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**2014 Cafod lecture: Argentinian bishop highlights urgency of tackling climate change
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Climate change and poverty were the focus of the 2014 lecture of the Cafod annual lecture. The speaker was Argentinian Bishop Marcelo Sánchez Sorondo, who is Chancellor of the Pontifical Academy of Sciences and Social Sciences and a close friend of Pope Francis.

Speaking in London on 7 November, he told Cafod supporters: "The challenge of climate change has become not only economic, political or social. It is also an issue of morals, religion, values such as justice and social inclusion, the obligation of solidarity with future generations and the moral obligation to care for the earth, namely creation, which is our habitat. And this is the point of concern for the Pope." The full text of the bishop's lecture follows:

In his last message to the Academy, which we consider his spiritual testament for scientists, Blessed Pope Paul VI expressed some really important concepts on the scientist's vocation. Papa Montini, of course, is the Pope of the Encyclical *Populorum progressio*, where he states that, "development is the new name for peace" (26 III 1967). Almost as a further interpretation of the meaning of development, Paul VI told the Pontifical Academy on 19 April 1975 that "two attitudes ... it seems to us, should characterize the scientist, and especially the scientist who is a Christian. On the one hand, he must honestly consider the question of the earthly future of mankind and, as a responsible person, help to prepare it, preserve it, and eliminate risks; we think that this solidarity with future generations is a form of charity to which a great many men are sensitive today, in the framework of ecology. But at the same time, the scientist must be animated by the confidence that nature has in store secret possibilities which it is up to intelligence to discover and make use of, in order to reach the development which is in the Creator's plan. This hope in the Author of nature and of the human spirit, rightly understood, is capable of giving new and serene energy to the researcher who is a believer".

These enlightening words contain a programme for scientists, political and economic leaders and all people of good will who believe in the truths of science. In essence, he said that respecting nature means preserving it, but preserving it also means developing it according to its real potentialities that the scientist must discover. Therefore the scientist, and especially the Christian scientist, must examine the future of humanity and of earth and, as a free and responsible being, must contribute to preparing and preserving it and to eliminate the risks both of the natural and of the human environment. However, at the same time, the scientist must be moved by the trust that nature hides, in its evolutionary mechanisms, potentialities that intelligence and freedom must discover and implement to achieve the development that is part of the Creator's design. In this sense, although limited, man's action participates in God's power and is capable of building a world suited to his double bodily and spiritual life: a human world, not one for a group of a class of privileged people. This hope and trust in God, Author of nature, and in the capability of the human spirit, are capable of giving the researcher new energy and profound serenity. Of course original sin is always lurking and current sins and human errors can cause man to disobey the invitation to collaborate as vicars of God on earth and harm the natural and human environment.

Today solid scientific evidence exists that global climate is changing and that human activity based on the use of fossil materials contributes decisively to this trend. Coupled with an economy based on profit and on the games finance plays in order to profit from money itself, without a clear orientation to the production of goods, this leads to social exclusion and the new forms of slavery such as forced labor, prostitution, organ trafficking, and the use of drugs as a method of corruption. Therefore, a programme in the light of the *Populorum progressio* and Pope Montini's further interpretations must include climate stabilization, the sustainable development of the natural environment and social inclusion focused on the centrality of the human being and the common good.

The Global Situation: The Anthropocene Era

Humanity has crossed the threshold of a new era. Our technological skills have led man to a crossroads. We are the heirs of two centuries of considerable technological advancements: steam power, railroads, telegraphy, electrification, automotive transport, aviation, industrial chemistry, computing and now the digital revolution, biotechnologies, nanotechnologies and robotics. These advances have reshaped the world economy into one that is increasingly urban and globally connected, but also more and more unequal.

However, just as humanity confronted "revolutionary change" (Rerum Novarum) in the 19th century at the time of Industrialization, today we have changed the natural environment so much that scientists, using a word coined by our Academy, tend to define our era as the Anthropocene, that is to say, a period of time in which human action is having a decisive impact on the planet due to the use of fossil fuels. If current trends continue, this century will witness unprecedented climate change and the destruction of the ecosystem, with tragic consequences for us all.

Human action that doesn't respect nature has a boomerang effect on human beings, creating inequality and increasing what Pope Francis has defined as "globalization of indifference" and "economics of exclusion" (Evangelii Gaudium), which endanger solidarity and present and future generations. Let us limit ourselves to some obvious and grave signs by quoting Paul VI's words: "organized crime, premeditated for the extortion of often fabulous amounts of money, by threatening the death of innocent people: isn't this an epidemic of evil, avid and cruel, that betrays a dearth of noble and moral principles, that has caused the conscience of many children of our time to fearsomely collapse? And what can we say about the propaganda in favor of the liberalization or legalization of procured abortion, with no maternal hearts rising in defense of their nascent creatures and of their vocation at the service of life? And should we not have at least feelings of pity and hope for entire populations, who are still languishing in hunger and misery? And should we not feel at least a shudder of outrage and fear for armaments, which extend their lucrative markets throughout the nations, and for the tremendous episodes of civil wars, which are possibly the fatal precursors of other conflagrations of which the radio stations and the newspapers of the world speak. Should we not have at least an expert appeal to prevent today, at their roots the wars that tomorrow, with incalculable fury, could once again bloody the face of the earth?" (Paul VI, General Audience, 31 December 1975).

Advances in measured productivity in all sectors - agriculture, industry and services - enable us to imagine an end to poverty, shared prosperity, and a further increase in life expectancy. However, unjust social structures (Evangelii Gaudium) have become an obstacle to the appropriate and sustainable organization of production and to the equitable distribution of its fruits, which are both necessary to achieve those objectives. The relationship between humankind and nature is filled with unintended consequences of the actions of each of us at the expense of present and future generations. Socio-environmental processes are not self-correcting. Market forces alone, with no ethics and collective action, cannot solve the interrelated crises of poverty, exclusion and the environment. However, the failure of the market has gone hand in hand with that of the institutions, which have not always aimed at the common good.

Problems have been exacerbated by the fact that, at present, economic activity is measured only in terms of gross domestic product (GDP) and does not take into account the degradation of the Earth that goes with it, nor of the unjust inequalities between countries and within each country. GDP growth has gone hand in hand with unacceptable gaps between rich and poor. The latter, in fact, do not have access to most of the advances that have occurred in our time. For example, 50% of the available energy is used by less than a billion people, whereas its negative impacts on the environment affect three billion people who do not have access to it. These three billion people, in fact, have so little access to modern energy that they are forced to cook, heat and light their homes using methods harmful to their health.

The heavy use of fossil fuels on which the global energy system is based profoundly disrupts the Earth's climate and causes acidification of the world's oceans. Global warming and the extreme weather conditions it entails will reach unprecedented levels during our children's lifetime and 40% of the world's poor, whose role in pollution worldwide is minimal, are likely to suffer the most. Industrial-scale farming practices are transforming the land all over the world, destroying ecosystems and threatening the diversity and survival of the species on a global scale. Yet, despite the scope and intensity of this unprecedented land use, food insecurity is still a global threat. One billion people suffer from chronic hunger and another billion suffer from so-called hidden hunger caused by micronutrient deficiency. This is even more tragic when you consider that one-third of the food produced worldwide is wasted, which, as Pope Francis said, is like "stealing from the table of the poor and hungry."

Report of the Intergovernmental Panel of Experts on Climate Change (IPCC)

After what the Academy said, but in parallel, the IPCC intergovernmental panel of experts on climate at the United Nations concluded with 95% certainty that the human influence on the climate system is clear and obvious, according to the increasing concentrations of greenhouse gases in the atmosphere, the positive radiative forcing and global warming measured, and thanks also to the better understanding of the climate system that we now have. Every five years, the UN panel of experts prepares a comprehensive report that analyzes all publications on climate on the basis of the most current scientific debate.

Although neither the report submitted by this group nor the Academy's are perfect, the assessments of these publications on climate change confirm that essentially all documents published now accept as a scientific truth that climate change is due to human activity.

Our working group, studying the melting and retreat of the so-called eternal glaciers in the Alps, the Andes and the Himalayas, concluded that this is due to human activity too. Faced with the objection that there is evidence of climate change but not of the fact that climate change is due to human activity, our group responded that natural and biological causes, such as the sun, produce changes over a period of thousands of years (an ice age lasts 10,000 years), whereas the peculiarity of the influence of human activity is to be short and to also coincide with the period in which the effects of the Industrial Revolution started appearing.

A joint statement signed by eleven of the leading scientific academies of the world, representing Germany, Brazil, Canada, China, USA, Russia, France, Italy, India, Japan and the UK, follows the statements that were made for the first time by our Academy and confirms the scientific consensus that climate change is due to human activity.

Today, although we can say that no one argues that emissions of greenhouse gases are produced by humans, scientists continue to conduct research on how climate will respond to increasing levels of greenhouse gases in the atmosphere over time and in the different regions of the world.

The importance of Acting Now

2015 could be a decisive year in history. The UN as a whole has unique opportunity to establish a new and sustainable course for the global economy at two summits: the one to draft the Sustainable Development Goals in September and the one on climate in Paris in December.

We still have time to act. The challenge of climate change has become not only economic, political or social. It is also an issue of morals, religion, values such as justice and social inclusion, the obligation of solidarity with future generations and the moral obligation to care for the earth, namely creation, which is our habitat.

In view of persistent poverty, increasing economic and social inequalities, and the ongoing destruction of the environment, governments around the world have called for the adoption, by 2015, of new universal goals, called Sustainable Development Goals (SDGs), which should serve to guide actions on a global scale after 2015. Achieving these goals will require global cooperation, technological innovations (most of which already exist) and economic and social support policies at the national and regional level, such as taxation and regulation of environmental violations, restricting the enormous power of transnational corporations and an equitable redistribution of wealth. It is now abundantly clear that the relationship of Humanity with Nature must be managed through collective cooperation at all levels - local, regional and global.

The technological and operating means to achieve a truly sustainable development are already available or within reach. We can put an end to extreme poverty with targeted investments to promote access to sustainable energy, education, health, housing, social infrastructure and livelihood for the poor. Social inequalities can be addressed with measures to protect human rights, the rule of law, participatory democracy, universal access to public services, the recognition of personal dignity, the significant improvement of the effectiveness of fiscal and social policies, ethical financial reform, policies creating decent work on a large scale, the integration of popular and informal sectors of the economy, and national and international cooperation to eradicate the new forms of slavery such as forced labor and sexual exploitation. Energy systems can be made more efficient and less dependent on coal, oil and natural gas in order to prevent climate change, protect the oceans, and clean the air from pollutants generated by coal. Food production can be made much more profitable and less costly in terms of water consumption and soil, more respectful of farmers and indigenous people and less polluting. Food waste can be drastically reduced, with both social and environmental benefits.

The biggest challenge may lie in the sphere of human values. The main barriers to achieving sustainability and inclusion are human inequality, injustice, corruption and human trafficking. Our economies, democracies, societies and cultures are paying a high price for the widening gap between rich and poor within each nation and between them. And perhaps the most damaging effect of the broadening gap between income and wealth in so many countries is the progressive reduction in equal opportunities. Indeed, what is more important is that inequality; global injustice and corruption are undermining our ethical values, personal dignity and human rights. There is a strong need, first of all, to change beliefs and attitudes, and to fight the globalization of indifference with its culture of waste and idolatry of money. We must insist on the preferential option for the poor; strengthen the family and the community; and honor and protect God's creation as humanity's fundamental

responsibility towards future generations. Humanity urgently needs to revise its relationship with nature, adopting the aforementioned Development Goals in order to promote a sustainable model of economic development and social inclusion. Healthy human ecology in terms of ethical virtues contributes to the achievement of a sustainable and balanced environment. Today we need to establish a mutually beneficial relationship: the economy needs to be imbued with true values, and respect for God's creation should promote human dignity and well being.

On these issues, all religions and all people of good will can agree. Today's young people will embrace them to create a better world. The message of the Pontifical Academies is an urgent warning because the dangers of the Anthropocene are real and the injustice of the globalization of indifference is a serious issue. Yet, our message is also one of hope and joy. This is exactly what the Blessed Pope Paul VI wanted to achieve with his project of the civilization of love: a healthier, safer, fairer, more prosperous and more sustainable world is within our reach. The believers among us ask the Lord to give us our daily bread as food for the body and soul.

An Encyclical and an Interreligious Meeting

Following the lead of the great recent Popes, especially Paul VI, Pope Francis has a unique role as a religious leader and moral guidance to protect, preserve, sustainably develop the natural environment and achieve that social inclusion that can no longer be postponed. The problem of climate change has become a major social and moral problem, and mentalities can only be changed on moral and religious grounds.

Therefore, our Academics supported the Pope's initiative to publish an Encyclical or another such important document on climate and social inclusion to influence next year's crucial decisions. In fact, the idea is to convene a meeting with the religious leaders of the main religions to make all people aware of the state of our climate and the tragedy of social exclusion starting from the biblical message that man is the steward of nature and of its environmental and human development according to its potential and not against it, as Paul IV intended. Thus, the prophetic message of Paul VI continues to be valid even in this new era that humanity is beginning. It is connected to the programmatic expression that he used at the end of the 1975 Jubilee Year, when he urged everyone to promote "the civilization of love" as its successful culmination. In terms of public and social life, and relationship with nature, this civilization of love is the coronation of the period of grace and good will of the Second Vatican Council, or rather the beginning of a new era of grace and good will, which history unfolds before us.