
GENDER PERSPECTIVE ON CLIMATE CHANGE AND ENVIRONMENT TOWARDS SUSTAINABLE DEVELOPMENT

Barbara Kijewska^{1*} and Igor Mitrocuk²

¹ *University of Gdansk, Department of Political Science, 4 Jana Bazynskiego St., 80-309, Gdansk, Poland*

² *Institute of Environmental Protection - National Research Institute, Warsaw and Kozminski University, Department of Economics, 57/59 Jagiellońska St., 03-301, Warsaw, Poland*

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Abstract

In 2015 the Pope Francis presented his Encyclical Letter ‘Laudato Si’ to voice the most important thoughts of the Holy See on human in general and Roman Catholic in particular response to rapid and omnipresent detrimental changes that are happening to the Planet Earth because of irresponsible actions of the human race against environment in broad sense, inducing at the same time climate change. The same year the international community united in something that was not obvious to international experts and participants of the United Nations Framework Convention on Climate Change Conference in Paris - the COP21, till the very end of the process. The countries - Parties to the UNFCCC agreed on the text of the Paris Agreement - legally binding accord on climate change mitigation and adaptation. Both documents address all the humankind without proper regard given to the position of women, who differ in many ways in their role and attitude towards climate change. In our article the analysis is done on the gender relation to climate change - on the basis of literature review as well as the words of the Pope on the issue in the Encyclical. Analysis presents the most important topics to which we sought reference in the Encyclical of Pope Francis. Results confirm deep understanding of the inter-linked processes around the climate change and no much attention is given to women by the Head of the Roman Catholic Church.

Keywords: policy, climate change, sustainable development, equality, environment

1. Introduction

In line with the position of international organisations, their mission and action plans, such as United Nations’ Beijing Platform for Action (1995), Sustainable Development Goals [SDG 2030, *2030 Agenda for Sustainable Development*], the European Union [European Parliament, Women, gender equality and climate justice, *Representation*, 2018], the equal treatment of both sexes is an obvious prerequisite for sustainable development as well as for

*E-mail: barbara.kijewska@ug.edu.pl

tackling climate change challenges successfully. Scientific research as well as reports of international aid organisations indicate that women are not only victims but also vivid drivers of change and through their full participation they can formulate and implement effective climate actions as well as actions directed towards climate change mitigation and adaptation [1-3]. The whole generations have passed since the time of first declarations and positions underlining the need to include women in environmental dialogue as the proof of environmental justice (Nairobi Convention (1985), The Earth Summit in Rio (1992), Beijing Declaration (1995)).

Pope Francis - Jorge Mario Bergoglio in his Encyclical 'Laudato Si': On the Care of Common Home' (2015) supported the scientific view of the anthropogenic reasons for rapid climate changes and called for international social solidarity in order to change the style of life, production techniques as well as consumption patterns to fight climate change. The official position of the Roman Catholic Church came just before the COP21 where the global accord - the Paris Agreement was reached. It also voices the need to protect the poor in line with the work of international fora presented as the SDGs for 2030. The aim of the article is the review of scientific literature concentrating on the most important findings on gender and climate change, review the dialogue presented in the encyclical *Laudato Si'* to find if gender relations and inequality are elaborated on within it.

2. Methods

The method of systematic literature review (SLR) [4] was adopted in order to search for answers about the state of knowledge and scientific findings on the issue of climate change and gender with the use of the 'article focus' analytical framework [1]. Next, the obtained article focus was compared with that content of the Encyclical Letter which refers to issues documented in scientific literature. The following research questions were asked:

RQ1. What does the literature devoted to climate change and gender focus on?

RQ2. What finding emerges from the research?

RQ3. What is the Pope's Encyclical approach towards issues referring to gender and climate change? And what is the macroeconomic picture of the issue?

In order to do a review of the literature on climate change and gender, scientific articles available in the Scopus database were examined. The database contains over 23,000 titles from over 5,000 publishers, of which 20,000 are peer-reviewed scientific, technical, medical and social journals. A four-element research protocol was adopted in the proceedings.

- 1) Definition of the thematic area: the issue of gender and climate change is of interest to researchers from various research fields, the decision was made to limit the search to journals belonging to the field of Social sciences, including Political science, gender study and Economics because climate change has an anthropogenic origin and only socially adaptation can limit it.

- 2) Definition of the period of time in which the articles were published: the selected period is 2015-2020 due to the Encyclical publication date.
- 3) Selection of keywords to find articles using the Scopus search engine: climate change and gender.
- 4) Framework for the analysis of selected documents refers to the formulated research questions and therefore, analysing the content of the articles, the answers to the question: what is studied and what findings come from the research were sought?

Table 1. Article focus.

Code	Category	Documents (number)	Documents (%)
A1	Impact of climate change on women	45	27.61
A2	Gender difference in adaptation to climate change	36	22.09
A3	Gender difference in opinion and on attitude to climate change	18	11.04
A4	Climate justice and discourse	12	7.36
A5	Policy on climate change	12	7.36
A6	Research approach	5	3.07
A7	Women in decision-making	4	2.45
A8	Other	15	9.20
	Not available	16	9.82
	Total	163	100

Legend: A1 - 'Impact of climate change on women' - this category contains articles explaining the consequences of climate change like drought, floods, heat waves, extreme weather phenomena and their impact on women; A2 - 'Gender difference in adaptation to climate change' - contains articles discussing different ways of dealing with climate change and different adaptation strategies of women and men; A3 - 'Gender difference in opinion on and attitude to climate change' - this category includes articles that examine differences in opinions and attitudes towards climate change; A4 - 'Climate justice and discourse' - consists of articles analysing equity, gender, power and rights; A5 - 'Policy on climate change' - includes articles about the gender sensitive policy and aid programmes on climate change; A6 - 'Research approach' - papers on the conceptualisation of scientific research taking into account the gender perspective; A7 - 'Women in decision-making' - articles looking at the importance of women's participation in decision-making at various levels of government and numerical and substantive representation of women; A8 - 'Other' - articles that do not belong to other categories or which were mistakenly included in the dataset because in the abstract they contained the word gender often used for the stratification of the sample, but (in fact) are not relevant to the research topic.

2.1. Data set

Having read the article titles, abstracts and key words we selected final categories. When we were not able to classify the article on the basis of these attributes, one of the authors looked through and/or read the whole article to classify it correctly. The authors worked together to check the classification and code the articles coherently. The aim of the category ‘article focus’ is to identify the specific focus of articles to gain insight into which topics are constantly of interest to scientists. They are presented in Table 1. We excluded from our analysis the last category ‘Not available’ (9.82%) due to the unavailability of the abstract, although the article was in the data set. In addition, we excluded from our analysis the category A8 - ‘Other’ (9.82%) because it does not focus too much on our research or gender was used as a stratification category.

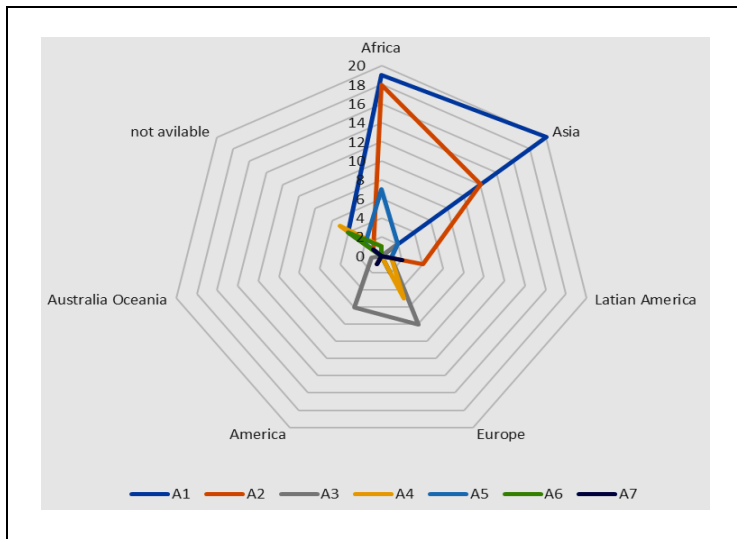


Figure 1. Number of article in article focus by region.

Answering the first question, it should be stated the research concerns mainly the following issues: the impact of climate change (A1 - 27.61%), adaptation strategies (A2 - 22.09%) and gender differences in attitudes and opinions (A3 - 11.04%). Together they accounted for three-fifth of the issues. However, after considering the regions the research findings concern and the article focus category, it turns out that *Impact of climate change on women* and *Gender difference in adaptation to climate change*, in the vast majority, apply to countries in the Global South, i.e. Africa, Asia and Latin America. In turn, research carried out in the countries of the Global North pertains to the issue of differences in attitudes to and social opinion on climate change (Figure 1).

The distribution of research topics highlights existing gaps in living conditions in the Global North and South. Societies of the Global South implement adaptation strategies while the Global North develops adaptation action plans. The Global South struggles with the consequences of climate

change ruining their living conditions while societies of the Global North discuss beliefs and an ethical dimension of environmental justice.

3. Results and discussion

3.1. Impact of climate change on women (A1)

Taking into account the gender factor in social studies on climate change reveals the drama of women and persons under their care (children and dependent persons) in the countries of the Global South. The consequences of climate change for women are augmented by existing gender inequalities, such as diversification of income and resources, labour division, access to education or participation in decision making [3, 5]. In families women are in general responsible for obtaining water and preparing meals, and climate change makes these activities more difficult [6]. In the case of a plague, women are expected to be responsible for taking care of ill members of the family, which makes them more burdened with work. Elderly women are considered to be the most vulnerable to climate variability and change because they are the poorest in the community, followed by elderly men, the disabled, female-headed households, married women, men and, finally, the youth [7]. Moreover, in the areas where people have lost their jobs due to draught, land degradation or sales, men migrate, which at best increases the workload for women. Migrations forced by floods, tornadoes, droughts negatively affect family ties, which are the main support mechanisms for women. Naik's research [8] shows that in the situation of a natural disaster women mobilise social networks and remain where they live, while men more often decide to migrate. Similar conclusions come from the studies of Mehar, Mittal and Prasad [9] - the best known mechanism for dealing with climate problems among men is to find alternative employment in urban areas. In the event of a disaster the consequence of male migration is the loneliness of the family, women do not go to shelters, because they do not have men who accompany them guaranteeing security.

Social norms play a significant role in how women respond to disasters, because their mobility is usually limited. For example, studies show that women are not able to swim during disasters, there are gender differences in swimming abilities, which in the case of tsunamis have resulted in far greater female mortality rates [10]. Dress codes can inhibit their mobility during crises, resulting in disproportionately higher mortality during many disasters. Women's chances of survival in rapidly appearing climatic phenomena are reduced by social norms and family responsibilities. Women and girls can suffer terribly in extreme weather situations and natural disasters, when societies dictate certain behaviours and prohibit others, such as being in public. Cultural norms in Bangladesh prohibit women to stand face to face with strange men in a room, or use the same toilet. Because of this, most women won't even try to find shelter, knowing that there already might be someone there. Even when women survive a natural threat, they suffer violence and sexual harassment.

Lack of employment, income and resources during and after hazards can increase tensions in households and lead to domestic abuse. Competition exists between communities, households and individuals for scarce resources, and women face more external violence while collecting water and fuel. Qualitative and quantitative findings of Ahmad in Bangladesh [11] indicate that women and girls experience increased levels of violence during and after hazards. Women from middle-income groups in both urban and rural areas faced the highest increase in verbal abuse in the home (around 30%); women from extremely poor households faced increased levels of external physical violence. Global evidence shows that sexual and gender-based violence (SGBV) increases during and after disasters. SGBV is an existing, persistent, and prevalent problem across the Pacific. Studies conducted in six Pacific Island countries and territories (PICTs) focused on women's life-time experiences of violence. Of the women surveyed, 60-80% had experienced forms of physical or sexual violence by partners or others. Women of all ages are affected, including young girls, and types of violence include assault, rape and sexual abuse of children [12]. Women and girls also face an even more serious risk with the onslaught of climate-induced disasters: organised trafficking [13].

Discriminatory social norms and practices, such as lack of property ownership, lack of education, early and/or forced marriage, a dowry system and acceptance of domestic violence against women create further barriers to women's mobility and economic empowerment. Although a significant number of women engage in income-generating activities, creating cooperative funds and saving money, they still do not have the power to co-decide. Ferdous's and Mallick's [14] research indicates that government policies aimed at empowering women through free education are only partially effective because the dominant patriarchal practice of early marriage and dowry discourages women from participating in education and training programmes. The study concludes that the prevalent gender discriminatory norms and practices must be addressed to achieve gender transformative change, which is an essential requirement for gender equity and inclusive social development.

About 3 milliard people around the world are dependent on wood, manure or coal stoves. These account for about 20% of black-carbon emissions globally, as well as 2 million deaths annually from smoke inhalation [15, 16]. Research confirms that emissions from solid fuel combustion increase the incidence of diseases such as obstructive pulmonary disease (COPD), lung cancer and eye cancer [17; United Nations, *In Bangladesh, women's right to clean air starts in the kitchen*, 2020, 1-7]. Due to women's responsibility for preparing meals and the presence of young children, they are more exposed to harmful emissions. WHO data show that in low- and middle-income countries, women and young children die twice as often from COPD than men [18, 19]. Relying on inefficient ovens (furnaces) and fuels translates not only into health effects, but also educational and family effects. It is estimated that in the poorest regions women are in 91% responsible for obtaining fuel and water. On average, women with children spend 5 hours looking for fuel. Shortening the time devoted to

collecting wood and cooking allows women to spend more time with their children, disabled and old persons, take on other duties, raise existing economic possibilities, generate income, learn, which can contribute to alleviating poverty [Clean Cooking Alliance, *Gender Aspects Clean Cooking and the SDGs*, 2020].

Taking into account the gender of ecological disaster fatalities shows that women and children are 14 times more likely than men to be victims [Union for Conservation of Nature (IUCN), *Fact sheet on gender and climate change*, 2007]. For example, 90% of cyclone and flood victims in Bangladesh in 1991 were women and children. The Oxfam report [Oxfam, *The tsunami 's impact on women*, 2005] indicated that 77% of all tsunami victims in 2004 in Indonesian villages were women who were at home when the wave struck. The reasons for this state of affairs are complex, such as: information warning about the imminent threat did not reach women staying at home; women are not taught to swim; the impossibility of rapid evacuation due to taking care of children and dependents; reluctance to leave the place of residence for fear of sexual harassment makes women postpone the decision to evacuate.

The findings indicate that the level of inequality is affected by energy poverty and its effects in countries of the Global South impact mainly women [20]. In communities where only women are responsible for nutrition (organisation and preparation), childcare and paid work done at homes, they suffer most from the lack of access to effective (clean) energy sources. The consequences of women's energy poverty are also associated with the impossibility to work at home. In developing countries, women make up the majority of informal workers. Access to clean and reliable energy, especially from renewable energy sources, has a positive impact on the environment, but also on children's education, quality of life, income and health. The impact of climate change not only reflects previously existing gender inequalities, but also reinforces them.

Inequalities in ownership and the right to administer household assets, and increasing family burdens due to men's migration, decreasing access to water and food increase women's vulnerability to climate change. Furthermore, persistent discriminatory norms and imbalance in the socioeconomic status are increasing because women are less able to participate in the formal labour markets, join civil society organisations or collectively mobilise to political changes that would take into account their situation.

3.2. Gender difference in adaptation to climate change (A2)

In the countries of the Global South, women's adaptation capabilities are limited because they often have no control over them understood as rights to land, money or the status of the head of the household who can make decisions. This results in exclusion or limitation of access to aid programmes. Strategies of adaptation to climate change that are developed on the basis of aid programmes and agricultural technologies in the poorest countries can increase gender inequalities, especially if they do not take into account gender differences in

access to them and financial constraints [21-23]. Regardless of the nature of the effects of climate change (drought, lack of water, floods), the success of adaptation strategies is linked to the level of equality. The research points to the necessity of considering local social and economic contexts of the situation of women and men [24-26].

In our approach towards the RQ3 on Pope's Encyclical approach towards issues referring to gender and climate change and the macroeconomic picture of the issue, we screened the text of the Encyclical looking for issues enumerated above. Does the Pope refer to the issues specified in the literature survey and does he notice the problematics of gender in his considerations? There are at least several issues covered in area A1 - *Impact of climate change*, quite much attention is given to area A4 - inequalities in economic and social sense as well as to area A5 - policies necessary to save the world. We did not find much on women, apart from one paragraph on "Mary...the Mother and Queen of all creation" [E. 241, p. 69], who symbolises the mother-care for all creatures. This is one of two places where women are mentioned. In most of the text when referring to causes of the environmental crisis, the necessary changes in policies and ourselves, the Pope addresses both men and women at the same time.

3.3. Climate change impact in the Encyclical (A1)

Health problems are presented in the Encyclical in consequence of pollution and "throwaway culture" [E. 21, p. 7]. Waste is not stored or recycled where it was produced and this clearly shows inequality between the rich and the poor, the North is better positioned than the South. In spite of numerous legal safeguards, the illegal movement of waste, including hazardous waste, remains a problem throughout the world even nowadays [27]. The air quality can be harmful for all living creatures including mankind. Worldwide, low quality outdoor air caused an estimated 4.2 million premature deaths only in 2016, about 90% of which in low- and middle-income countries, according to the WHO, whereas indoor smoke is a considerable health threat to 3 billion people who cook and heat their homes by way of burning biomass, kerosene, coal. Air pollution is linked with higher rates of cancer, heart disease, stroke and respiratory diseases. In the U.S. alone nearly 134 million people - over 40% of the whole population are at risk of diseases and premature death directly caused by air pollution, according to the data delivered by the American Lung Association estimates [C. Nunez, *Air pollution, explained. Pollutants in the air aren't always visible and come from many different sources*, <https://www.nationalgeographic.com/environment/global-warming/pollution/>, accessed on 20.05.2020].

Global warming affects "eco-systemic services such as agriculture, fishing and forestry" [E. 25, p. 8] and especially poor people have no alternatives as for way of living. The data on grain production per hectare also show differences and huge polarisation between the rich North and the poor South. It is 1,400 in Sub-Saharan Africa, 3,750 in Europe and 7,300 in Northern America [World

Bank, *The World Bank Public Data Information*, <https://data.worldbank.org/indicator/AG.PRD.CREL.MT.>, accessed on 22.05.2020]. Fish resources are one of the main human food supply products - they represent about 20% of the animal protein consumed in the world. Both capture and aquaculture provided food supply of about 10 kg per capita in the 1960s and they supplied more than 19 kg in 2013 [21]. In many countries fishing is the base for sustainable income and employment that deteriorate with changing climatic conditions leaving people, often women with no income or employment. Forests constitute one of the most important ecosystems of the world and have many functions like timber provision, provision of other forest products, they have cultural value and offer opportunities for recreation. Forest are also of utmost importance for ecosystems as they regulate water, air and soil, pool biodiversity and serve as carbon sinks. But all over the world we are more and more often witnessing the deforestation of tropical forests, illegal logging and fires in all regions. The Economics of Ecosystems and Biodiversity study (TEEB) indicates that the aggregate loss of biodiversity and services in ecosystems can be translated into between 2 and 5 billion USD per annum [21].

Migrations - people, especially poor people, are forced to leave their homes and look for better life far from home. The Pope states: "...changes in climate, to which animals and plants cannot adapt, lead them to migrate" [E. 25, p. 8]. Migrants' flow is particularly visible when observing mass media reports on Sudan and Africa as a whole and the numbers are astonishing with Turkey alone being a temporary place of living for 4 million migrants from Sudan. The net inflow into Europe and Northern America is also calculated in millions.

Water, like energy, is one of the key inputs in any economy. With vast variations in water availability and quality from country to country, region to region, water is a local important issue. At the same time, because we use international trade to meet the needs of the world's population, water is a global, collective renewable resource. The UN is warning that water use is growing twice as much as the current rate of population growth. Unless this is reversed, 2/3 of the global population will face 'water stress' by 2025. How to share that vital resource fairly and sustainably across the globe is one of the greatest challenges in the 21st century. How much water we use is one of the ways to look at unequal distribution of the asset. In the USA they use 3,800 litres *per capita* per day and in Angola just 100, around 50 in many Sub-Saharan countries and only 34 in the Democratic Republic of Congo [Global Water Use, *Water used this year*, <https://www.worldometers.info/water/>., accessed on 20.05.2020].

Freshwater resources are one of the major environmental, economic and social resources, constituting one of the most important composites of the life quality for mankind. The distribution of that vital resource varies widely among and within countries. And in many cases are limited resources when met with rising demand lead to non-sustainable use. Freshwater abstraction for a number of uses from public supply, irrigation, industry and especially energy sector exerts a major pressure on the level of freshwater resources. The main concern is about over-usage and inefficiencies in some areas [21]. A couple of years ago

we suffered in Poland a near-black-out energy system crisis when most of the cooling systems in electricity and power plants running on coal could not operate during summer due to a low level of water in rivers. The wise pricing policy can make people understand the real value of freshwater but again such policies may lead to under-usage by poorer parts of the society. In places that suffer insufficient rainfalls like Israel and the economic conditions allow for it, many of the water resources are reused - over $\frac{3}{4}$ of all water used in agriculture comes from re-use in that country. Countries which are not so lucky in their development cannot afford to do that and often over-exploit scarce resources, leaving no sufficient water for next generations.

One of the important tools to understand what happens to water in the economy is the water footprint - a notion introduced by Dutch researcher Arjen Hoestra. It shows how much water is used to obtain a given product. It is 10 litres of water for one A4 paper sheet, 200 for one egg and 2,500 litres for a cotton T-shirt, 15,000 litres to produce one PC and 420,000 litres of water to produce one passenger car [National water footprint explorer, <https://waterfootprint.org/en/resources/interactive-tools/national-water-footprint-explorer/>, accessed on 20.05.2020]. And even if the EU uses less water than it used to in the 1990s it still imports a lot of products that have a considerable water footprint, like coffee, 1 kg of which needs between 8 and 15 thousand litres of water to be grown. The fact that countries like Poland, where average waterfall is about 60 cm each year, have more or less the same stock of water *per capita* as Egypt, where the waterfall is only 2 cm [Poland the desert of Europe, <https://www.nik.gov.pl/aktualnosci/polska-pustynia-europy.html>, accessed on 18.05.2020], shows how important it is to manage national natural resources wisely.

“Fresh drinking water is an issue of primary importance”, the Pope says [E. 28, p. 9]. We can clearly see what it means when we compare data on water usage in relation to total water disposable in countries like Russia - 1.4% per year, 4.2% in Denmark and almost 700% in Sudan where the non-renewable sources of water are utilised and depleted by the local population [<https://data.worldbank.org/indicator/AG.PRD.CREL.MT>]. Only 71% of the global population - that is some 5.3 milliard people use a safely managed drinking-water service - that is, one located on premises, available when needed, and free from contamination and 90% of the global population - 6.8 milliard people use at least a basic service. A basic service is an improved drinking-water source within a round trip of 30 minutes to collect water. But as much as 785 million people lack even a basic drinking-water service, including 144 million people who are dependent on surface water [SUSTAINABLE DEVELOPMENT GOAL 6, <https://sustainabledevelopment.un.org/sdg6>, accessed on 18.05.2020].

Globally, at least 2 milliard people use a drinking water source contaminated with faeces, which can transmit diseases such as diarrhoea, cholera, dysentery, typhoid, and polio. Contaminated drinking water is estimated to cause 485,000 diarrhoeal deaths every year. By the year 2025, half of the world's population will be living in ‘water stressed’ areas [Drinking-water,

<https://www.who.int/news-room/fact-sheets/detail/drinking-water>, accessed on 18.05.2020]. “Water poverty especially affects Africa where large sectors of the population have no access to safe drinking water or experience droughts which impede agricultural production.” [E. 28, p. 9] The so called water efficiency (GDP in constant prices divided by the total usage of water) gives us evidence of huge polarisation of water conditions in economies across the world. It is 2.4 in Sudan, 4 in Niger and 520 in Denmark <https://data.worldbank.org/indicator/AG.PRD.CREL.MT.>].

The Pope notices that water and health are closely related [E. 29, p. 9]. “Dysentery and cholera, linked to inadequate hygiene and water supplies, are a significant cause of suffering and of infant mortality.” All over the World, infectious diseases such as waterborne diseases are the principal killer of children under 5 years old and more people die from unsafe water per annum than from all forms of violence, including war [28]. “Scarcity of water...as a major source of conflict.” [E. 31, p. 10] With the MDGs, the global community committed itself to halve the proportion of people without access to safe water and sanitation by the year 2015. Nowadays the aim is still far away from being met.

3.4. Inequality and social dimension of climate change (A4)

“The Earth is essentially a shared inheritance, whose fruits are meant to benefit everyone”, the Pope says [E. 93, p. 27] but the primacy of private property prevails in our world today, making the Planet population strictly divided into small group of very rich, middle class and vast poor groups with millions of very poor people. The Pope addresses the inequality between poor and rich countries: “The foreign debt of poor countries has become a way of controlling them ... yet access to ownership of goods and resources for meeting vital needs is inhibited by a system of commercial relations and ownership which is structurally perverse” [E. 52, p. 15]. Indeed the total external debt of developing countries climbed to \$7.8 billion in 2018, according the World Bank report. On average the external debt burden of low- and middle-income countries was moderate, but still several countries have been on a deteriorating debt to GNI scale since 2009. The share of low- and middle-income countries with debt to Gross National Income ratios that would be below 30% has lowered to 25% from 42% in 2009. Similarly, the number of countries with high debt-to-export ratios has risen [29].

High debt and financial liquidity problems of unprecedented scale as the consequence of COVID-19 economic slow-down will limit the real economy both on supply and demand sides in all countries. But it will be an asymmetric shock in many instances. Emerging economies will be comparatively more exposed to liquidity shortfall and so are low-income households and countries. Social and economic inequalities within countries and also between richer and developing countries will be perpetuated, slowing down the emerging economies, with a sharp rise of global unemployment with almost 200 million

jobs lost, and still increased poverty with some 0.5 billion people falling back into poverty. The MENA region is hit by three parallel shocks of declining revenues from tourism, oil and personal remittances. The further erosion of growth and purchasing power will for sure threaten social cohesion. This will increase migrations, weakening the credibility of many states and their capacities to act accordingly [*Key global trends and dynamics that are reshaping the world - background note*, https://eeas.europa.eu/headquarters/headquarters-homepage_en, accessed on 14.05.2020].

The growth causes huge negative externalities that are worsening the conditions of living. "...cities are huge, inefficient structures, excessively wasteful of energy and water" that deprive us "of physical contact with nature" [E. 44, p. 13]. In the near future over $\frac{3}{4}$ of the whole world population will move to cities which will make this situation even harder. The pandemic situation of COVID-19 has clearly shown that the poor congested in a small area of slums around big cities are particularly vulnerable to the epidemic situation.

The Pope is concerned about the declining quality of life and breakdown of society "The social dimensions of global change include...social exclusion, an inequitable distribution and consumption of energy and other services, social breakdown, increased violence and a rise in new forms of social aggression, drug trafficking, growing drug use by young people, and the loss of identity" [E. 46, p. 13]. Income inequality among individuals is often measured by macroeconomic indicators, like the Gini coefficient which is based on the comparison of cumulative proportions of the population measured against cumulative proportions of income they earn. It ranges between 0 in the case of perfect equality and 1 in the case of perfect inequality. For example it will be 0.62 for South Africa and 0.48 in Costa Rica and some 0.26 in Scandinavian countries and 0.24 in Slovakia, the Czech Republic and Slovenia. Also the poverty rate can illustrate inequality. It is the ratio of the number of people whose income falls below the poverty line - taken as half of the median household income of the total population. Again South Africa will be on one end with 27% to compare with 6% in Scandinavian countries and the Czech Republic [*Income inequality*, <https://data.oecd.org/inequality/income-inequality.htm>, accessed on 14.05.2020]. In relation to women some proxy of social inequality can be given by comparing the OECD data on attitudes toward violence measured as the percentage of women who agree that a husband/partner is justified in beating his wife/partner under certain circumstances. It will be 92% in Guinea, 80 in Afghanistan and Central African Republic to 2% in Belgium, Czech Republic to 0% in Denmark [*Violence against women*, <https://data.oecd.org/inequality/violence-against-women.htm#indicator-chart>, accessed on 20.05.2020]. A good proxy for measuring wealth distribution is the electric energy consumption of various countries. It will range from some 10 TWh per year consumption in Angola, 170 TWh in Poland to 4,200 TWh in the United States, [*Explore energy data by category, indicator, country or region*, [https://www.iea.org/data-and-statistics?country=WORLD&fuel=Energy supply&indicator=Total primary energy supply \(TPES\) by source](https://www.iea.org/data-and-statistics?country=WORLD&fuel=Energy%20supply&indicator=Total%20primary%20energy%20supply%20(TPES)%20by%20source), accessed on

20.05.2020]. The notion of energy poverty, even if not restricted only to the comparisons of countries, shows how people differ depending on the place they live in.

One clear example where the Pope addresses women is this citation “Instead of resolving the problems of the poor and thinking of how the world can be different, some can only propose a reduction in the birth rate. At times, developing countries face forms of international pressure which make economic assistance contingent on certain policies of ‘reproductive health’” [E. 50, p. 14].

3.5. Policies on climate change in the Encyclical (A5)

Climate change as anthropogenic phenomenon - “The climate is a common good, belonging to all and meant for all” [E. 23, p. 7]. And it is men who are responsible for the state in which the Planet is today [E. 101, p. 30]. The Pope calls for urgent action both in policies as well as in ourselves by changing patterns of consumption to more sustainable ones [E. 26, p. 9].

It is very true that the solutions adopted have to be global in nature otherwise they will not be effective. The limitation of actions against climate change (energy mix transformation, green transport, sustainable production and consumption) done in just one group of countries will not be enough as the case of Europe going quickly in the direction of decarbonisation illustrates, while large emitters either abandon the Paris Agreement reached in 2015 or strongly oppose any more ambitious NDCs’ suggestions, as Madrid COP25 have shown. “A global consensus is essential” [E. 164, p. 49] the Pope says.

The Pope is sceptic in relation to global efforts to remedy the situation: “It is remarkable how weak international political responses have been” [E. 54, p. 16]. In the conflict between the need for constant and accelerating economic growth, the environment is constantly losing due to the burden of negative externalities. The only solution is a new paradigm of integral ecology - “We are part of nature, included in it and thus in constant interaction with it” [E. 139, p. 41]. We need to think what kind of world we want to leave to future generations [E. 160, p. 46]. One part of the solution is to exercise citizens’ control over national, regional and municipal political power [E. 179, p. 53], another is changing the model of global development [E. 194, p. 57]. Both are very true. But we should start with ourselves - the ‘economics of enough’ should be the new paradigm of our actions [30] - by limiting greed and minimising unnecessary consumption [E. 202-208, p. 58-60] and the development of environmental education [E. 209-215, p. 60-61].

4. Conclusions

Gender is not only a strong and ubiquitous contextual condition, but it also intersects with other contextual conditions shaping vulnerability to climate change threats. In addition, gender and other contextual conditions such as geographical location, political situation, the development level, urbanisation

also affect socioeconomic factors driving change and determine the differences in women's vulnerability to their effects and adaptability. In regions particularly affected by climate change, there is a decline in women's already limited economic and social rights. These effects seem to be most visible in countries that are relatively less democratic, with a greater dependence on agriculture or the extraction of raw materials and a lower level of economic development. Women are more susceptible to the effects of climate change because of a number of social, economic, cultural and political factors that affect their position in society. Studies on climate change point to the 'feminisation of vulnerability to threats'. In the Encyclical we will find references to three areas (A1, A4 and A5) of the effects of climate change exacerbating inequalities. However, although a lot of attention was devoted to them, pointing to the situation of the poorest, who are already suffering the disproportionate effects of climate change, experiencing violence, lack of resources and exclusion, in no part of it will we find a paragraph indicating the dramatic situation of women and their dependents. The voice of the Catholic Church remains gender neutral. The Pope sees poverty and socio-economic inequalities as an important problem in the fight against climate change, which, without the solidary involvement of the rich North in its solution and self-limitation in our consumption model, will not be solved, but he does not support millions of religious women.

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