

# Climate Change in the Municipality of Morrinhos, Goiás, Brazil: A Survey through Oral Reports from the Elderly Population on Climate and Environmental Changes, Over the Years



## INTRODUCTION

Climate change is a matter of global interest currently being discussed by political and environmental leaders, with the aim of proposing a balance between environment and sustainable development. In Brazil, agriculture is one of the most important economic activities in the country. On the other hand, according to the Brazilian Institute of Geography and Statistics (IBGE), the federal agency responsible for geographic, economic and populational statistics, the agricultural activity is the most responsible for deforestation. There are difficulties in achieving a balance between agricultural activities and the environment. The preserved environment is very important to combat climate change. For Environmental Law, the research is relevant, as it shows how the population is affected by climate change and allows directing this branch of Law towards an increasingly effective protection of the environment, since it is a diffuse right stipulated by the Brazilian Constitution. The work aims to get to know the perception about climate changes in the Municipality of Morrinhos, Goiás, Brazil, and, for that, it conducts research with the elderly population through oral reports.

## MATERIALS AND METHODS

1. The research is based on empirical research, using data from IBGE to identify the number of elderly people in the city of Morrinhos.
2. In order to obtain a result of the research, a semi-structured questionnaire was prepared to collect primary data from the elderly population in the municipality of Morrinhos, by means of a random sample, about climate changes and their causes.
3. The investigation will be carried out via by obtaining oral reports on changes in the climate and the environment.

## REFERENCES

BRASIL. **Constituição da República Federativa do Brasil de 1988**. Disponível em: <[http://www.planalto.gov.br/ccivil\\_03/constituicao/constituicao.htm](http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm)>. Acesso em: 06 Jul. 2020.

IBGE, Instituto Brasileiro de Geografia e Estatística. **Monitoramento Da Cobertura e Uso Da Terra Do Brasil 2016 – 2018**. Disponível em: <[https://www.ibge.gov.br/apps/monitoramento\\_cobertura\\_uso\\_terra/v1/](https://www.ibge.gov.br/apps/monitoramento_cobertura_uso_terra/v1/)>. Acesso em: 12 Ago. 2020.

IBGE, Instituto Brasileiro de Geografia e Estatística. **Estudo inédito do IBGE mostra as mudanças na cobertura e uso da terra e aponta redução nas pastagens naturais e florestas**. Disponível em: <<https://censo2010.ibge.gov.br/noticias-censo.html?view=noticia&id=1&idnoticia=2996&busca=1&t=estudo-inedito-ibge-mostra-mudancas-cobertura-uso-terra-aponta-reducao-pastagens-naturais>>. Acesso em: 12 Ago. 2020.

ONU. Nações Unidas Brasil. **Desmatamento é 2º maior causa da mudanças climáticas, revela FAO**. Disponível em: <<https://nacoesunidas.org/desmatamento-e-2a-maior-causa-das-mudancas-climaticas-revela-fao/>>. Acesso em: 10 Ago. 2020.

ONU. Nações Unidas Brasil. **Como Alimentar 10 bilhões de pessoas até 2050**. Disponível em: <<https://nacoesunidas.org/como-alimentar-10-bilhoes-de-pessoas-ate-2050/>>. Acesso em: 10 Ago. 2020.

### Authors:

Thays Dias Silva<sup>1</sup>

Bárbara Luiza Rodrigues<sup>2</sup>

Igor Gomes de Araújo<sup>3</sup>

Letícia Versiane Arantes Dantas<sup>4</sup>

Luciana Ramos Jordão<sup>5</sup>

Niury Ohan Pereira Magno<sup>6</sup>

Rebeca Barbosa Moura<sup>7</sup>

Victória Cardoso Carrijo<sup>8</sup>

## PRELIMINARY RESULTS

- In Brazil, agriculture is one of the most important economic activities in the country. On the other hand, according to the report published by the Brazilian Institute of Geography and Statistics (IBGE, 2020), between 2016 and 2018, around 1% of the Brazilian territory had some change in coverage and land use, in general it was found that the replacement of areas of natural vegetation with man-made areas continues, as well as the advancement of agricultural areas over pasture areas. It is difficult to achieve balance between agriculture and environment, especially considering how important the activities are for economy. But the preserved environment is very important to keep land fertility and people healthy.
- The preserved environment is very important to combat climate change. According to United Nations Brazil (UN, 2018), forests are great allies of human beings in combating climate change, since they absorb about 2 billion tons of CO<sub>2</sub> per year, but when the planet's vegetation cover is deforested, modify in global warming engines, around 20% of greenhouse gas emissions are caused by deforestation.
- According to the United Nations Brazil (UN, 2020), reducing CO<sub>2</sub> emissions can affect the nutritional value of food in a very positive way, benefiting human health, since 76% of the world population obtain most of their nutrients from plants, thus also being able to decrease the possibility of extreme climatic events and, consequently, to safeguard the yield of the harvests. That is why CO<sub>2</sub> reduction is very important, since it benefits the nutritional value of food, crops, human health and also combats climate change.
- By reducing carbon dioxide emissions, nutritional value of food can benefit human health and reduce costs with cancer treatments, for example.
- On the interviews, we realized that most people are concerned to pesticides effects on health and the great number of cancer cases. Most answers considered changes on climate. Some noticed it is now difficult to find plants that used to be common in Cerrado, like pequi, guapeva and other native fruits.
- Due to the pandemic, we had to stop making the interviews since elderly population is especially vulnerable. But the first results show that older population remembers times when climate change was not an issue. And many understand that preserving the environment is essential to combat climate change.

## QUESTIONARY

- How old are you?
- How long do you live in Morrinhos?
- Do you believe in climate change? Why?
- Did you observe any changes in temperature over the years? Explain.
- Did you observe any changes on rainfall frequency over the years? Explain.
- Can you still easily find the same native Cerrado fruits in this region as it was when you were a child?
- Do you think your observations somehow interfere on food producing? Why?
- Do you think more people get sick with cancer and respiratory diseases nowadays? How was the frequency of these diseases when you were 12-15?
- If you believe climate change is a real issue, which would be its main cause? What humanity could do to prevent or stop it?

## CONCLUSION

- Through research, it was possible to realize that preserving the environment is essential to combat climate change. Thus, protecting the environment is also guaranteeing the future of agriculture, since when changes in climate occur, harvests are harmed.
- CO<sub>2</sub> reduction brings great benefits to the nutritional value of food, thus benefiting people's health and quality of life.
- So, carbon dioxide reduction is the only way to keep human life in the planet.
- Therefore, the right of “everyone to an ecologically balanced environment”, provided for in the Constitution of Brazil, is a duty to preserve and defend the environment, both of society and the state, that only with each one fulfilling their role is that it will be possible to see this fundamental right ensured.