards.[6]

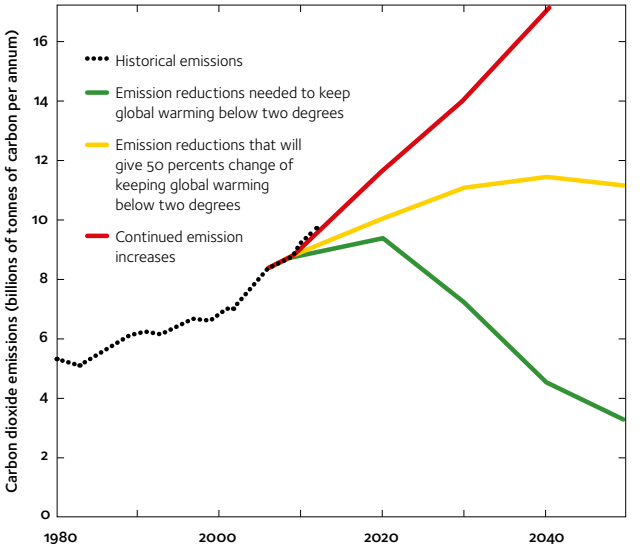


FIGURE 1. GLOBAL EMISSIONS SCENARIOS. The IPCC has calculated various scenarios for the development of GHG emissions. The green line shows the rapid decrease in global emissions that is likely needed to limit the temperature increase to two degrees compared with pre-industrial levels. The red line shows a worst case scenario of continued increases in emissions, which is expected to lead to an accelerated temperature increase that may be in the order of 3-5 degrees by the end of this century. The yellow emissions curve means a roughly 50 per cent probability that the temperature increase will be limited to two degrees. The black dotted line in the figure shows actual global emissions until now.

SOURCE: The figure represents an edited version of a figure in the preparatory works for the IPCC report. Glen P. Peters, et al. (2013), "The challenge to keep global warming below 2°C" Nature Climate Change 3, 4-6. The lines correspond to different representative concentration pathways scenarios in AR5: RCP3-D (green line), RCP4.5 (yellow line) and RCP8.5 (red line).

Climate and the environment

Environmental researchers have identified nine planetary boundaries, limits of human impact on the environment that may not be passed if human beings are to be able to continue to develop on the planet in the long term.[7] Climate change is one of these boundaries. The depletion of the ozone layer, chemical pollution, acidification of the oceans, global fresh water use and the loss of biodiversity are some of the others. Several of the boundaries are regarded as having already been passed (see Figure 2). It is urgently necessary to stop global warming but this does not reduce the importance of dealing with other serious environmental problems. When specific measures are formulated, it is important to bear other environmental issues in mind in order to achieve possible synergy effects and manage conflict among goals in a responsible manner.

What does this mean?

The climate issue is genuinely global but also very local. A wealth of local causes, human activities and biophysical mechanisms are interacting and leading to innumerable effects in complex networks of chains of events. This makes it difficult to gain a general picture of the climate issue. The difficulty of managing the climate issue is enhanced by the great distance between cause and effect in terms of both space and time. The emissions produced today will contribute to increased warming for many hundreds of years after the emissions have decreased and ceased.

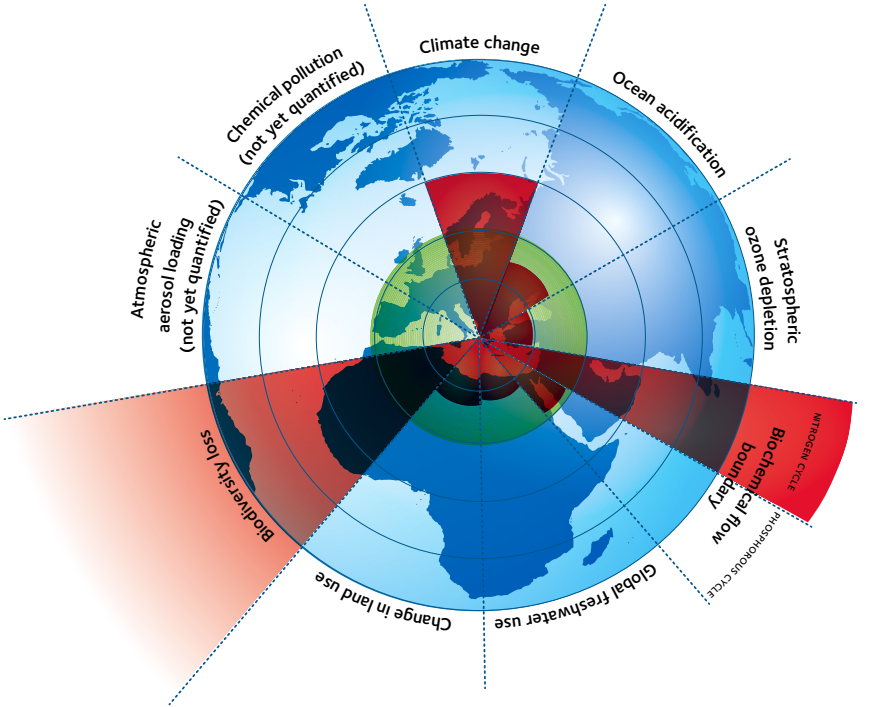


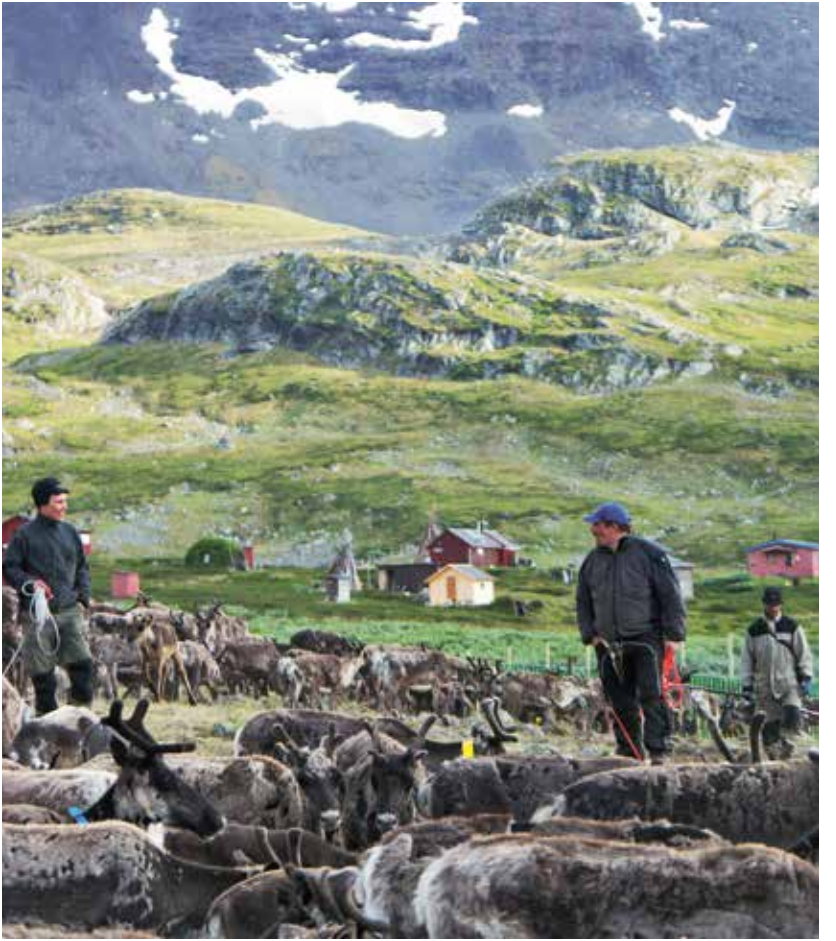
FIGURE 2. PLANETARY BOUNDARIES: life-supporting processes that must be managed sustainably. The 'safe operating space' (green area) has been exceeded for several of the processes, according to the researchers behind the study on planetary boundaries.

SOURCE: Stockholm Resilience Center.

Climate change will affect the conditions for all life on earth. The United Nations Framework Convention on Climate Change aims to prevent 'dangerous climate change', which has been interpreted in a number of political agreements as avoiding the temperature increase reaching (or exceeding) two degrees Celcius above the global average temperature in 1880. Today we know that a temperature increase of only 1.5 degrees can have very serious effects. If the current emissions trends do not radically change, keeping the warming below two degrees seems increasingly less realistic.

In many places, we are already seeing more extreme weather phenomena that can probably be linked to climate change. Changes in precipitation patterns (more unpredictable periods of rain, more serious floods and longer periods of drought) are having a negative impact on the conditions for agricultural production. This increases the risk of acute humanitarian disasters. In certain parts of the world, global warming is improving cultivation conditions, while the risk of insects and other pests may increase.[8]

Access to clean water will decrease dramatically in many regions when precipitation patterns change, glaciers melt and salt water penetrates into wells and agricultural land. The number of people affected by water stress and insecure water supply will probably increase. Waterborne diseases will be spread more easily. More heat waves and reduced access to clean water will have a negative impact on the health situation in many regions. A large



proportion of humanity lives in low-lying areas and near the sea, precisely the areas that are affected most when the sea level rises.[9]

When the temperature rises, the living conditions of animals and plants change and many species are unable to relocate. When the sea absorbs more carbon dioxide it becomes more acidic, which seriously affects coral reefs and other calcium-dependent organisms. The number of species is already decreasing at a fast rate. This trend will accelerate.[10]

Sweden's geographical location means that we are one of the least affected countries in the world. However, climate change will also be visible here. Forestry and agriculture will benefit from longer cultivation seasons but also be affected by greater risks of drought and flooding, as well as an increase in fungus and other pests. Hydro power production will increase but reindeer husbandry is negatively affected by an unstable snow climate with rapid fluctuations between periods of cold and thaw. More flooding brings an increase in damage to houses and other properties, roads and railways. In some areas of Sweden, the risk of landslide will increase.[11]

Unlike most developing countries, Sweden has the capacity to plan to some extent for expected changes. At the same time, economic and social crises in other parts of the world have inevitable repercussions in Sweden.

Will this definitely happen?

Knowledge about future climate change is subject to a range of uncertainties, both about how carbon dioxide emissions will change and about climate sensitivity, i.e. how much the earth is warmed by a certain quantity of emissions of greenhouse gases. Uncertainty concerning climate sensitivity is based on factors which include uncertainties in how cloud formation is affected by warming, the particle content in the air, increased quantities of water vapour, continued absorption of carbon dioxide by the ocean and the biosphere and a weakened albedo, i.e. white snow and ice melt and are replaced by darker surfaces that absorb more heat more easily. No one is able to predict exactly how the climate will develop. However, it is still essential that we act now. It will certainly not be possible to establish that there is an alarmingly high temperature increase until it is too late to avoid it. Uncertainty about how the climate system reacts to emissions cannot therefore be used as an excuse for postponing powerful measures until we have more certain information.

The only reasonable approach to the climate challenge is to act with caution. In the same way that, in our private lives, we avoid risks and take out insurance against risks, the world community needs to do everything to avoid serious climate change.

It's about people

It is difficult to distinguish climate change from natural variations but many of the extreme weather events experienced by people around the world today closely match researchers' predictions of how climate change will manifest itself. As a church, we are part of a global network. There has been much evidence of climate change from our twin dioceses and parishes in other parts of the world. We hear reports from the Philippines and Tuvalu, from South Sudan and Tanzania, from Brazil and Costa Rica, from Canada and the Arctic. These are reports of how day-to-day life is already being affected by changes in climate. The reports are about drought and flooding, and also about what happens when you can no longer rely on the rains coming, when diseases spread or salt water contaminates wells. As is so often the case, those who live in poverty are affected first.

Climate change will affect relations between people on both a small and a large scale. Large populations may be forced to migrate within or between countries. Increased competition for water resources may make conflicts worse, but may also lead to increased cooperation. International solidarity will be put to a hard test.

There is a risk of climate change enhancing much of the inequality that has existed for a long time, between countries and regions, between groups of people in the same country and between men and women. Women generate less GHG emissions than men but usually live closer to the consequences of climate

change.[12] Women's opportunities for education and participation in society may be an important key to change.

It has perhaps never been as clear as now, in the era of climate change, that humanity as a whole depends on the same creation with its natural resources and ecosystems. Nevertheless, we are affected in different ways depending on circumstances over which none of us alone is in control. People who live in poverty have contributed least to creating climate change but are affected first and most. They also risk being denied the right to development because industrialized countries have already exhausted the capacity of the atmosphere to absorb emissions. In discussions on *climate justice*, it is often stressed that countries such as Sweden are responsible not only for the emissions they produce today but also for the emissions produced in the past over a long period of time that have contributed to the current temperature increase.[13] However, the strongest argument for Sweden to take large-scale global responsibility in relation to climate is perhaps that our emissions per person remain at an unsustainable level and we have the resources and good opportunities for contributing to solutions.

The global population continues to increase. However, humanity is experiencing a demographic transition, with a rapidly falling birth rate and increased average life expectancy. The number of people is expected to stabilize at around ten billion towards the end of this century.[14] This development is a consequence of major development advances. More people than ever

now have access to education, healthcare and basic material welfare. As the volume of resources a person requires for a satisfactory standard of living varies greatly, it is not the number of people in itself that determines whether the earth can support everyone. The total footprint of all human lives must be within the safe operating space indicated by the planetary boundaries, and the earth's resources must be distributed so that the basic needs and rights of all human beings are met and guaranteed. Under these conditions, the earth is considered able to feed the population that is expected to exist in the future.[15]

The climate challenge

The physical and biological functions on which human life depends are under serious threat. By extension, this entails serious risks for many fundamental social functions and for the solidarity within and between human communities.

At the same time, we know that human creativity and ability to adapt to changes is incredible. Paradoxically, it is reassuring that so far only a very small part of human creativity and resources are focused on preventing and dealing with the problems created by climate change. Humanity could do so much more.

Perhaps the most important conclusion we can draw in relation to the climate challenge is that it is so acute and so extensive that it is no longer possible to believe that it can be solved 'later', when financial crises and unemployment have been solved. We must deal with the climate crisis now and we must do it in a way

that also contributes to solutions to other serious social problems, thus enhancing the opportunities for all human beings on the planet to live a good life.

II How did it come to this?

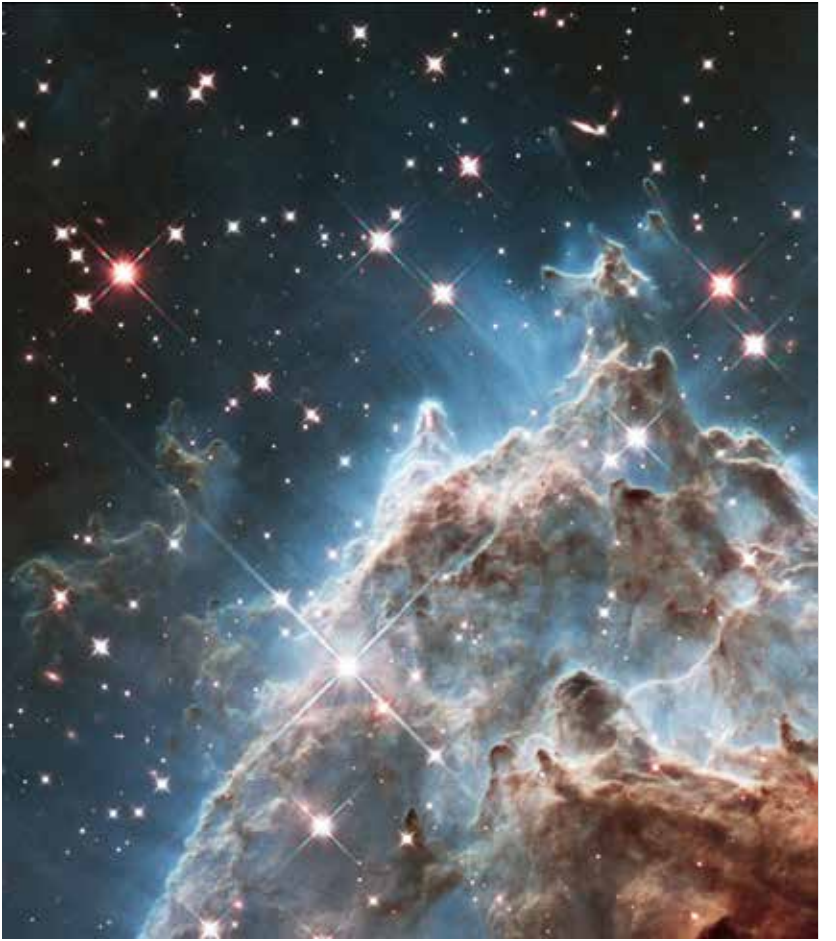
If we are to find the way forward, it is important to be clear about the background. What ideas and processes have led us to the current situation? What concepts of nature, the world and the earth's resources once formed the view we have today?

A pre-modern overall view

The world view we live with today is a modern one. It took shape after what is usually called the Scientific Revolution, i.e. the period since the early 16th century. However, people of all eras have endeavoured to understand the world we live in. The pre-modern Western world view emerged from various currents in Greek philosophy, primarily Plato and Aristotle , and the Jewish and Christian traditions.

In this world view, the heavenly and the earthly were seen as two obvious reference points. It was taken for granted that there was a purpose and an objective for the entire cosmos. Revelation was regarded as a trusted source of knowledge and it was taken for granted that humanity was at the centre of the universe. Reality appeared as an organic unit.

The development of modern science did not proceed entirely smoothly in relation to the church authorities of the time. At the same time, it was precisely theology that created good



conditions for the development of science by combining Greek philosophy, which was rediscovered during the Renaissance, with Christian creation theology. Many of the scientific pioneers were priests. They saw their research as a divine service, a way of building the reign of knowledge as a reflection of the glory of God.

God could be experienced in nature, as the regularity of nature was seen to say something important about the Creator. It was possible to read about God in the book of nature, which was not in a state of opposition to the Bible; it supplied the illustrations for the Bible's words about the wisdom and glory of God. The God people read about was the God of the eternal systems.

Science as a separate domain

In the pre-modern world view, the relationship between the book of nature and the Bible was considered to be symmetrical. They complemented each other. This outlook was rejected when, in the 17th century, René Descartes divided reality up into two radically separate domains, on the one hand thought, the mind and ideas and on the other matter. With this division, matter was left completely to science, while the mind was reserved as the area for philosophy and theology.

This division of labour proved to have both advantages and disadvantages. It made it possible to hold a world view in which nature was no longer seen as an organism and instead mainly as

a machine. The universe was compared to a giant mechanical clock and God to a clockmaker. This mechanistic view provided a pretext to exploit nature. On this basis, it can be said that some theology has contributed to legitimizing the overexploitation of nature and alienated human beings from creation.

The thinking of the time also contained an element of sexism that led to the same result. The Royal Charter for the Royal Society, founded in 1660 and long considered to be the leading academy of science in the world, states: 'Nature is a *woman*, to be subjugated by *men* of science. He must methodically and systematically expose Mother Nature, lay bare her secrets, penetrate her womb and thus force her into complete submission.'[16] Or more poetically: 'The Beautiful Bosom of Nature will be Expos'd to our view: we shall enter into its Garden, and taste of its Fruits, and satisfy our selves with its plenty.'[17]

Put slightly more simply: God moved into the emotions, while the material world became the precondition for the development of technology and industrialism. Both the book of nature and the Bible continued to be read, but separately and without any mutual dialogue. This period led to incredible advances in many areas. At the same time, it was difficult to have a comprehensive view. The world view fell apart. On the one hand nature became profane as the object of science and technology, on the other religiousness was reduced to something subjective or private which has come to be regarded as rather irrelevant to the questions of survival we now face.

Growing insight into complex connections

When the theory of evolution, the theories of relativity and quantum physics emerged, our world view and view of nature changed again. The world is now no longer seen as something that *has* a history, the world *is* history. Nature is in a state of constant development. Nature's strict conformity to law had previously been emphasized. This approach was often called deterministic. Determinism, as the supreme principle of order, was now joined by other ways of describing the interplay between order and chaos. Figuratively speaking, the difference can be understood as follows. During the growth of industrialization, we thought that the world was like a car that can be chocked up while we fix and tinker with it, following the rules of mechanics. Now we have learned that the car cannot be chocked up, we have to work with it according to all the rules of physics and the skills we possess.

Electricity, penicillin, the internal combustion engine, the transistor, the discovery of DNA, information technology and much more besides are the result of a careful reading of the book of nature. The same reading has also given us weapons that can destroy the earth, created substances that threaten many life forms and meant that human beings are able to change the entire climate system and thus saw off the branch they are sitting on. The level of knowledge has increased, the effects on public health are clear and our opportunities to enjoy a richer life have multiplied over just a few generations. At the same time, a

significant proportion of the population of earth do not even have enough to eat. Our feeling of solidarity with our fellow living beings and our ability to organize societies in a socially and ecologically sustainable manner have not kept pace with the development of scientific knowledge.

The motto of the birth of the modern world view was 'Knowledge is power'. In our era, we probably prefer to say that 'knowledge is potential', and both expressions are possible translations of the Latin *'scientia potestas est'*.

Oikos – our common house

We still lack a common image to show that everything belongs together. We live in the same household – in the same *oikos*. The Greek word means house, household or family. It is the root of the words ecology, the study of interaction in the house, and economy, knowledge about how we manage resources. *Oikos* gives the words economy and ecology a broader meaning than just knowledge and activities. Compare, for example, the related word ecumenism, which denotes worldwide cooperation amongst churches. *Oikos* can connect our understanding of ecology as that which supports the economy and, in a wider sense, ecumenism, how we act together in a global household for humanity as a whole.

The interaction and the management have become more complex. The food chain is long, energy supply is based on uninterrupted transmission between various energy carriers and

information technology is becoming increasingly important to the functioning of everyday life.

Human impact on the climate of the earth began when forests and wetlands started to be transformed into agricultural land. However, it became noticeable only when the use of fossil fuels accelerated during the industrial revolution. To date, increased emissions of greenhouse gases have been closely related to the increased material welfare and economic growth that are a central part of the development of the past few centuries. Easy access to fossil energy, along with technical and organizational innovations, has been at the heart of economic development.

History has seen examples of civilizations that have fallen on account of environmental and climate impact and the inability of human beings to adapt to radical changes. However, there are also examples of societies being able, with laws and regulations and, over time, also taxes and economic incentives, to cause companies and households to change their behaviour to mitigate or avoid environmental problems.

It is not economic growth in itself that determines a society's climate impact. It is the content of the growth, i.e. what kind of economic activities that constitute growth. Is growth driven by material or non-material increases in consumption? When houses are built and renovated, is it done in a way that contributes to increased sustainability? When people spend more of their increased incomes on buying food, does that contribute to increased or reduced sustainability in food production? Are tax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systems designed to give companies incentives to enhance the efficiency of their use of natural resources more than their use of labour?

In principle, continued growth is compatible with reduced emissions. The big question is whether production and consumption patterns will change fast enough for this actually to happen in practice. In Sweden, we are seeing signs but no clear evidence that it is possible. Between 1990 and 2012, Sweden's domestic emissions fell by 20 per cent[18] while the economy grew by 60 per cent.[19] However, if we include the emissions caused by Sweden in other countries via consumption, emissions have increased.[20]

Our dependence on growth and consumption

The climate challenge revitalizes a critical discussion on growth. Is continued economic growth necessary? Is it a self-evident objective? Is there a measure of welfare that can measure satisfaction with life in terms other than economic ones?

For many years, this discussion has existed on the margins of social debate and rarely engaged mainstream economists. However, in recent years it has attracted fresh attention.[21] Growth has proved to be important to society from at least two significant perspectives. First, it seems difficult, with the current economic system, to combine high employment with low growth. Second, growth is a presumably unsurpassed way of managing distribution conflicts. It is easier to redistribute expanding

resources than to give to some at the expense of others. The fact that it is difficult to create consensus around redistribution of resources is a depressing proof of how difficult we human beings can find it to share.

Increased material welfare leads inevitably to economic growth. For the large part of the world's population that still lives in material poverty, this is an important reason for growth to be desirable.

Increasing consumption is both a precondition for and a consequence of growth. From a climate perspective, this is the fundamental problem of growth. "The American way of life is not negotiable," said US President George Bush at the United Nations Conference on Environment and Development in 1992. This statement has often been held up as an example of the USA's unwillingness to reduce its large ecological footprint. But the question can just as well be asked of us in Sweden. Are we prepared to change our lifestyle?

Increased consumption is usually assumed to lead to higher welfare and well-being. In Christian tradition this assumption has been regarded with scepticism as it has been observed that excessive consumption and wealth can be an obstacle to life in community with human beings and God. "Do people gain anything if they win the whole world but lose their life? Of course not!" (Mark 8:36).

Research has confirmed that from a certain point increased consumption and well-being part company. When a society or

an individual has reached a certain basic level of consumption, further increase in consumption leads to the feeling of satisfaction stagnating or decreasing.[22]

In the field of happiness research, studies have been conducted into how people experience various activities that are associated with different levels of emissions of greenhouse gases. The results are encouraging. The activities that people find most satisfactory, such as socialising with others, praying and participating in cultural life, have low climate impact. On the other hand, less satisfactory activities, such as commuting, produce a high level of emissions. This indicates that a different consumption pattern is not only possible but may also lead to enhanced quality of life. By attaching greater importance to education, health, culture and spirituality, we can create not only a sustainable society but also a good life.[23]

III Objectivity, threat and hope

We have a specific climate threat hanging over us and future generations. If we are to manage this situation wisely, we need to make a lot of room for objective discussion. But that is not enough. We need to be stirred to long for a sustainable future. We need the anger that the threat to our beloved creation arouses. We need to arrive at hope, to release power to act. Today we are somewhere between threat and hope. On the one hand, we see well-founded alarm indicating a challenge of literally global dimensions. On the other hand, there is decisiveness that is not yet proportionate to the huge challenge.

Before the 2009 United Nations climate change conference, there was great expectation of a strong global climate agreement. The conference was preceded by extensive media attention and major political and popular mobilization in many countries.

After the failure of the summit, media interest cooled and the climate issue fell way down the political agenda. The political decisions required to reduce emissions as quickly as is necessary to avoid a dangerous climate change are not being made today, either in Sweden or at international level. The message from

Swedish politicians has often been that we do not need to change society fundamentally to do Sweden's share of global action on climate change. We can solve the problem by making marginal changes.

We ask for political leadership. It is no longer possible to avoid the fact that climate change will require drastic changes. The Church of Sweden believes that Sweden's emission should be reduced by 80–95 per cent between 1990 and 2050,[24] which means that emissions should be one tonne of carbon dioxide equivalents per person by 2050. This can be compared with current emissions of just under six tonnes per person (or approximately ten tonnes if all emissions related to Swedish consumption are included).[25]

Four-year political terms of office do not always make it easy to summon the decisiveness and courage to make such changes. The climate's century-long 'terms of office' require a long-term approach that our political and economic systems find difficult. It is possible that the biggest threat is not climate change itself but humanity's inability, so far, to handle the challenge.

Obstacles on the road towards a fossil free economy

It is both technically and economically possible to reduce GHG emissions considerably. Many of the important first steps are also profitable in the short term. This is shown by a range of studies, of which the report by the British economist Nicolas Stern is perhaps the first and best known example.[26]

Why is climate action still so slow? What forces, in society and within ourselves, are making the transition to a fossil free economy difficult? What is preventing us from taking action?

Human short-sightedness and short-termism in all planning are sources of inertia. Few processes are as global and as long-term as climate change. Our political and everyday choices produce climate effects long into the future or tens of thousands of kilometres away. These remote negative effects must be weighed up against the immediate benefit. However, people find it hard to deal with long distances between cause and effect, in both time and space.

The climate system is one of several *global commons* that can only be preserved and developed by means of international cooperation.[27] Although international cooperation has developed considerably over the past century, there is still a lack of functioning models and action plans to deal with common challenges. At the same time, international cooperation is obstructed by increasing nationalistic currents in several parts of the world. In the face of the threats presented by short-sightedness, short-termism and nationalism, we need to cultivate our imagination, knowledge and sympathy together. The remote or future consequences of our actions need to be so real for us that they affect our choices here and now.

Conflicts of interest and equity issues are another cause of political inertia. Changes that lead overall to major improvements may also result in individual groups and companies suffering

negative impacts. As long as the profitability of many companies depends on fossil fuels, there will be considerable opposition to change.[28] For many years, what could be called the 'fossil fuel industrial complex' has obstructed the development of renewable energy sources and the phasing out of fossil fuel subsidies. Solar cell producers and other companies that have developed technologies for the transition to a fossil free economy are still too weak to seriously challenge those with interests in preserving the prevailing system. It is very easy to justify the phasing out of subsidies for fossil fuels in principle, but this would create losers in the short term in practice, losers who have good reason to oppose change. An obvious example is people who live in the countryside, who are dependent on their cars and suffer if car travel becomes more expensive. Consideration for the group who lose out as a result of change should not be permitted to block the change as a whole. Instead, an attempt should be made, when this is justified from an equity point of view, to find ways of compensating those for whom a particular change means disadvantages.

The inertia may also be based on a general *resistance to change*, which may, in turn, based on fear of the unknown and disinclination to make changes that are seen as being forced on us. Human beings are essentially curious beings and innovation is a positive concept in a modern country such as Sweden. We welcome changes that we consider to be voluntary. However, we instinctively tend to oppose changes that feel forced on us, even if our lives would actually be improved by them. However, if the

change is implemented anyway and involves real improvement, we tend to adapt and accept the situation fairly quickly. For example, few people today look back fondly to when it was permitted to smoke in restaurants. We need to reflect together on the changes of which we have experience and the changes to which we want to contribute.

Existential anxiety

For several years, environmental and climate issues have come first in the SOM Institute's figures about what most worries the Swedish people.[29] According to a survey conducted on behalf of the World Wildlife Fund, WWF, 80 per cent of Swedish young people are worried about how climate change will affect their future and the future of the world. This high figure conceals a number of different feelings. For example, we do not know whether it primarily reveals anxiety about the effects of climate change in the form of flooding and drought, which can lead to climate change refugees, anxiety about the threat to their own lifestyle or worry that far too little is being done to stop global warming.

Climate change touches our innermost feelings and values and therefore has an important existential and spiritual dimension. Climate anxiety has also begun to appear as a new phenomenon in psychiatry. It may involve thoughts of disaster, anxiety hysteria, depression and a feeling of powerlessness. What makes climate change existentially difficult to handle is the fact that it is

simultaneously diffuse and concrete. Our individual responsibility is easily swallowed up by collective responsibility, and the long time between action and consequence may make it difficult to feel any personal involvement. At the same time, the issues become extremely concrete when we consider that we ourselves will probably be OK but it will be worse for our grandchildren and great-grandchildren. When this tension between diffuse and concrete remains unresolved, it is easy for a mixture of passivity and resignation to develop, a sort of climate depression that obstructs the political decisiveness that is needed today.

We believe that this worry and this anxiety are reinforced by the lack of political leadership. It is not always insight into real risks that leads to anxiety, more the feeling that far too little is being done and that you are unable to affect developments yourself. Worrying about the climate affects our mental health in very different ways. A study of Swedish young people's worries about the environment shows that those who experience existential meaning in their lives, who are convinced that environmental problems can be solved and are involved themselves fare best. They have hope, which spawns creativity and the ability to see new opportunities.[30]

Working against people's perceived powerlessness and ending passivity by supporting small-scale and large-scale initiatives for a more sustainable lifestyle is beneficial to both individuals and society. However, worries that are silenced or explained away are harmful to both the individual and society.

What do we do about our worries – when we have them?

Those involved in pastoral care, along with healthcare staff and psychologists, have great experience in dealing with people in an acute state of crisis and worry. The climate crisis is not, in itself, the type of acute personal crisis that follows a sudden, unexpected event: we have gradually understood more of its scope and our shared responsibility throughout our way of life. Nevertheless, we can try to borrow some of the concepts developed from the experience of dealing with people in a state of crisis and use them to describe how the threat of climate change is currently managed by individuals and society. These are denial, flight, anger, depression, idealization and bargaining.

Denial – refusing to take in difficult information – is a common defence mechanism. We all have a greater or lesser tendency to repress information we cannot handle. To make progress, we can cultivate our ability to deal with and process difficult information for a while without letting it paralyze us as it does if it is always present for us. Awareness of reality can in fact be important background knowledge here. We should remember the saying 'learn from death to live'.

Another defence mechanism is to *take flight* from our own responsibility by seeking other answers to why something difficult has happened. It is easy to blame China because their total emissions are highest, or the USA, as their emissions are the highest per person. Responsibility is laid with oil companies, politicians,

companies or consumers. There is truth in all of this, but there is a risk of it leading to us not seeing our own responsibility. To make progress, we need to be able to see our responsibility and our opportunities and seek a way forward in which everyone, according to their abilities, can contribute to solutions.

Anger can be an important, possibly healthy reaction to the climate crisis. Anger generates power to act. If that power is not used constructively, it exhausts us. Therefore, it is important to find contexts in which anger can be converted into a long-term sustainable driving force for our involvement. We need a 'rage' driven by love of life and everything living.[31]

Depression is a common reaction in a crisis. A person who is depressed sees life through negative glasses and sees problems but no opportunities. Similarly, it is possible to react to climate change by giving up in advance and listening to the warnings but not seeing the positive signals about what can actually be done and what is being done. The difficulties of making the transition in society, by reducing emissions, changing consumption patterns and investing in new energy and transport systems, are often exaggerated. Perhaps we believe that life in a sustainable society will be limited, materially deficient and much more boring than it is today? But it does not have to be like that at all. To make progress, we need to help each other to highlight the positive opportunities that exist, to draw enticing, possible pictures of the future. We can remind each other of occasions throughout history on which people have solved serious problems together, such

as the abolition of slavery, the elimination of apartheid and protection of the ozone layer. We need to help each other activate the desire to be involved in doing good. When people in crisis are able to start acting together with others, it often constitutes a release from the paralyzing anxiety.

Idealization of the past is a common reaction to crisis. The past was rarely as rosy as we want to remember it. In a similar way, there is a tendency to idealize our current society when we understand that it cannot continue as before. If the present is idealized, all change becomes a deterioration. We find it more difficult to identify the positive sides of changes that are always present. To make progress, we need to try to see what we have dispassionately, let go of preconceived ideas and have the courage to re-examine old truths.

By *bargaining* (also with God), people can try to regain control over their lives by means of a type of magical thought process: "if I never do this again, I will be healthy". Some of the solutions to climate change being discussed today may be mock solutions that appear to be more about negotiating away the threat than about achieving actual change. It is important that, for example, various forms of climate compensation are steps on the way towards real solutions and that we make sure that the solutions to climate change for which we work have an impact on the causes of climate change and are not just designed to alleviate our conscience.

The processes required to proceed from defence mechanisms to new approaches and constructive action are best carried out in cooperation and dialogue. We need to be able to hold discussions in which different thoughts, experiences and perspectives meet and dialogues at many different levels of society to which everyone can contribute.

To be able to participate in this debate and deal with people's anxieties, the church and individuals involved in pastoral care need to process in depth these issues themselves. Talking is the first step on the way to liberation from paralysis, both individually and collectively. Another world is possible. We need positive visions of opportunities, joy and the realism of a sustainable future. The church plays an inescapable role on the road to this world as a hub for discussion of all important issues.

Responsibility

Climate change is a clear example of the fact that we bear responsibility for what has happened and for how the future will be. The responsibility is both shared and individual. As individuals, we sometimes find it hard to see what lies within and beyond our control. It is difficult to take responsibility for the expansion of coal-fired power in China, but as individuals we can change our lifestyles and use our democratic right to influence political decisions. As communities in the church and in society, we are responsible for how common assets and funds are used.

If you want to do the right thing, you first have to identify what is wrong. Destructive behaviour and structures need to be rendered visible before they can be changed. When it comes to individual actions, it is often not very difficult to see what needs to be changed. Use less fossil fuel, travel climate-smart, eat more vegetarian food, don't waste food, etc. Shared responsibility can be more difficult to see and influence. However, a society that builds infrastructure on the basis of fossil fuels, fails to implement efficient policy instruments to reduce emissions and breaks promises of financial support for climate action in developing countries is on the wrong road. The limits to our knowledge of exactly which option is best should not prevent us from making the decisions necessary for the long term.

"I have shared in the alienation of the world from God" is one of the confessions of sins that we use in the Church of Sweden. This formulation works well in connection with the climate issue. It accepts individual responsibility without denying the role of the collective and takes the collective dimension seriously without disempowering the individual. Sin can be described as 'missing the goal' in life or as broken relations with God and creation. Both expressions are relevant in the climate issue as well. We miss the goal of reducing harmful impact, we harm our relations with God, our neighbours and nature and we contribute to inequity. We need conversion, reorientation.

Feelings of guilt, insight into our own responsibility, can indicate something important, but they are not a good long-term

driving force for change. Guilt that is not brought to light and lifted off us weighs heavily and risks leading to impotence and reduced self-esteem. Therefore, the confession of sin in a church service is not an end in itself or an end point. It leads to God's forgiveness and restoration. We often need forgiveness and liberation. Not admitting what we have done wrong or giving up because we have missed the goal is not an alternative.

Responsibility takes different forms for different people. Those who have higher incomes are usually responsible for higher climate impact than those with lower incomes and men usually have a greater impact on climate than women. It is a good idea to be cautious about expressing an opinion about the life choices of others, but we should still discuss the expectations that we can have of all members of society. Norms change and, as climate change assumes greater importance as an issue, views of what is considered to be acceptable behaviour will also change. A hundred years ago, it was acceptable to spit on the floor in Sweden. Which behaviour common today will future generations shake their heads at?

"Will it be all right, Mum?"

When we relate climate change to the future of our children and grandchildren, it extends our perspective into the future, but not beyond the foreseeable future. Talking about children involves putting yourself in a position of responsibility. Are we consuming the resources that the next generation should have had to

live on? Are we running up a bill that the children of today and tomorrow will have to pay? It is impossible not to take children into account in relation to climate change.

How do we talk to children about climate? Or perhaps better still: how do we listen to children? What do a child's dreams, hopes and yearnings mean in relation to the climate challenge?

Children and young people perhaps worry more about the future of the world than adults do. How should we react to this anxiety? How can we talk about it without causing dejection and still not withhold facts or trivialize the problems? The answer is just as simple and as difficult as for other existential issues we talk about with children. It is extremely important to be honest and to dare to grapple with the issues ourselves. And, in the same way as when we try to deal with our own worries, we should grasp the opportunities and find strategies for engaging with and moving beyond difficult issues.[32]

Do we transfer worry to our children if we engage with climate issues? Or is it the case that children of parents who engage with climate change are not only better informed than other children about the threats facing us but also find it easier to see opportunities?

An important aspect of how children relate to the climate crisis is that adults must never pass responsibility to children. There are good reasons for teaching children about environmental issues at an early age and encouraging them to engage with climate change. However, it is the current generation of adults who must stop

climate change. It would be treacherous to shift responsibility over to children and young people and would probably result in our missing the opportunity to prevent the worst climate change. Common decisions and initiatives are needed now.

Hope and faith in the future

Hope is one of the strongest forces for change. And hope is more than optimism. Hope accompanies objectivity and involves a correct analysis of reality and a realistic view of the situation. It is interested in forecasts and assumptions about the future. However, unlike the forecasts, which are based on knowledge about what has already happened, hope is based on what is still possible.

Hope is based on faith and love. 'To have faith is to be sure of the things we hope for, to be certain of the things we cannot see' (Hebrews 11:1). Faith can give us objectives that are realistic and challenging enough to make us committed. For Christians, hope is supported by belief in the Resurrection, that life is stronger than death, and it derives its strength from the transcendent reality, God, that extends beyond what we already know. Therefore, hope is able to challenge the present with openness and defiance in the belief that another world is possible here and now.

Contributing to positive change, using our own words and deeds to be part of the solution to the climate problem, can be invigorating and give our lives meaning, regardless of whether we can see concrete results from our efforts and whether we experience the fruits of the change ourselves. When we strive to

find a long-term perspective for ourselves and our own role in a larger whole, it becomes easier for us to have confidence in what we can do and the fact that it is good, even if we do not have the answers in our hands. One of the benefits of Christian faith is that it gives people hope and strength, driven by love, to replace their powerlessness with empowerment to make changes and create new things.

Communication is key

In an international workshop, researchers, business leaders and experts in the IT and risk management sectors talked about what is needed to manage the risks our societies face.[33] Here are a few examples of what they said:

- We need stories that give us courage, confidence and hope in the face of future crises and thus release our decisiveness.
- Words have real meaning; they change reality.
- Where are the people who can bring about the necessary change?
- We have so many broken relations that need to be healed.
- Communication must be key.

Words change reality. 'In the beginning the Word already existed', says the Bible (John 1:1). Everything was created by the

word and words of forgiveness and reconciliation can heal what is broken and create anew.

The need for stories leads our thoughts to Jesus the storyteller and his parables, which touch us, challenge us and give us courage. For example, who is the Good Samaritan for the ecoystem that has fallen into the hands of robbers (Luke 10:25–37)?

How can we make people work for change? In its services of worship, the church uses a tried and tested method. We gather, are given the tools with which to approach life and its challenges and are sent out into the world with a meaningful task as followers of Jesus. Words become deeds, as the Word once became human in Jesus Christ. In the Eucharist, also called Holy Communion, we encounter him when we share bread and wine. As communicants at the Communion table, we are made participants in Christ's mission. From the service, we take with us the courage, confidence and hope that it is our mission to communicate in the world.

The ability to create strong stories that produce positive images of the future has always been important for how human beings deal with challenges. The struggle against apartheid was created from faith in a future in which every human being has the same value. Martin Luther King did not say "I have a nightmare" in his famous speech fifty years ago, although he had good reason to feel very worried. He said "I have a dream". It was not a way of denying the deeply worrying situation. It was a way of raising the hope that another world was possible.

The hope and the dream of a sustainable and just world are inherent in every piece of bread we share. Every time we break bread and share wine in church, we taste the future that we hope for and are reminded that we belong together. Each Eucharist also involves us together holding up a symbol that challenges impotence and hopelessness (*The Swedish Hymn Book* 398). It is a shared act, not an individual one. Mass expresses our relations with God through Jesus Christ, our relations with each other and our relations with our own developing ego and the entirety of creation across time and space. In a much-loved prayer, we say: "Reveal to us the secret of your table, one bread and one humanity".

IV The earth, hope and the future – how can we have faith?

'The world and all that is in it belong to the LORD; the earth and all who live on it are his,' the psalmist rejoices (Psalms 24). The psalmist has an intuitive idea of the immensity of the world and the universe. It is quite clear that God's creative force makes every human claim to ownership relative. When the earth belongs to the Lord, all human ownership is extremely preliminary. However, it is not unimportant either. The Book of Psalms very accurately captures the constant tug of war between the great magnitude and overwhelming smallness of human beings.

'When I look at the sky ... what are human beings, that you think of them; mere mortals, that you care for them?' (Psalms 8). Why should God care about the little speck of dust in the universe that a human being represents? And yet, the psalmist continues, 'you made them inferior only to yourself; you crowned them with glory and honour. You appointed them rulers over everything you made; you placed them over all creation: sheep and cattle, and the wild animals too; the birds and the fish and the creatures in the seas'.

Climate issues lay bare our human power to achieve both good and evil and our smallness in the face of the risk of radically changed living conditions on our planet.

What are human beings and what is their task?

Human beings are part of creation

In Christian thinking, the fact that the world is God's creation is self-evident and the basis for everything else. Everything is in relation to God.

The Bible begins with two creation stories. The first reflects living conditions near the sea and on fertile land (Genesis 1:1–2:4a). The Spirit of God moves over the raging water out of which God creates a cosmos containing various life forms. God creates human beings in Gods' image, as man and woman, and gives them power over the animals, which is often taken as an excuse for the ruthless exploitation of creation. Then God looks at what God has made and is very pleased, but this is not the end of the story. There follows a rest day that God makes a holy day. The rest day, the Sabbath, becomes a holy part of creation.

The second creation story takes place in a desert environment (Genesis 2:4b–25). The great wonder of creation is the water that comes up from beneath the surface of the ground. Only then can seeds sprout and grow. God forms man from the soil from the ground and breathes life-giving breath into her nostrils. And God plants a garden in Eden and places the man there to cultivate it and guard it.

At one with creation and yet with a special task; this is how we human beings encounter ourselves on the first few pages of the Bible. We are made of the same building blocks as everything else in the universe. Expressed poetically, but also correctly from a scientific point of view, we are all made of stardust. We are part of a connected web of life.

Creation is characterized by mutual dependence between everything that has been created and by a shared dependence on God, who constantly maintains creation with Gods' creative force. The psalmist again recognizes the work of the Spirit of God in this: 'You send out your spirit, they are created. You give new life to the earth' (Psalms 104; see also *The Swedish Hymn Book* 476).

On the basis of the creation stories, the role of human beings can be described as that of stewardship. Stewards generally have a long-term mandate. They may have far-reaching powers and great responsibility but must never forget that what they hold in trust is not their property. There comes a day on which the results of the stewardship must be reported.

It may be worthwhile highlighting the role of trustee when we seek a good way of approaching climate change. However, the job description of the trustee is not entirely clear and throughout history people have made what we now realize were mistakes. The idea of stewardship has legitimized social orders that were characterized by subordination and repression instead of community and cooperation. It has been used to justify colonial and hierarchical structures that denied those at the lower end of the

scale their full value (women, children, animals, plants and minerals). In other words, the idea of stewardship is certainly a good way of emphasizing that we human beings are part of creation and have a special responsibility, but it cannot function as the only model for interpreting this responsibility.

Human beings are created co-creators

'You came from the earth, you will be earth again' – the words of the funeral service refer to our radical earthliness. But the service does not stop there. It continues with the words 'Jesus Christ, our Redeemer, will awaken you on the last day' or 'Jesus Christ is the resurrection and the life'.

The heart of Christian faith is that God chose to become human in Jesus Christ. The Bible describes Him as our brother and example, as redeemer, victor over death and 'the visible likeness of the invisible God. He is the first-born Son, superior to all created things' (Colossians 1:15). The fact that God becomes human produces an even more radical affinity between the Creator and creation: in Jesus, God becomes our fellow human being in the world.

In more recent theology, human beings are described as 'created co-creators'.[34] This term captures the double character of being human in a pioneering way. We are created, dependent, limited, transient and small. And we are creative, in both our creativity and our destructiveness, inventive in our constant attempts to stretch our limits and, driven by our inherent curiosity,

to cross the border between the immanent and the transcendent. In this way, we are irreparably religious.

Talking about human beings as created co-creators entails a radicalization of the idea of stewardship that is not entirely uncontroversial. The Bible has a word for 'create' that is only used for God, as God's creating is something entirely different from human beings fiddling with nature. Therefore, we have long since stopped talking about human beings as God's co-workers. However, this term does not express as well the tension between our smallness and our greatness, our limitation and our limitlessness, our failures and our successes.

For just over fifty years, we have known that human inventiveness has given us the ability to destroy creation on our planet with nuclear weapons. We do not yet know whether human inventiveness and decisiveness now give us the ability to look after creation by stopping climate change. However, the view of ourselves as created co-creators is definitely an incentive to mobilize the best resources we have without also denying our radical dependence and our limits.

With these thoughts about human beings and creation, we have moved away from an *anthropocentric outlook on life* that denies human beings' dependence on the Creator and the rest of creation and sees the non-human part of creation as a means to maximize human gain. Instead we have started out on the road *towards a creation-oriented outlook on life* that emphasizes the mutuality of the relations within creation and between God and

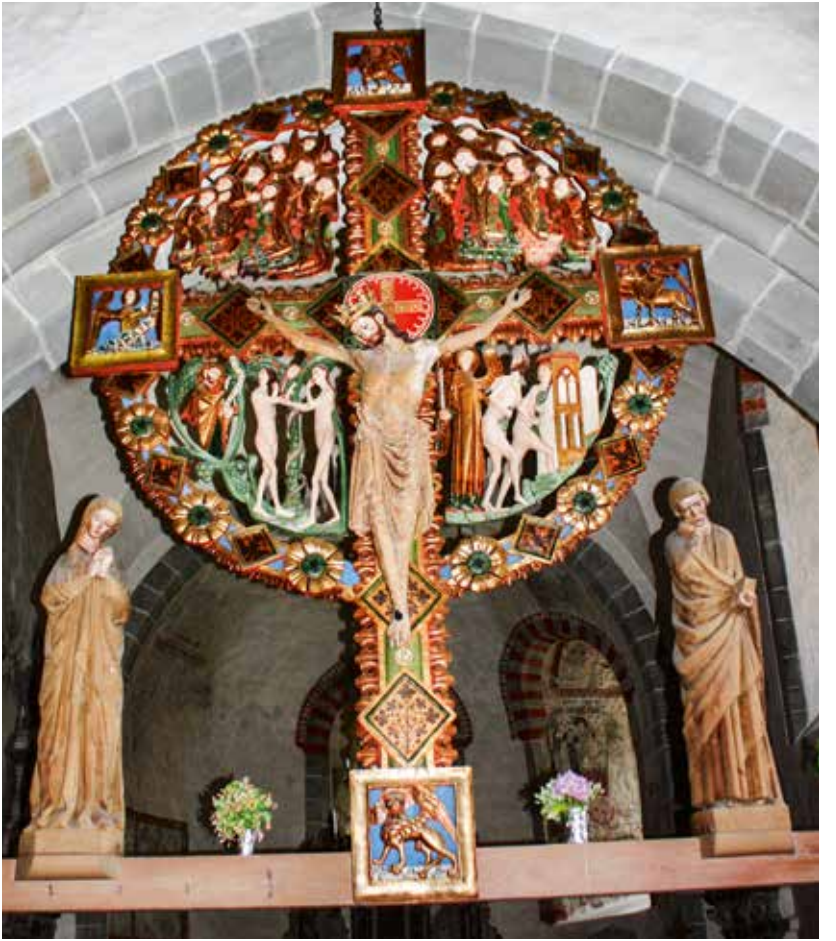
creation without also giving up human beings' special role and task. This makes it possible to have a realistic, balanced view of nature and creation. Nature is not just romantic and beautiful. Nor is nature just a store of resources to be exploited. A creation-oriented outlook on life is an alternative to both unrealistic romanticism and ruthless exploitation.

This way of thinking is now widely established in Christian churches. The document *Together Towards Life: Mission and Evangelism in Changing Landscapes* for the World Council of Churches' Assembly in Busan, South Korea, 2013, says (under 19 *Mission and the Flourishing of creation*):

Mission is the overflow of the infinite love of the Triune God. God's mission begins with the act of creation. creation's life and God's life are entwined. The mission of God's Spirit encompasses us all in an ever-giving act of grace. We are therefore called to move beyond a narrowly human-centred approach and to embrace forms of mission which express our reconciled relationship with all created life. We hear the cry of the earth as we listen to the cries of the poor and we know that from its beginning the earth has cried out to God over humanity's injustice (Genesis 4:10).

People of hope

So how do we need to live to look after the life of creation? In Matthew 16:25, Jesus says something that seems to turn the



usual order on its head: 'For if you want to save your own life, you will lose it; but if you lose your life for my sake, you will find it'. What does that mean in relation to the climate challenge? This perhaps: a person who derives his or her value from being at the top of a hierarchy always needs to defend himself or herself and has everything to lose. This is what happens if we human beings claim to be lords of creation. However, if we give up our *position* in favour of a *relationship*, we have something to gain. If we see our relationship with the rest of creation and with God, we lose our position as the centre and measure of the universe and gain a community that involves trust, hope and life.

In the next verse, Jesus continues (Matthew 16:26) 'Will you gain anything if you win the whole world but lose your life? Of course not! There is nothing you can give to regain your life'. Consumption as the meaning of life has never gone together with a Christian life.

Revaluation is required to counteract the threats we have identified (short-sightedness, short-termism and nationalism) and to generate vigorous hope in the face of the long-term global challenges humanity faces. We can gain new life by giving up and losing old life.

Sometimes we are tempted to seek answers by mainly looking back. In a difficult situation, it is easy to think that things were perhaps better previously and that we should return to 'old' values. However, as Christians we are the bearers of a tradition that requires us at all times to strive to understand the present and

look to the future. We are not a rear-view mirror people. We are the people of hope. Christ rose from the dead and transcended the limits of time. We believe that God will meet us 'from ahead '.

The word *kairos* in the Bible often describes the right time, the time that challenges us to respond to God's calling. There are moments that are decisive and require action. The Gospel of Mark states that Jesus preached the message of God: '"The right time has come," he said, "and the Kingdom of God is near! Turn away from your sins and believe the Good News!"' (Mark 1:15). The words 'the right time' are about not missing the opportunity for change. *Now* is the right time.

The future is not a forecast – it is limitless opportunities. It is more than we can infer from our history and our present. The future is what comes towards us and has a flavour of God's promise to perfect creation. Revelation talks about how God will be with human beings and wipe all tears from their eyes: 'There will be no more death, no more grief or crying or pain. The old things have disappeared' (Revelation 21:4).

The vision of the realm of God

We know two things. We will never be able to realize the perfect world, the realm of God. However, through Jesus we have a vision of God's realm that gives us every reason to build a world that realizes as much as possible of this vision. In the church, we pray and work for human beings to come to faith and for creation to be restored. This means never being less than grateful for

creation and humility in the face of our role and our life's task, never doing less than striving for justice, solidarity, peace and reconciliation. In all respects, Christian faith must include the perspective of the vulnerable and act on that basis. 'Let us listen to the voices that often come from the margins and share their lessons of hope and endurance,' as the World Council of Churches' message from the Assembly in Busan in November 2013 put it.

The vision of the realm of God is not borne by a yearning to return to paradise. Revelation paints a picture not of a restored Eden but of a society in which nature and culture are combined in the holy city that is full of God's glory. There is adequate water and the tree of life is 'in the middle of the city's street', a tree that bears fruit every month and has leaves that are medicine for the people. In this place, there is not only bread for everyone. There is medicine for everyone. 'Nothing that is under God's curse will be found in the city' (Revelation 22:2–3).

Our reality and the reality of the world oppose these visions. The double character of being human that lies at the core of all things human gives us ample experience of failure, impotence, disappointment and evil. With or without climate change, the rhythms of nature confront us with questions about meaning and a history of development at the cost of suffering and death. Looked at from this point of view, the history of creation may seem to be a passion of cosmic dimensions. Christian faith is based on the conviction that this cosmic Passion is criss-crossed

and penetrated by an even more ardent passion: God's love for the world.

A Lent hymn (*The Swedish Hymn Book* 438) that highlights the cosmic importance of the Cross can give us inspiration when we give reasons for how we should approach the climate issue:

> You who, at the centre of the world, have placed
> the Cross on which you sacrifice yourself,
> have given us this Lent
> for healing and light and life.

The hymn does not shy away from our responsibility or our part in the alienation of the world from God and from the vision of the realm of God:

> Our sin is huge. We reproach
> ourselves and walk in fear.
> But You, who bear all sins
> are much greater than our hearts.

The freedom to start anew is the breath of life of Christian faith. The possibility of forgiveness and reconciliation means that we do not need to explain away our guilt. We can confess it and, by means of forgiveness, we can deal with its consequences, dare to go further and try new steps, although we know that we will continue to make mistakes in the future. The hymn continues:

O Jesus, release with your word
the decisiveness contained within us,
that we may serve you, and see
you in those we are together with.

Liberated for action

As created co-creators, we may have a realistic idea of our ability and our lack of ability. Our Lutheran tradition never tires of reminding us that we are 'both just and a sinner at the same time', justified by grace and through faith. We know in the end that we live more from what we receive than what we do. We live on grace. It is God's gift to us that our value in God's eyes does not depend on our performance. It depends on the love God has for us.

Therefore, we dare to believe that the power to act contained within us and all of humanity can be liberated in the interests of creation. We confess that, by our part in negative climate impact, we have participated in the alienation of the world from God, while we know that, as forgiven sinners, we are able to achieve change although we lack both the perfect knowledge and the perfect will. We can have a realistic view of everything that stands in opposition to the good in and around us and in all of creation and still cultivate the desire and will to protect and take care of the good.

Our confidence may vary, and it is buffeted by life's challenges, but the promise and the task that God gives us always remain. Baptism marks us forever with the life-giving water of creation and the promise of God's faithfulness . On this basis, it is possible to reject destructive ways of life and rethink how we live. The 'daily conversion' that Luther talked about is another way of describing a daily compass adjustment towards grace, freedom and love.

The basic element of a life of faith is the permanent freedom given us and the openness it gives us. What we do with our love of God, creation, each other and ourselves is a response to the divine love that flows in and through the creation and thus also in and through us. Its earliest form was in the self-sacrificing love of Jesus Christ for the world. In a Christian perspective, everything is a gift before it becomes a task.

What can we hope for in terms of the future of the world?

Questions about the future of the earth and of humanity revitalise at least two different lines of Christian thinking. In theological language, we talk about apocalypticism and eschatology.

Apocalypticism is a genre that is well known from the world of film as well. Such films are largely about disasters and portrayals of the end of the world. Like books of the Bible such as Revelation (*Apokalypsis* in Greek), they paint a dramatic scenario of what is assumed to happen at the end of time.

In the world of the churches, these series of events are linked to the idea of the Second Coming of Christ, which is something to long for and look forward to. In Christian contexts, there have therefore been currents that, on the basis of apocalyptic thinking, have opposed all involvement in the environment and creation as this would delay the long-awaited day when Christ comes.

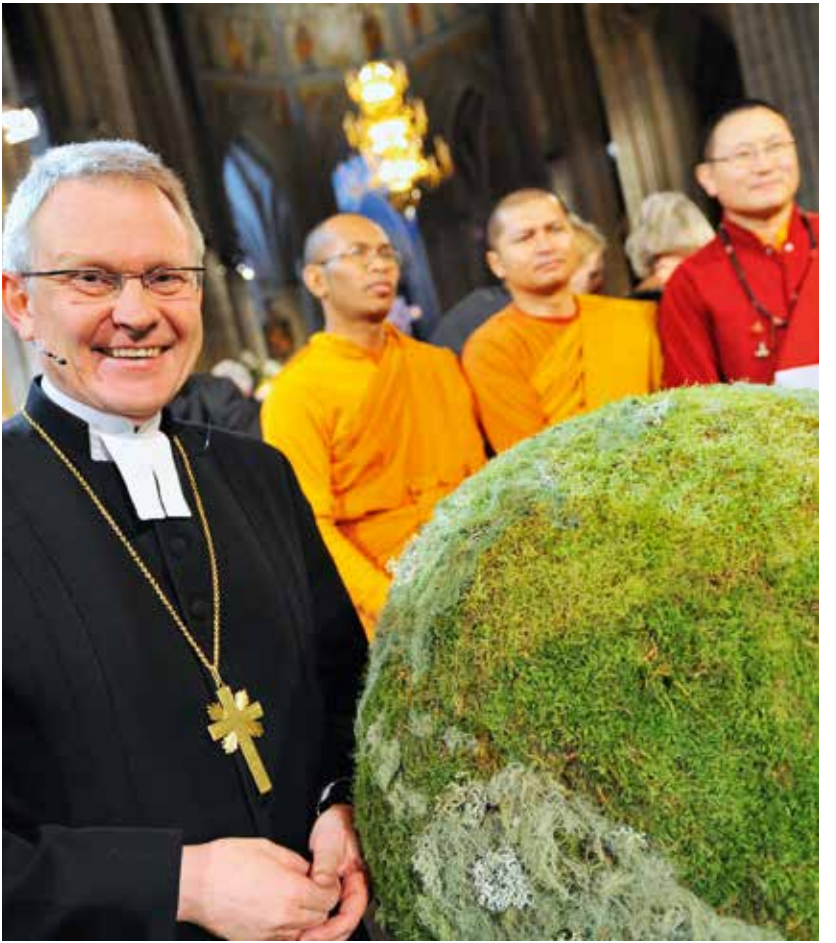
Apocalypticism seems to exert an irresistible attraction on our human imagination. However, allowing it to have consequences that threaten the earth and humanity is anathema to the Church of Sweden and most other churches. On the contrary, issues relating to sustainable development have come to assume increasing importance in the life of the churches. The World Council of Churches has long worked on the connection between justice, peace and the integrity of the creation. Despite this, apocalypticism has not become superfluous. For example, we see today that research that studies the emergence and development of complex systems (emergence research) highlights disasters as important elements in such development. This creates new reference points for the apocalyptic tradition in theology.

Eschatology is literally about the final things in both temporal and existential senses. It contains questions about what happens when the very last calendar ends, and also what ultimately gives meaning to our lives and what happens after death. Eschatology asks what we may hope for in the full breadth and radicality of consideration. The answer is a promise, that when everything ends, God is near. When the giver of life, the Holy Spirit, has returned to its origin, when the deliverer Jesus Christ has

transferred everything to God, God will 'rule completely over all' (1 Corinthians 15:28).

In modern times, the importance of eschatology as a description of the end of the age, the big cosmic finale, has moved further and further into the background. Instead, interest has grown in eschatology as God's promise of eternal life. The promise is the source of the indomitable hope that permeates all of our efforts to build a better world and thus realize part of the realm of God under the conditions of the world. Such indomitable hope speaks from the legendary words attributed to Luther: "Even if I knew that tomorrow the world would go to pieces, I would still plant my apple tree". Christian hope is bold and perhaps even defiant because it is based on freedom.

Hope shows its power in everyday life and derives its energy from worship in church and the variations in the ecclesiastical year. Advent is a period of waiting for God who comes to us from ahead . The future is more than an extension of current conditions. Lent is a reminder of our dependence on the Creator and the creation, that the path of love is also the path of suffering and that God in Jesus Christ travelled that path to the end. No human being is a stranger to God. The cross at the centre of the world embraces the cosmic passion and our own personal passion. Like every Sunday, Easter is a celebration of the victory of life over death. We see all of creation shining in the joy of Easter, as the Easter Eucharist liturgy says. The long Trinity period with its green liturgical colour is a period of growth and



maturation, an exercise in the harmony between spiritual life and daily life.

Songs of praise and litanies, Gloria and Kyrie, sharing bread and wine at Mass, prayers of the heart and of the body, the wordless and the wordy, pilgrimage, Bible studies, psalms and hymns .... there are an inexhaustible number of ways of cultivating the hope that the Creator has instilled in us created co-creators. We can and we must dedicate ourselves to this cultivation work to face the challenges ahead of us.

In this work, cooperation with other parts of the Christian Church and other religions is becoming increasingly important. In 2008, Archbishop Anders Wejryd convened an international, interfaith climate summit in Uppsala. A manifesto was signed at this summit that is still valid.[35] It has been spread and used in various ways in international contexts. It was quoted in an appeal, signed by figures including the Dalai Lama, Rabbi Awrham Soetendorp and the Archbishop of Cape Town, Thabo Cecil Makgba, to the Rio +20 conference in 2012.[36] The Uppsala climate manifesto is often mentioned in the climate work of the World Council of Churches.

In spring 2013, the leaders of the Evangelical Lutheran Church in America, the Episcopal Church and the Church of Sweden together issued an appeal to US politicians on the climate issue. The church leaders signed a joint commitment to keep hope alive in the face of climate change by seizing the knowledge that is available, by means of self-criticism and

conversion, through the worldwide network of the churches and via dialogue and lobbying. They write:

> *As Christians, we do not live in the despair and melancholy of the tomb, but in the light of the Risen Christ. Our resurrection hope is grounded in the promise of renewal and restoration for all of God's creation, which gives us energy, strength and perseverance in the face of overwhelming challenge. For us, this promise is more than an abstraction. It is a challenge to commit ourselves to walk a different course and serve as the hands of God in working to heal the brokenness of our hurting world.*[37]

V What do we do now? Ways forward

Our view of creation and human beings is challenged by the fact that humanity is in the process of changing the conditions for life on earth. The ethical issues are coming to a head. In a world in which we know that there is a limit to how many natural resources we can extract, there must also be a floor, a social floor based on all human beings' equal value and right to a tolerable life.

According to Christian faith, the most vulnerable and exposed must be at the centre of our thoughts and our care.

> '"When, Lord, did we ever see you hungry and feed you, or thirsty and give you a drink? When did we ever see you a stranger and welcome you in our homes, or naked and clothe you? When did we ever see you sick or in prison, and visit you?" The King will reply, "I tell you, whenever you did this for one of the least important of these followers of mine, you did it for me!"'
> (Matthew 25:37-40).

Those who are affected first by climate change are those who have contributed least to creating it. They live in poverty and have little capacity to cope with drought and flooding. Most of them live in precisely the parts of the world in which problems with climate-related disasters are predicted to be worst. In addition, they risk being deprived of the right to development unless their transition to and development of renewable energy sources is supported financially. Cheap fossil energy has been an important building block of the prosperity of rich countries. From this perspective, the fact that industrialized countries have almost put an end to the ability of the atmosphere to absorb emissions must be regarded as deeply unjust. Against this background, it is understandable that many countries are suspicious when the Western world wants to talk about climate. On whose terms will the necessary action be taken?

Christian faith has a vision of equalization. St. Paul writes to the parish in Corinth:

> 'But by showing how eager others are to help, I am trying to find out how real your own love is. You know the grace of our Lord Jesus Christ; rich as he was, he made himself poor for your sake, in order to make you rich by means of his poverty ... I am not trying to relieve others by putting a burden on you; but since you have plenty at this time, it is only fair that you should help those who are in need. Then, when you are in need and they have plenty, they will help you. In this way both are treated equally. As the

> scripture says, 'The one who gathered much did not have too much, and the one who gathered little did not have too little' (2 Corinthians 8:8ff.).

As Christians we have to and we want to work to release people from poverty and for fair distribution. This is about more than distributing assets between people. A creation-oriented approach means that we need to include all of creation when we think about justice and peace.

Justice is not just about handing over financial means to someone far away. It is just as much about giving ecological space to those alive today and those who will be alive in the future by reducing our own exploitation of the earth's resources. Climate change is fundamentally a question of global justice. The climate issue should be handled as part of the double challenge facing humanity; to stop climate change and to give billions of people the chance of development, free of poverty and repression.

We often discuss how fast and dramatically emissions must fall in terms of percentages and years. Another way of visualizing the climate challenge is to use a carbon budget instead to show how much carbon we may emit in total. In the IPCC's most recent report, climate researchers have calculated the cumulative emissions since 1860 and established that a total of 1,000 billion tonnes of carbon may be emitted into the atmosphere over the next millennium if we are to have a reasonable chance of meeting the target of global warming not exceeding

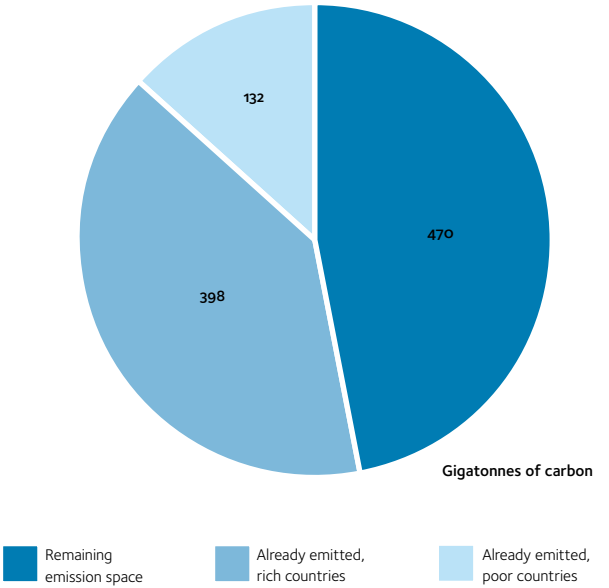


FIGURE 3. THE GLOBAL CARBON BUDGET If we are to have a reasonable chance of meeting the two-degree target, a total of 1,000 billion tonnes of carbon may be emitted over the next millenium. We have already used up just over half of this emission space, and most of it has been used by the early industrialized countries. How should the remaining emission space be distributed?

SOURCE: The Swedish Society for Nature Conservation, which bases the image on Figure SPM10 in the IPCC's most recent climate report, 'Summary for policy makers', and the diagram on p. 120 of the 'Technical summary'. The basis for the assessment of developing countries' share of emissions comes from Mathias Friman, 2013, *Historical Responsibility: Assessing the past in international climate negotiations* (Linköping Studies in Arts and Science 569).

two degrees. 470 billion tonnes are left of this budget, which will be exhausted in just over thirty years if emissions continue at the current level.[38] However, global emissions are increasing, which means that we risk going over the carbon budget even faster. Figure 3 shows the proportion of total emissions produced to date by industrialized countries and by developing countries, respectively. The distribution of the remaining emission space is a matter of justice.

Peace with the earth is increasingly becoming a precondition of peace on earth. The role of oil in many of the world's conflicts has long been obvious. It is not yet equally clear whether these conflicts will be enhanced by climate change, but competition for limited resources such as water, agricultural land, air space and ocean regions is already creating tension that may worsen as the climate changes. A shortage of food and sustainable supply potential is creating uncertainty and flows of refugees, and is contributing to conflicts.

An awakening is required among the world's decision makers. They must realize that it is not possible to win a war against the planet or to deny that the planet has limits. We must make peace with the earth. For the sake of the poor and the vulnerable, for the sake of future generations and for the integrity of creation.

Small and large steps: values and behaviour

Now that the challenge is so big, what use are small steps? If the world's decision makers are hesitating, what difference does it make whether I recycle and take the train rather than driving?

We need big, radical thinking and we also need small individual steps.[39] The scope of climate change must not create dejection and paralysis. Even the longest journey starts with a first step.

We need changes in both behaviour and values and there is interaction between them. Small changes in everyday behaviour can lead to changes in values, which, in turn, lead to new changes in behaviour. Getting into the habit of switching off lights and standby functions can make us think about our own energy use. Small steps to increase the vegetarian proportion of our food can make us reflect on meat production.

Small changes in behaviour can also prepare the ground for structural changes. When our behaviour changes, it affects how we think about our actions. And when our values change, we are prepared for the political decisions that must be made for the big steps to be taken. Small changes in behaviour also represent a positive opportunity for the individual to live in accordance with his or her own values. However, practical changes in our private everyday lives must not be used as an excuse for not accepting collective changes. Nor must they take up so much energy that they become something we do instead of working for common and political solutions.

Individuals and common responsibility

Responsibility for the transition to a fossil free economy is sometimes placed largely on individuals, who must amend their housing and change their shopping, travel and eating habits. However, there are limits to how much individuals can reduce their climate impact. It is not possible to stop driving if public transport is not adequately developed, and individuals are unable to make the investments needed in the transition to a fossil free economy. Researchers warn about overconfidence in how much can be achieved by individual consumers changing their behaviour. They want to see political decisions that make it systematically easier for individuals to make green choices.[40]

However, politically managed changes are not enough on their own either. Interaction between individual and collective change is decisive. Individuals are not primarily consumers. They are citizens who can participate in political change and can confirm and support each other in communities. When committed citizens organize themselves, demand clear political direction and indicate alternative opportunities, politicians dare make courageous decisions. Therefore, we have to meet the climate challenge *together*.

For large parts of the last century, the struggle against poverty and for universal welfare was a unifying vision for the Swedish society. Towards the end of the century, when much of the vision had been realized, it was largely replaced by images of the future that were more about individuals' freedom and dreams. We

should not romanticize life in poorer times and in poorer countries. However, we should not either ignore the fact that something important is lost with increasing individualism.

Christian faith holds that individual dreams are not enough to create a meaningful life. We find the meaning of life in community, sharing and solidarity. It is positive that climate change entails an opportunity for renewed community with people across time and space, with nature and with the Creator. There is something good in the fact that our generation shares the major, global task of stopping climate change.

Politics, consumption and economics

Together with other industrialized countries, Sweden has an historical responsibility for the emissions we have produced over many years that have contributed to the temperature rise we are seeing today. Sweden's social and economic structure and geographical location, with good access to biofuels, solar energy, wind power and hydro power, also means that we are particularly well placed to make the transition to a fossil free economy. Sweden therefore has the opportunity to be a pioneering country, showing that it is possible to make the transition to a fossil free economy while retaining economic welfare.

The use of fossil fuels must be phased out. The ambition to make the transition to a fossil free economy fast must permeate all political activity, and international involvement must be based on a clear commitment to justice. History teaches us that

a fast transition is possible if we have the will and the motivation. At the start of the Second World War, production was switched over completely in many countries in just a few months. We are approaching a point at which this drastic comparison is becoming increasingly relevant.

In terms of justice, Sweden also has a responsibility to contribute to climate adaptation and the transition to a fossil free economy in developing countries. Our support for climate-related measures must not be taken from the resources Sweden previously set aside to contribute to reducing global poverty.[41] It must be possible to apply technical and organizational solutions that are developed and implemented in Sweden on a larger scale so that they can contribute to the transition to a fossil free economy in other parts of the world by technological change being brought forward.

Politically managed policy instruments are needed to highlight the costs of negative environmental impact and accelerate the transition. New ways of thinking, economic models and welfare measures need to be developed to help us organize a society that promotes human welfare and does not exceed the planet's limits.

Leadership is needed. Not just in politics; in companies and in schools, in associations and families, in churches and parishes, we need people who formulate visions, dare take a stand and take concrete initiatives, not people who anxiously wait to see what others do and think.

It is about life

We citizens, electors and politicians, need to keep the climate issue alive and urgent, even when the media tire of it. We must cultivate our ability to act in the long term, to think further ahead than one term of office, and we must be able to keep more than one issue alive at a time. It must be possible to reduce the use of fossil fuels and continue to work on issues of local and global justice, the global water situation, biodiversity, etc.

We need strategies to overcome the mental, social and political inertia that impedes the transition required. We must not ignore conflicts of interests. If people are affected negatively by changes, perhaps they need to be compensated so that the efforts to reduce emissions are not paralyzed. There needs to be fundamental confidence in the social community, that we shoulder each other's burdens when they become too heavy for any of us.

In the transition, we need to test different strategies and accept a diversity of ideas and solutions. New technology is essential. However, it would be risky to rely on technical super-solutions.[42] Around the world, there are examples that deserve to be studied and used for inspiration, everything from the government-led energy transition in Germany to practical solutions being developed at local level.

How should the Swedish people consume in the future? Will we pay for singing lessons instead of lying on the beach in Thailand? Identity-forming consumption is increasing today. Our choice of home, travel and clothes is increasingly an expression of

our identity. Identity consumption is rarely sensitive to prices and we can already see how many groups derive status from driving a green car or eating climate-friendly food. There may be a driving force here to reduce emissions from consumption. However, we probably need to reconsider our consumption patterns more fundamentally. Consumption of goods produces higher emissions than consumption of services, and private consumption produces higher emissions than public consumption. The knowledge that public consumption largely consists of healthcare, education and social services further emphasizes the fact that the balance between goods and services needs to be highlighted.

We believe and hope that we can see new alliances between, for example, scientific climate research, happiness and welfare research and religion. The desire to make good change can be enhanced if we can show how energy transition, sustainability and welfare promote each other. If it is also possible to show that a climate-friendly life is also a happier life, then we have made a major advance and the willingness to give up old patterns increases.

The future starts now

The climate crisis puts us in a *kairos* moment, the right time to change for the better. It may be the time to initiate a departure from patterns of life and consumption that repress and enslave people.

Changes in values are about more than theoretical principles, and when the climate issue arouses both anxiety and hope in people, these are not just transient emotions. The issue contains existential components that must not be underestimated or overlooked. A society that understands the existential dimensions of the crisis profits by allowing the social and ethical 'capital' of the religious traditions to contribute to building a sustainable society. These often possess a cultural integrity, spiritual depth and moral force that secular approaches may lack.

It is liberating to consider our age in relation to the prospect of eternity, if only to be able to hear the rhythm of creation beyond the fast ticking of the quarterly reports and terms of office. This also offers the far-sightedness that is necessary to meet the climate challenge.

It is necessary to oppose the message of our age that our value as people depends on what we perform and what we consume. Churches and other religious communities stand for values and connections that give people identity and meaning without them being linked to consumption. Churches are places in which we can expand our individual, often consumption-linked dreams and visions of the future into shared images of the future. Literature, art, film and other forms of cultural expression also contribute to an existential processing of the issues aroused by climate change. The church is right to listen to them, learn from them, contribute to them and actively take part in the public debate.

As a church, we must provide space for existential debate and be prepared to deal with people's questions concerning climate change in our pastoral care. The church's liturgy, rites, hymns, prayers and preaching give us the language, decisiveness and inspiration to change our lives and influence society.[43]

The Church of Sweden is also an organization that uses energy and other material resources, and owns and manages land and buildings. The Church of Sweden thus has a considerable impact on the environment and climate, and we are aware that there remain shortcomings in the Church's actions in this respect. However, our ambition must be to act in all of these areas in such a way that the Church contributes to the transition to a fossil free economy.

With this Bishops' letter, we want to show that, on the basis of a Christian outlook on life, there are ways of making progress in the work to curb climate change that combine expertise with great hope. It is our intention that this will contribute to releasing the urgently required positive power to act, both individually and collectively.

Together with churches, organizations and political leaders in all countries, we want to work to make strong, binding climate agreements. Our commitment does not begin now and does not stop here. Our commitment will continue. The next few years are probably decisive if humanity is to have a chance of stopping the worst climate change.

Challenges

ON THE BASIS of the above, we, the Bishops of the Church of Sweden, would like to direct the following challenges...

... to the Church of Sweden's parishes, dioceses and national level:

- We live by God's grace and reconciliation is possible. Let the parishes' services, prayers, discussions and hymns be clear expressions of the hope that gives decisiveness and commitment for the entire future of creation.
- Make a special study of the Bible texts that concern our place and our responsibility in creation, and justice and righteousness. Encourage each other to learn more about the climate crisis and how the worldwide church is attempting to deal with it.
- Carry out joint activities to support and inspire people who want to work for a sustainable, just lifestyle.
- Use the tools available to support parishes' climate and environmental work, for example the opportunity to take an environmental diploma.
- Set ambitious targets for energy savings in the Church of Sweden's buildings and for use of renewable energy.

- Let the management of the Church's financial assets (shares, forests and land) show how a considered theological view of creation contributes to reducing climate impact and accelerates the transition to a fossil free economy.

... to everyone in Sweden:

- Seek and proceed by trial and error. Talk to others about what you think and feel about climate change. What opportunities do you see to create a sustainable lifestyle?
- Reflect on your own responsibility in everyday life and in politics. Use your right, as a citizen and elector, to work for a strong transition to a fossil free economy.
- Take concrete steps towards a more sustainable lifestyle and towards supporting people who are hit hard by climate change.
- The climate crisis is also an existential and spiritual crisis. Make the most of the resources in the religious tradition that is closest to you.
- Seek support from others and do not give up. No one can change the world on their own and no one is perfect, but everyone's contribution is needed.

… to Swedish decision makers and public authorities:

- Introduce targets and effective policy instruments and make the necessary investments to reduce Sweden's climate emissions to one tonne per capita by 2050.
- Work towards a higher level of ambition in EU climate policy.
- Support developing countries' climate work with funds in addition to the aid target of 1 per cent of Sweden's gross national income and work to develop innovative sources of climate finance at the international level.

... to companies and organisations:

- Do not wait for international agreements or strong national policy instruments. Invest in renewable energy sources, energy efficiency enhancement and sustainable business strategies.
- Reflect together, try out concrete solutions and form opinion. Work together.
- Contribute to the development of a fair, ecologically sustainable society on the basis of your specific roles and resources.

… to all Member states of the United Nations Framework Convention on Climate Change (UNFCCC) and other relevant international decision makers and organizations:

- Act fast and constructively, at the next opportunity in Paris in 2015, so that global climate agreements can be made that are ambitious enough to be able to prevent dangerous climate change. Such agreements should be based on fair distribution of responsibility and be legally binding on all parties.

… to church leaders worldwide:

- Let us together strive to enhance the contributions of the churches and religions to climate justice and the transition to a fossil free economy. International ecumenism and interfaith cooperation can become a functioning tool in this work.
- Let us support climate work on all levels through dialogue with decision makers, shared activities and constant intercessions.

Notes

1 *The Swedish Order of Worship II*. Order for the ordination of Bishops.

2 Stefan Edman, 2003, *Jorden har feber. Kan vi hejda klimatförändringen?* (The earth has a temperature. Can we stop climate change?) (Stockholm: Atlas). *** Intergovernmental Panel on Climate Change (IPCC), 2013, 'Summary for Policymakers', in: Climate Change 2013: *The Physical Science Basis*, Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. *** The best known study of the warm medieval era is a sediment bore in Lake Korttajärvi; see Mia Tiljander et al., 2003, 'A 3000-year palaeoenvironmental record from annually laminated sediment of Lake Korttajarvi, central Finland', *Boreas* 26. *** Johan Rockström, 2013, 'Utmaning: Omställning till en hållbar utveckling' (Challenge: transition to sustainable development), in Jesper Strömbäck (ed.), *Framtidsutmaningar. Det nya Sverige* (Future challenges. The new Sweden) (Stockholm: 8tto). *** Solomon M. Hsiang et al., 2013, 'Quantifying the Influence of Climate on Human Conflict', *Science* 13 September 2013, vol. 341, no. 6151.

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4 G. Whiteman et al., 2013, 'Vast costs of Arctic change', *Nature* vol. 499: 401-403.

5 Other possible tipping-points with very different time frames could, for example, be collapsing glaciers in Antarctica, the transformation of the Amazon region into a savannah and dramatic weakening of the Indian monsoon. Per Westergård, 2013, 'Tröskeleffekter kan få system att kollapsa' (Tipping-points can make systems collapse), *Miljöforskning. FORMAS tidning för ett hållbart samhälle* (Environmental research. FORMAS' journal for a sustainable society), March 2013.

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12 United Nations Development Programme (UNDP) and Global Gender and Climate Alliance (GGCA), 2012, *Overview of Linkages between Gender and Climate Change*, Policy Brief. *** UN WomenWatch, 2009, *Women, Gender Equality and Climate Change,* Fact Sheet, see: www.un.org/womenwatch/feature/climate_change

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14 United Nations Department of Economic and Social Affairs (UNDESA), Population Division, 2013, *World Population Prospects: The 2012 Revision, Key Findings and Advance Tables*. Working Paper No. ESA/P/WP.227.

15 UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. A Synthesis for Policy Makers*.

16 Quoted from Georg Henrik von Wright, 1986, *Vetenskapen och förnuftet* (Science and Reason) (Stockholm: Bonniers), p. 65.

17 Thomas Sprat. History of the Royal Society. Edited by Jackson I. Cope and Harold Whitmore Jones (St. Louis: Washington University Press, 1958), 327 (Spelling adapted by the author).

18 Emissions from transport abroad that are not included in the national emissions more than doubled during the period. In 2012, they amounted to just over 8 million tonnes of carbon dioxide equivalents, while domestic

emissions amounted to just under 58 million tonnes. http://www.naturvardsverket.se/Sa-mar-miljon/Statistik-A-O/Vaxthusgaser-utslapp-fran-utrikes-sjofart/

19 Swedish National Audit Office, 2013, *Klimat för pengarna? Granskningar inom klimatområdet 2009–2013*, rir 2013:19. (Climate for the money? Examinations in the climate field)

20 Since 1993, emissions from Swedish consumption have increased by 15 per cent. See: www.naturvardsverket.se/Sa-mar-miljon/Statistik-A-O/Vaxthusgaser--utslapp-av-svensk-konsumtion

21 A book that has attracted a lot of attention in recent years is Tim Jackson, 2011, *Välfärd utan tillväxt. Så skapar vi ett hållbart samhälle* (Prosperity without growth. The transition to a sustainable economy) (Stockholm: Ordfront). Jackson is a British economist and member of the Sustainable Development Commission, which was an advisory body to the British Government between 2000 and 2011. 2013 saw the publication of the book *Att svära i kyrkan. Tjugofyra röster om evig tillväxt på en ändlig planet* (Swearing in church. Twenty-four voices about perpetual growth on a finite planet) by Katarina Bjärvall et al. (Uppsala: Pärspektiv).

22 See, for example, Paul Raskin et al., 2002, *Great Transition: The promise and lure of the times ahead*. A report of the Global Scenario Group (Stockholm: Stockholm Environment Institute), p. 42.

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35 *Uppsala Interfaith Climate Manifesto*, 2008, see: www.svenskakyrkan.se/default.aspx?id=663952

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37 The full statement can be read at: http://www.episcopalchurch.org/fr/node/15517

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39 Sites such as www.svenskakyrkan.se/klimatrattvisa give advice on how we can reduce our climate impact and make a climate gift to the most vulnerable.

40 Oksana Mont et al., 2013, *Förbättra nordiskt beslutsfattande genom att skingra myter om hållbar konsumtion* (Improving Nordic decision making by dispelling myths about sustainable consumption), TemaNord 2013:552 (Copenhagen: Nordic Council of Ministers).

41 Church of Sweden, 'Statement on the Report from the UN Secretary-General's 'High-Level Advisory Group on Climate Change Financing' and the European Commission's official report 'Scaling up International Finance after 2012". Ks 2011:0517

42 *Carbon Capture and Storage*, CCS, involves carbon dioxide from major emission points being separated from flue gases and stored deep beneath the ground or the sea bed. Large-scale technical manipulation of the climate, *geoengineering*, for example, can involve sunlight and solar heat being reflected away from the earth using space mirrors or by manipulating clouds.

43 At the European Ecumenical Assembly in Sibiu in 2007, 'Creation time' was one of ten recommendations to the churches in Europe: 'We recommend that the period from the 1st September to the 4th of October be dedicated to prayer for the protection of creation and the promotion of sustainable lifestyles that reverse our contribution to climate change'. See: www.eea3.org/documenti/final/FinalmessageEN.pdf

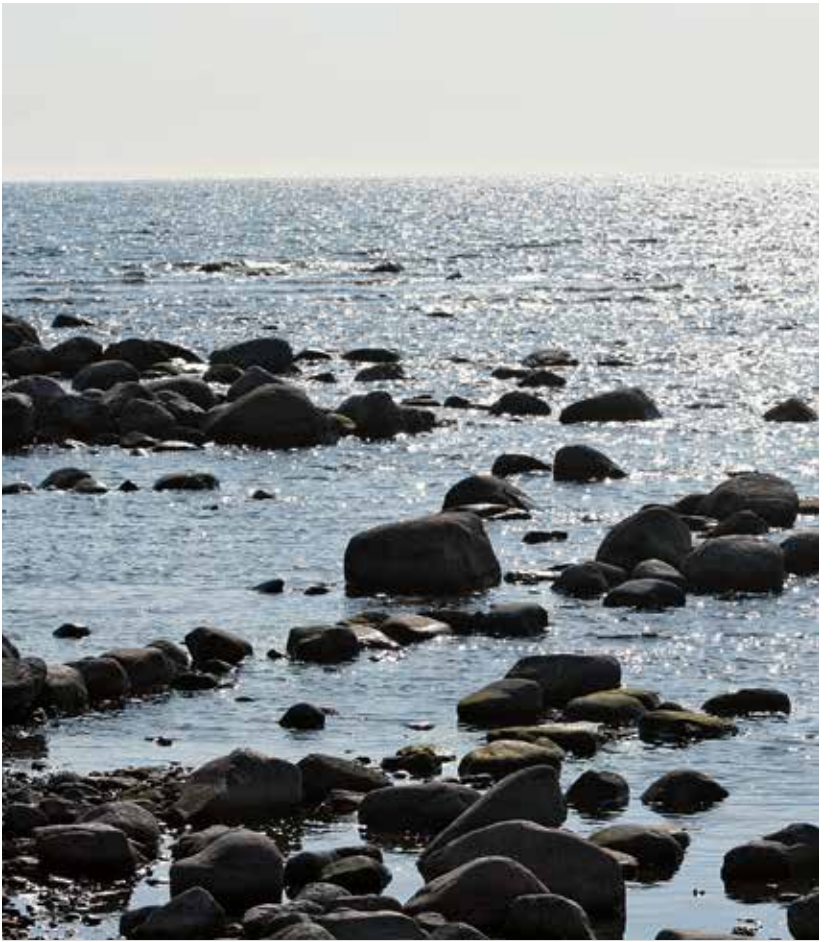

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Photo information

Page 10 Photo: Alexander Sjöberg/IKON. OP17 in Durban, South Africa, 2011. 'Take action' volunteers from the Church of Sweden and the Church of Sweden Youth, together with members of Aprodev and ACT Alliance, are working to exert influence to bring about a fair, ambitious and binding climate agreement.

Page 19 Photo: Lena Stenberg/IKON.

Page 22 Photo: Melker Dahlstrand/IKON.

Page 28 Photo: NASA. A nebula, in the constellation of Orion, taken from space with the Hubble telescope 6,400 light years away.

Page 34 Photo: Solvatten. The Swedish invention Solvatten can eliminate bacteria in water using solar energy. The water is also heated, which saves fuel for washing and food preparation.

Page 43 Photo: Mattias Klum. Torres del Paine national park, Chile.

Page 50 Photo: Paul Jeffrey/ACT A planting project in Haiti, run by the Lutheran World Federation.

Page 56 Photo: Mattias Klum. Leaf-nosed lizard in Danum Valley, Malaysia.

Page 59 Photo: Linda Mickelsson. Poison drum photographed in Sweden.

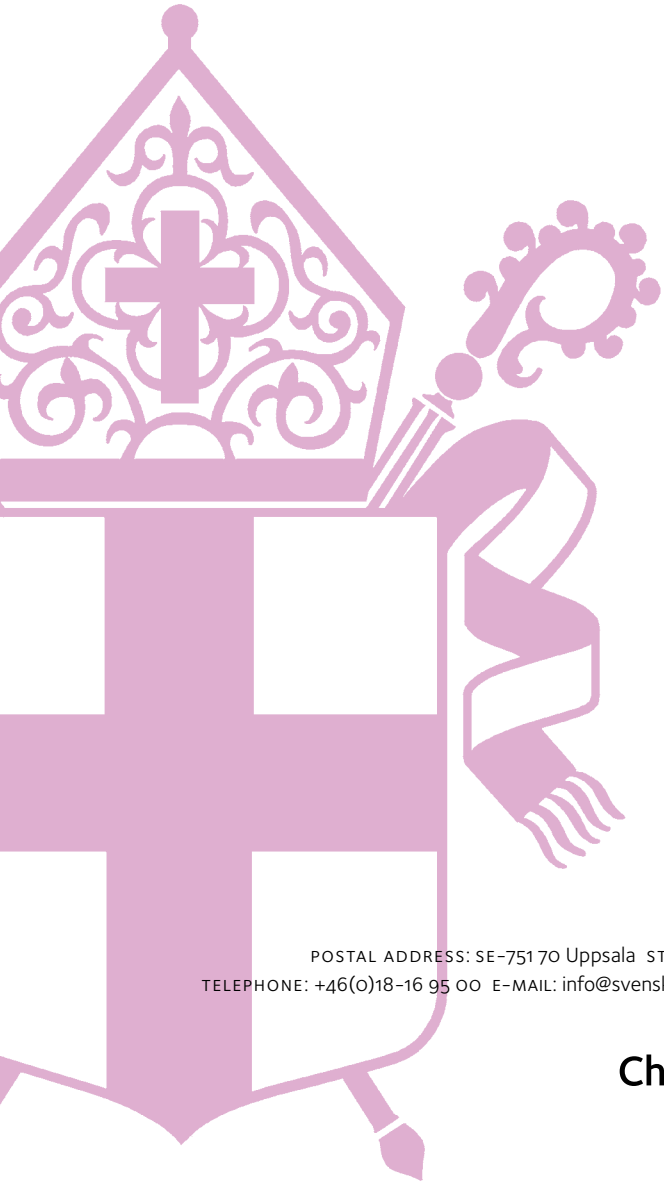
Page 65 Photo: Bernt Enderborg. Triumphal crucifix in Öja Church, Gotland.

Page 72 Photo: Magnus Aronson/IKON Interfaith Climate Summit 2008, Archbishop Anders Wejryd.

Page 79 Photo: Johnér Bildbyrå AB

Page 88 Photo: Göran Bohman. Långöre, Öland.

Page 99 Photo: Göran Bohman. Baltic Sea.



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