

# **Global Warming and Impact to Third World Countries**

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## **Abstract**

Global warming is an average increase in the temperature of the atmosphere near the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns. Global warming can result in many serious alterations to the environment, eventually impacting human health. It can also cause a rise in sea level, leading to the loss of coastal land, a change in precipitation patterns, increased risks of droughts and floods, and threats to biodiversity. Global warming will affect Poor Countries the Most. The World Bank Group says that global warming will lead to a major food-crisis in the future. Sub-Saharan Africa and Southeast Asia are expected to be the worst-hit. If our species wants to avoid widespread suffering and massive battles over resources due to millions or billions of climate refugees, we're going to have to come together to work on solutions that should not base on the capitalist logic of return on investment. We should spend our surplus resources to promote the development of the Third World and fight the threat of the ecological destruction of the planet? We are already too late. All egotism, hegemonies, negligence, inconsistency and deception should be ended without further delay. We should save our beloved planet.

## **Keywords**

Global warming, carbon emission, climate change, third world,

## **Introduction**

In the last few decades, humans have finally started to realize and accept that industrialization and infinite-growth capitalism systems that have given some of us in the developed nations some luxuries, but have definitely increased atmospheric greenhouse gas levels to the point where we're all headed toward a hotter, more unstable home globe (Amory, 1999). The most ironic thing is that, in the next few decades, as our oil-soaked socioeconomic systems continue to untangle, the poorest and least developed populations with the lowest carbon dioxide (CO<sub>2</sub>) emissions will face the direst consequences of human-induced climate change (Houghton, 1997). The World Health Organization (WHO) reports that climate change is responsible for at least 150,000 deaths per year, a number that is expected to double by 2030. The effects of global warming will cause terrible health consequences (Moser, 2006). The World Wild Fund has reported that climate change can drastically alter rainfall pattern, and risk water and food supplies for millions (Kolbert, 2006.). The IPCC report estimates that approximately 75 million to 250 million people in Africa will be without adequate water and will face food shortages by 2020, as crop productivity will decline by about 50 per cent (David, 2009). Rising temperatures could also result in food shortages for 130 million people in Asia.

Global warming is an average increase in the temperature of the atmosphere near the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns. Global warming can occur from a variety of causes, both natural and human induced (Weart, 2003). Commonly, "global warming" often refers to the warming that can occur as a result of increased emissions of greenhouse gases from human activities." Causes of global warming are numerous. Some of which include CO<sub>2</sub> emission, methane emissions from animals, increased use of chemical fertilizers on crop lands, deforestation, wet land reclamations, fossil fuel used, burning plants and industrial pollution. The Intergovernmental Panel on Climate Change (IPCC) states that the increase in global atmospheric concentration of carbon dioxide (CO<sub>2</sub>) is primarily due to fossil fuel use and in a smaller but still significant level, to land-use change (Lovejoy, 2005). The World Bank has estimated that 75–80% of the effects of climate change are being felt by the least developed countries. On the other hand, about 70% of emissions have been produced by the richest 20% of the population. This is an informative review article, where author has tried to describe the effect of global warming giving special emphasis on third world countries and approach to solution in brief.



Figure 1. Global warming and consequence of civilization.

### **Effect of Global Warming**

Global warming can result in many serious alterations to the environment, eventually impacting human health. It can also cause a rise in sea level, leading to the loss of coastal land, a change in precipitation patterns, increased risks of droughts and floods, and threats to biodiversity (Michael, 2008). Besides the visible effects on people's livelihoods, global warming is predicted to have a strong and adverse impact on human health. The populations of countries that have contributed the least to global warming are the most vulnerable to death and diseases brought about by higher temperatures. The coastlines along the Pacific Ocean and the Indian Ocean and in sub-Saharan Africa will be at higher risk of enduring the health effects of climate change. Prolonged periods of abnormally high temperatures can have serious health effects on vulnerable populations, such as the elderly and the sick (William, 2010). This was already seen during the 2003 heat wave in Europe, which claimed approximately 35,000 lives. Asthma and other respiratory diseases will increase due to temperature raise. Hot temperatures increase the ozone concentration, which can damage people's lung tissue and cause complications for asthma patients and those with lung diseases. Increased global warming can also pose a threat to national security, affecting food security, which in turn, can lead to resource conflicts.

According to the WB "turn down the heat" report, the world is likely to get warmer by 4 degrees Celsius or 7.2 degrees Fahrenheit by 2100. The reports showed that by 2030, about 40 percent of land currently used for agriculture, would be unable to yield any crop due to drought. By 2050, the number of under-nourished people in the extreme climate region is expected to rise by 25-90 percent, compared to the current population. The scientists tell us that if the world warms by 2°C, warming which may be reached in 20 to 30 years, that will cause widespread food shortages, unprecedented heat-waves and more intense cyclones (John, 2013). If climate change continues at the projected pace and the world becomes more than 3 degrees Celsius warmer by the end of the century, the spread of plant species in nearly half of the world could be affected, according to new research published in *Global and Planetary Change*.

In a recent chilling assessment, the World Health Organization (WHO) reported that human-induced changes in the Earth's climate now lead to at least 5 million cases of illness and more than 150,000 deaths every year (Paroma, 2005). Temperature fluctuations may sway human health in a surprising number of ways, scientists have learned, from influencing the spread of infectious diseases to boosting the likelihood of illness-inducing heat waves and floods. WHO has shown that the growing health impacts of climate change affect different regions in markedly different ways. Ironically, the places that have contributed the least to warming the Earth are the most vulnerable to the death and disease higher temperatures can bring. Climate change will hit poor countries hardest. Jonathan Patz, a professor at UW-Madison's Gaylord Nelson Institute for Environmental Studies has said that, those least able to cope and least responsible for the greenhouse gases that cause global warming is most affected". Intergovernmental Panel on Climate Change has said that, Drought-prone areas will become drier and wet tropical regions wetter (John, 2013). Low-income countries will remain on the frontline of human-induced climate change over the next century, experiencing gradual sea-level rises, stronger cyclones, warmer days and nights, more unpredictable rains, and larger and longer heat waves, according to the most thorough assessment of the issue yet.

The last major UN assessment in 2007, predicted runaway temperature rises of 6°C or more by the end of the century. That is now thought unlikely by scientists, but average land and sea temperatures are expected to continue rising throughout this century, possibly reaching 4°C above present levels; enough to devastate crops and make life

in many cities unbearably hot (John, 1994). As temperatures climb and oceans warm, tropical and subtropical regions will face sharp changes in annual rainfall, says the Intergovernmental Panel on Climate Change (IPCC) report. East Africa can expect to experience increased short rains, while West Africa should expect heavier monsoons. Burma, Bangladesh and India can expect stronger cyclones; elsewhere in southern Asia, heavier summer rains are anticipated. Indonesia may receive less rainfall between July and October, but the coastal regions around the South China Sea and Gulf of Thailand can expect increased rainfall extremes when cyclones hit land.

It is virtually certain that in the long term, global precipitation will change. High latitude countries, such as in Europe or North America, are expected to receive more rainfall, but many subtropical arid and semi-arid regions will likely experience less precipitation. Over wet tropical regions, extreme precipitation events will very likely be more intense and more frequent in a warmer world. Monsoon onset dates are likely to become earlier or not to change much while monsoon withdrawal rates are very likely to delay. As a result, it is lengthening the season. Scientists have also lowered projections of sea-level rises. A similar climate change could affect Southeast Asia too with countries such as India and Pakistan getting inconsistent amount of rainfall during monsoon. Currently, an early and abnormally high rainfall in parts of India has caused hundreds deaths and left thousands homeless. Last year, Lord Nicholas Stern, former World Bank chief economist and author of the landmark Stern had told The Guardian that poor countries such as India and China need to have greater emission cuts because they have had the highest greenhouse gas emission in past two decades. The developing countries, on the other hand, have long insisted that already industrialized nations, like the U.S. had a greater role to play in raising the levels of greenhouse gases over the years.

Weather disasters are also more likely in a warmer world, the report suggests. Although the global frequency of tropical cyclones is expected to decrease or remain essentially unchanged, they may become more intense, with stronger winds and heavier rainfall. Life in many developing country cities could become practically unbearable, given that urban temperatures are already well above those in surrounding countryside (Christianson, 1999). Much higher temperatures could reduce the length of the growing period in some parts of Africa by up to 20%, the report said. Dr Camilla Toulmin, director of the International Institute for Environment and Development, says: "Climate models are not yet robust enough to predict impacts at local and regional scales, but it is clear that everybody is vulnerable in some way." Oxfam predicted that world hunger would worsen as climate change inevitably hurt crop production and disrupted incomes. They suggested the number of people at risk of hunger might climb by 10% to 20% by 2050, with daily per-capita calorie availability falling across the world. Oxfam has said, "The changing climate is already jeopardizing gains in the fight against hunger, and it looks set to worsen,". "A hot world is a hungry world. If the remainder of the 21<sup>st</sup> century unfolds like its first decade, we will soon experience climate extremes well outside the boundaries of human experience." Tony McMichael, director of the National Centre for Epidemiology and Population Health at the Australian National University has said that, recent extreme climatic events have underscored the risks to human health and survival.

Due to global warming, dissolved oxygen in the water is likely to be less owing to high temperatures and this is bound to also affect organisms like phytoplankton on which the fish can feed upon. Fish mainly need this oxygen for survival and when limited, it means their size is likely to reduce by 20% between 2001 and 2050. This is therefore bound to affect 600 or more fish species of which the fish industry will be disrupted much as people's diets and lively hoods. Scientists believe that greenhouse gases will increase the global average temperature by approximately 6 degrees Fahrenheit by the end of the century. Extreme floods, droughts and heat waves, (such as Europe's 2003 heat wave) are likely to strike with increasing frequency. Other factors such as irrigation and deforestation can also affect local temperatures and humidity (Hare, 2011). According to the UW-Madison and WHO team, other model-based forecasts of health risks from global climate change project few alarming fact.

- a. Climate-related disease risks of the various health outcomes assessed by WHO will more than double by 2030.
- b. Flooding as a result of coastal storm surges will affect the lives of up to 200 million people by the 2080s.
- c. Heat related deaths in California could more than double by 2100.
- d. Hazardous ozone pollution days in the Eastern US could increase 60% by 2050.



Figure 2. Few Pictures of Causes of Global Warming (fossil fuel or coal ore & oil rig, electricity production, fossil fuel burning, modern civilization, industrialization)

### **Effect to Third World Countries**

Global warming will affect Poor Countries the Most. The World Bank Group says that global warming will lead to a major food-crisis in the future. Sub-Saharan Africa and Southeast Asia are expected to be the worst-hit. Global warming is expected to cause major changes in climate- from causing drought in some regions to causing severe storms in others. Places such as Jakarta and Ho Chi Minh City are considered to be "hot-spots" for the climate change as these places will be badly affected by sea-level rise and severe tropical storms. Low-lying countries such as Kiribati are already sinking due to climate change and rising population. The German watch Climate Risk Index, which ranks the countries according to their extreme weather risks, shows that all countries in the top ten of this index are developing countries, led by Bangladesh, Myanmar and Honduras. 95% of fatalities from natural disasters in the last 25 years occurred in developing countries. Developing countries do not have a history of large emissions of green house gases and thus have not contributed significantly to the causes of climate change (Bruce, 2002). So it is in the responsibility of the industrialized countries, which have caused the problem, to support the people in the developing countries to mitigate climate risks and help them to adapt to the changes.

Poor countries in Latin America, South America, sub-Saharan Africa, South Asia and Southeast Asia including Bangladesh are demanding rich countries that have benefitted from 150 years of unabated carbon dioxide emissions pay their dues. They claim that if the developed nations want to restrict the emissions of the developing nations, they need to pay for the technological leap to bypass the early, dirty stages of modernization and energy production as well as provide funding to deal with the current and future effects of climate change. In 2010, the United Nations Framework Convention on Climate Change (UNFCCC) established something called the green climate fund in order to facilitate the transfer of money from rich nations to poor nations so they could mitigate and adapt to the

consequences of climate change. Currently, the richest nations have agreed to contribute up to US\$ 100 billion a year by 2020. This is not an official agreement. However, it's still unclear exactly how this fund will be collected and distributed. So far, only a fraction of the money has been pledged and it's mainly gone to cover startup costs. It's a whole lot of money to organize and facilitate during high-risk times and it's also necessary.

A 2013 report on the vulnerability of cities around the world to climate change showed that Dhaka, the capital of Bangladesh, is facing the most immediate and extreme effects from our fossil-fuel guzzling. Dhaka has one of the lowest CO<sub>2</sub> emissions of any major city in the world at 0.6 tons per person per year. Almost half of the 13 million people of Dhaka live in low-lying, crowded slums and rarely have access to clean water, let alone electricity or personal vehicles. If we compare their annual emissions with the US (average 18 tons per person) or Canadian (average 16 tons per person), we can start to see exactly how unfair the situation is. If we go down the list of the cities, most threatened by climate change we'll find similar cases. So it is clear that, low GDPs and CO<sub>2</sub> emissions, high risks for environmental catastrophes. This is just one more area of life where the poor are being screwed by the rich. The United States is responsible for 29% of all human emissions of carbon dioxide since the mid-19<sup>th</sup> century. As of today, they have emitted around, 328,000,000,000 metric tons of CO<sub>2</sub>. True equitation is that, about 70% of emissions have been produced by the richest 20% of the population. The World Bank has estimated that 75–80% of the effects of climate change are being felt by the least developed countries. Ugandan President Yoweri Museveni has labelled climate change as "an act of aggression by the rich against the poor".

At the UN Earth Summit in Rio in 1992, Fidel Castro gave an impassioned speech about the ecological debts owed to the global poor. His words remain impressively insightful. He told that, an important biological species is in danger of disappearing due to the fast and progressive destruction of its natural living conditions. We have now become aware of this problem when it is almost too late to stop it. It is necessary to point out that consumer societies are fundamentally responsible for the brutal destruction of the environment (Amory, 1999). They arose from the old colonial powers and from imperialist policies which in turn engendered the backwardness and poverty which today afflicts the vast majority of mankind. With only 20% of the world's population, these societies consume two-thirds of the metals and three-fourths of the energy produced in the world. They have poisoned the seas and rivers, polluted the air, weakened and punctured the ozone layer, saturated the atmosphere with gases which are changing weather conditions with a catastrophic effect we are already beginning to experience. The forests are disappearing. The deserts are expanding. Every year thousands of millions of tons of fertile soil end up in the sea (Schroeder, 2009). Numerous species are becoming extinct (Schmidt, 2008). Population pressures and poverty trigger frenzied efforts to survive even when it is at the expense of the environment. We are already seeing the effects of climate change in Bangladesh and across south Asia. It's not news to us. Most developing countries are facing climate change now (Rowland, 2010). They do not need the IPCC to tell them that the weather is changing", said Saleemul Huq, director of the International Centre for Climate Change and Development, based in Dhaka.

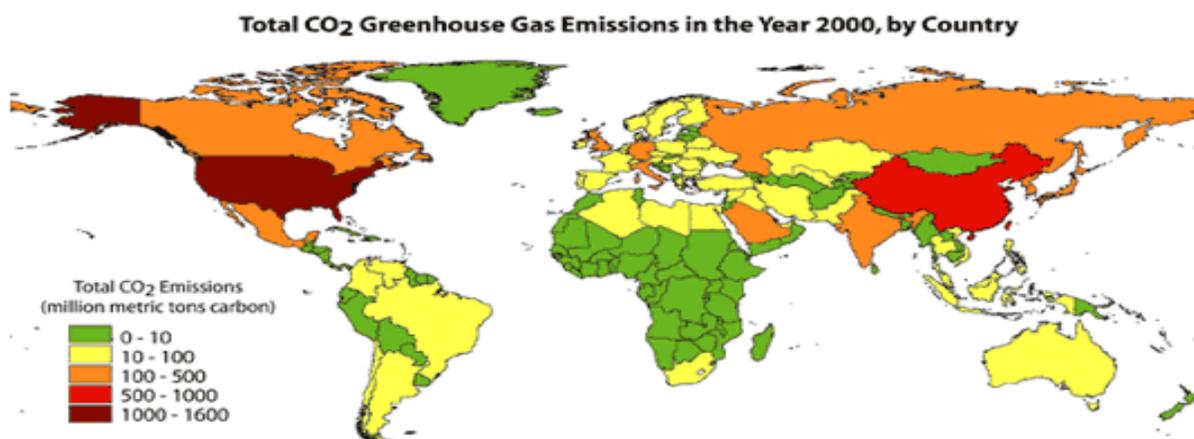


Figure 3. The map shows total carbon dioxide emissions from fossil-fuel burning, cement production, and gas flaring for the world's countries in 2000. The map was created by a team of climate and health scientists led by Jonathan Patz, associate professor of environmental studies and population health sciences at UW-Madison.

According to the Nature report, regions at highest risk for enduring the health effects of climate change include coastlines along the Pacific and Indian oceans and sub-Saharan Africa. Large sprawling cities, with their urban "heat island" effect, are also prone to temperature-related health problems. Africa has some of the lowest per-capita emissions of greenhouse gases. Yet, regions of the continent are gravely at risk for warming-related disease. Co-author Diarmid Campbell-Lendrum of WHO has said that, many of the most important diseases in poor countries, from malaria to diarrhea and malnutrition, are highly sensitive to climate.

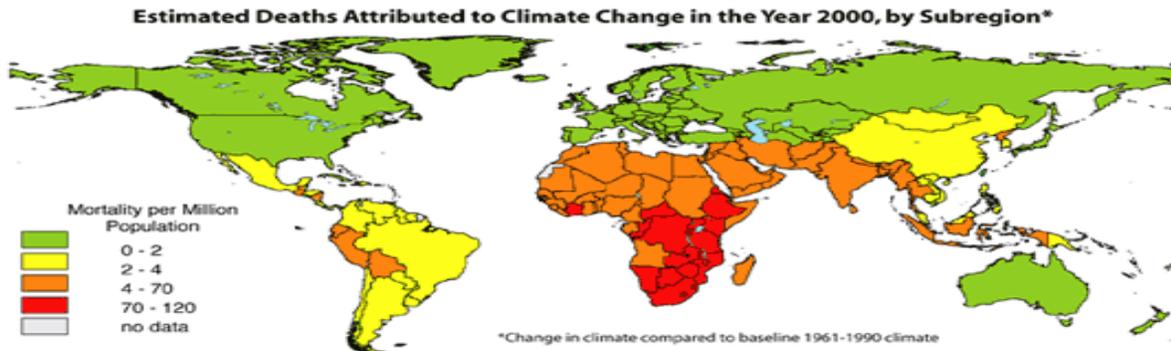


Figure 4. The map shows the estimated numbers of deaths per million people that could be attributed to global climate change in the year 2000. Data has drawn from the World Health Organization (WHO).

#### **Approach to Solution of Global Warming**

Climate change is real, it is happening, and it is affecting the poorest, most vulnerable humans most of all. If our species wants to avoid widespread suffering and massive battles over resources due to millions or billions of climate refugees, we're going to have to come together to work on solutions that should not be based on the capitalist logic of return on investment (Knauer, 2007). The return on this investment is survival. It is really surprising that, the United States, the world's top emitter of greenhouse gases, has yet to ratify the Kyoto treaty. It is a moral obligation of countries with high per-capita emissions, such as the U.S. and European nations, to adopt a leadership role in reducing the health threats of global warming. The large, fast-growing economies, such as China and India, need to develop sustainable energy policies. Our combined awareness can ease/improve the situation and save our beloved world.

- a. Insurance approaches have been mentioned in the United Nations Framework Convention on Climate Change (UNFCCC) climate negotiations since the Convention was framed in the early 1990s. More recently, the issue has received renewed attention in the Kyoto Protocol, the Bali Action Plan and in the Cancun agreement on a "Loss and Damage" program. In response to the growing realization that insurance-related solutions can support the adaptation to climate change advocated in the Framework Convention the Munich Climate Insurance Initiative (MCII) was launched in 2005. The Green Fund is supposed to reach an annual funding of USD 100 bn by 2020. The MCII proposal has the potential to link insurance with incentives to prevent losses. It would deliver climate insurance solutions to benefit those most vulnerable to the adverse impacts of climate change and would support them in their efforts to adapt to the changes.
- b. Besides adaptation to the changes also ambitious green house gas emission reductions are necessary to avoid unmanageable conditions in the second half of this century. Renewable energies are the key to reductions of Carbon dioxide. Many developing countries are rich in natural resources to produce renewable energies, especially solar radiation. In cooperation with industrialized countries these resources can be used providing sustainable clean energy for the developing countries themselves but also for export to industrialized countries and thus creating sustainable business opportunities (Houghton, 1997.). World leaders need to invest large investments into renewable energies around the world.
- c. In order to effectively address global warming, we should significantly reduce the amount of heat-trapping emissions we are putting into the atmosphere (Pugliese, 2009).
- d. Burning fossil fuels such as natural gas, coal, oil and gasoline raises the level of carbon dioxide in the atmosphere and carbon dioxide is a major contributor to the greenhouse effect and global warming (Mac, 2008). We should help to reduce the demand for fossil fuels, which in turn reduces global warming, by using energy more wisely.
- e. The good news is that we have the technology and practical solutions at hand to accomplish it. As individuals, we can help by taking action to reduce our personal carbon emissions. But to fully address the threat of global

warming, we must demand action from our elected leaders to support and implement a comprehensive set of climate solutions.

- f. We should expand the use of renewable energy and transform our energy system to one that is cleaner and less dependent on coal and other fossil fuels (Speth, 2005).
- g. We should increase vehicle fuel efficiency and support other solutions that reduce oil use (Brower, 1999).
- h. We should place limits on the amount of carbon that polluters are allowed to emit.
- i. We should build a clean energy economy by investing in efficient energy technologies, industries, and approaches (Alley, 2000).
- j. We should reduce tropical deforestation and its associated global warming emissions (Schneider, 2002).
- k. The Clean Air Act requires the Environmental Protection Agency (EPA) to take steps to reduce air pollution that harms the public's health. This includes global warming emissions, which the EPA has found to jeopardize public health.
- l. Today power plants are allowed to dump unlimited amounts of carbon pollution into the atmosphere. There are no rules in effect that limit their emissions of carbon dioxide, the primary driver of global warming (Spencer, 2007). We should implement some viable rules to solve this problem. We must raise fund and donate poor and third world countries, who effect climate least and affected severely.



Figure 5. Few Pictures of Effects of Global Warring (Water crisis, ice melting, cyclone, temperature rise, hanger, diseases)

## **Conclusion**

Depending on future greenhouse gas emissions, sea levels will raise an average of 16-24inch or 40-62cm by 2100. Nevertheless, there will be significant geographical variations. Many millions of people living in the developing world's great cities are threatened (Kunstler, 2005). Global warming increases of earth temperatures which affect all living being including the flora and fauna. The consumptive lifestyles of rich are having lethal impacts on other people around the world, especially the poor (Lynas, 2004). There are options now for leading more energy-efficient lives that should enable people to make better personal choices. Developing countries are Most Affected by Climate Change and Need the Support of the industrialized countries to Adapt to the Unavoidable Risks. It is really surprising that, the United States, the world's top emitter of greenhouse gases, has yet to ratify the Kyoto treaty. It is moral obligation of countries with high per-capita emissions, such as the U.S. and European nations, to adopt a leadership role in reducing the health threats of global warming. The large, fast-growing economies, such as China and India, need to develop sustainable energy policies.

It is not possible to blame the Third World countries for this. Yesterday, they were colonies; today, they are nations exploited and pillaged by an unjust international economic order. The solution cannot be to prevent the development of those who need it most. The reality is that anything that nowadays contributes to underdevelopment and poverty constitutes a flagrant violation of ecology. Tens of millions of men, women, and children die every year in the Third World as a result of this, more than in each of the two world wars. Unequal terms of trade, protectionism, and the foreign debt assault the ecology and promote the destruction of the environment. If we want to save mankind from this self-destruction, we have to better distribute the wealth and technologies available in the world (Pollack, 2005). Less luxury and less waste by a few countries is needed so there is less poverty and less hunger on a large part of the Earth. We do not need any more transferring to the Third World of lifestyles and consumption habits that ruin the environment. Let us implement an honest and rational international economic order. Let us use all the science necessary for pollution-free, sustained development. Let hunger disappear, and not mankind. Now there are no more excuses for cold wars, arms races and military spending. We should spend our surplus resources to promote the development of the Third World and fight the threat of the ecological destruction of the planet? We are already too late. All egotism, hegemonies, negligence, inconsistency and deception should be ended without further delay. We should save our beloved planet.

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