



CLIMATE CHANGE PERCEPTION AND AWARENESS LEVEL: AN ONLINE SURVEY OF THE CITIZENS OF THE REPUBLIC OF NORTH MACEDONIA

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October, 2019

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List of abbreviations

CC - Climate Change

EC - European Commission

EU - European Union

GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit

ICT - Information and Communication Technologies

MOEPP - Ministry of Environment and Physical Planning

NGO - Nongovernmental Organization

SKC - Citizens of Skopje

TV - Television

UNDP - United Nation Development Programme

UNEP - United Nations Environment Programme

UNFCCC- United Nations Framework Convention on Climate Change

USAID - United States Agency for International Development

EBRD – European Bank for Reconstruction and Development

WB - World Bank

SUMMARY

The United Nation Development Programme and the Ministry for Environment and Physical Planning of the Republic of North Macedonia, in the frame of the Project Macedonia's Third Biennial Updated Report on Climate Change, conducted an **online survey** in October 2019, aiming to congregate newest data of the public perception and awareness level regarding climate change. The results of this survey are, in a way, an update of the data gathered within the surveys conducted in 2014 and 2016, which showed basic information regarding the motivation and the challenges in citizens' behavior regarding environmental and climate protection. This data was used in the preparation of the "[Third National Communication on Climate Change](#)" and the "[Second Biennial Update Report on Climate Change](#)".

The present survey also provided **new data on the awareness level of the public** regarding this problem, included the **gender aspect** of the climate change, provided info about how clear is the picture for the citizens regarding the **similarities and differences between the air pollution and the climate change**, regarding how the public identifies the **capacities and the activists** of #ClimateAction, but also about the **main sources of information** regarding climate change, the visibility of the issue in the media and the **visibility of different campaigns and projects** for climate change.

The questionnaire was distributed on-line, via professional lists of email addresses, and also was promoted via social media, such as Facebook and Twitter in order to tackle the general public. In period of two weeks, **1158 filled questionnaires** were gathered, which compared to 583 in the survey from 2016, shows that the interest for the issue is doubled. 71% of the respondents live in the **ten municipalities of the City of Skopje**, and the rest live in **52 other municipalities** represented in the sample. The respondents belong to different age groups, of which mostly represented are the people aged 25-39 (37.56%), but those over 65 years were also represented (2.07%). Among the respondents, there is 18.48% more women, but it is interesting that the analysis of the interactions of FB page on which the questionnaire was also published, show that 30.4% more men answered than women. The respondents are mainly highly educated and 75% of them have bachelor or master degree.

The survey showed that the respondents detected **corruption, crime** and the **lack of clean water** as biggest social problems, while **climate change is seen as third most serious threat** to the society. However, compared to previous findings, the respondents consider that they have higher knowledge regarding climate change. **51.9% from the respondents think that they are well informed** for the different influences and consequences of climate change, while 40.3% of them stated that they are informed in certain extent. **Extreme temperatures** and the irregularities in changing of the seasons and precipitation are recognized **as most visible consequences** of climate change. In that regard, the respondents stated that the issue of climate change is more present in the media compared to previous surveys. They state that this is a result of the raise of the public awareness and interest in the issue, rather than the more frequent extreme weather events. Also, the survey shows that **68% of the citizens perceive the connection and the differences between climate change and air pollution**, but 12,1% think it is the same.

However, the respondents are not content with the manner in which the public administration, companies and the industry, or even the citizens themselves, contribute to the fight against

climate change. Therefore, **74% of the respondents think that the companies and the industry do not do enough** against the climate change, 72% think that the local authorities are not doing enough and 69% think that the central authority is not doing enough. Contrary to this, **66% of the respondents think that the citizens themselves are not doing enough** to protect the environment. This survey shows that citizens' awareness regarding individual contribution to climate change mitigation has increased. Beside this, it is encouraging that the respondents show motivation to start undertaking activities towards protection of the environment and almost all of them are ready to use renewable energy. **The main motivation for the protection of the environment is the desire to live in healthy and clean environment.** Most of the respondents think that an individual change of behavior can greatly influence climate change. In general, the results show that population feels more optimistic about climate change mitigation.

Citizens still do not have enough knowledge about the adaptation of climate change. Additional efforts and attention are needed in order the best practices of adaptation to be promoted and the development of concrete measures for adaptation to be supported. **The internet and social media remain the best way for sharing data**, but this survey showed that the number of those who read reports and studies (12.7%) and read specialized magazines (7.9%) has increased. The respondents are acquainted with the climate change campaigns organized by the non-governmental organizations for protection of the environment and by the international organizations, especially UNDP and USAID, but they are also acquainted with the campaigns of MOEPP.

Last, but not the least, the doubled number of respondents who answered the questions compared to the survey on 2016, is a sign that the climate change issue is attractive enough and motivates participation. The decision-makers should use this positive trend which was identified in 2016 and continue with participatory activities regarding climate change through data sharing and raising awareness. A novelty in this survey is that the **results will be available** via the **interactive on-line platform** (<http://anketa2019.klimatskipromeni.mk/index-en.html>) which provides combination of different parameters that can give a clearer perspective of the needs and manners of perception, but also of the behavior of different target groups regarding undertaking #ClimateAction, as well as **getting useful information about what can and should be taken into consideration during the process of policies and ambitious climate actions creation.**

1. INTRODUCTION

The United Nations Development Programme (UNDP) and the Ministry for Environment and Psychical Planning (MOEPP) of the Republic of North Macedonia within the preparation of the Third Biennial Report on Climate Change conducted an online survey regarding climate change perception and awareness level. Transparent processes and analysis prepared within the project and comprehensive presentation of the results is the main guideline for more ambitious #ClimateAction on all levels, from strategic planning to citizen's activism.

Within the [First Biennial Updated Report on Climate Change](#), UNDP and MOEPP in November 2014, conducted an online survey for the climate change awareness of the citizens and the challenges of our country, for the first time. The survey was harmonized with similar surveys of public opinion in EU, such as the Eurobarometer – the global climate change survey conducted in 2008. It gathered information of the climate change awareness and perception of the general public and the employees in the public administration. The aim of the survey was to identify the main motivations and challenges for undertaking activities regarding the protection of the environment and climate change mitigation, and to serve as an example the future project and campaigns for adaptation and climate change mitigation.

In meantime, in April 2016, the Republic of North Macedonia signed the Paris Agreement, the first universal, legally binding document under the UN Framework Convention on Climate Change ([UNFCCC](#)), and therefore confirmed the state commitments to contribute to global efforts for climate change mitigation with undertaking concrete measures.

Aiming to provide continuity in the process and to ascertain whether the perception on climate change in the country has changed, especially after the signing the Paris Agreement, in December 2016, new, updated online survey was conducted. The new social trend which is connected to the Information and Communication Technology, allowed this survey to be conducted online (on the internet) and allowed gathering significant number of results for short period of time (around 2 weeks). The questionnaire was distributed using professional lists with e-mail addresses and professional networks, also via social media, Facebook groups, Facebook and Twitter advertisement, as well as advertisement on popular internet locations.

In order to follow whether there are changes in the climate change perceptions of the public and what kind of changes are they, we conducted third survey which gave us guidelines for righteous creation of public policies, but also for directing the communication towards motivation and encouraging strong, ambitious and non-repeatable climate actions. Furthermore, the results of the survey identify main motivation and obstacles for undertaking activities for protection of the environment and climate change mitigation. The results, also, show which is the most popular media for gathering information on climate change, which campaigns and institutions working on this issue are the most visible for the public and which institutions are considered to be the most active in conducting projects regarding climate change. With comparison of the results of this survey with the results of the previous analysis of the public opinion, we were able to conclude that the climate change communication and engaging activities were very effective in the last three years. Also, this will help in better shaping and sharing of the future activities. Due to this fact, the result of this survey will be used on behalf of the relevant national institutions in order to define the future steps for improving the field activities, the activities, the surveys and the agenda for raising of the public awareness in the country for issues related to climate change, with ultimate goal to improve the climate change management in our country.

2.METHODOLOGY

The on-line questionnaire was prepared in Macedonian, but the Albanian and the English version are also available in the interactive platform together with the results on <http://anketa2019.klimatskipromeni.mk/>. The questionnaire contains 24 questions, divided in four parts which follow the main researched issues: *General issues*; *Climate change perception*; *Behavior* and *Sources of information*. Most of the questions in the last three groups can be answered with multiple answers.

The part with *General issues* consists of socio-demographic information for the respondents, such as age, gender, municipality where they live, plan region in which that municipality belongs, education and employment. In this part, there are two additional questions for the respondents who are employed in the public institutions. In the part regarding *Climate change perception*, there is a question for ranking of the potential threats for the society based on their severity. Furthermore, in the same part, the perception of the environment changes in the last 10 years is researched, as well as the knowledge of the respondents regarding activities related to climate changes. Beside this, there is a question which gives insight on how the public perceives the connection and differences of climate change and air pollution, because in writing these two are very often wrongfully understood. The part dedicated on the *Behavior* analyzes whether the respondents take into consideration the environment and the climate change during everyday activities, which are reasons for such considerations, as well as which are the obstacles for undertaking activities for protection of the environment and climate change mitigation. The part that refers to *Sources of information* contains answers regarding the respondents' climate change awareness level, the sources from which they get information and their observations regarding the possible increase of the issue in the media. Also, in this part the respondents' knowledge of the campaigns for raising public awareness is analyzed. Additionally, which institutions are recognized by the respondents as connected to the projects for climate change is analyzed as a question. All the questions have multiple choice answers and additional comments, except the questions of the first part of the survey.

The results of the questionnaire are published on an interactive on-line platform. The platform enables public availability of the results, but also with different choice of parameters, the use can get data on different scenarios. Image 1 shows the interface with automatic analysis of results.

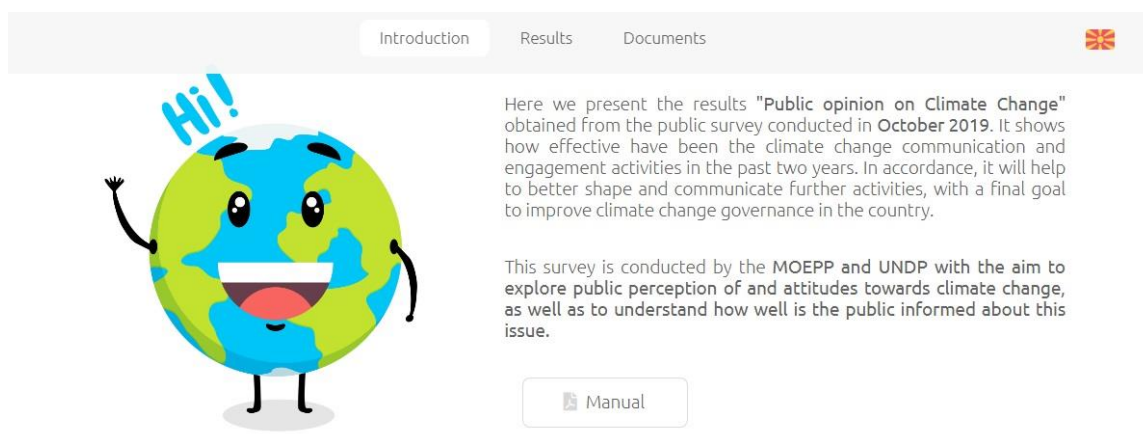



Image 1 Internet online platforma

Selection of parameters



Age

25-39

Sex

☒ Female
☐ Male

Municipality

Skopje

Planning Region:

All

Education

University

Are you employed?


Yes

In which sector do you work?

Private sector

In which public office do you work / you are engaged?

All



Reset

Image 2 Automatic calculation of results

The questionnaire was distributed via the lists with e-mail addresses to more than 1000 receivers from public institutions, private companies, academic institutions, NGOs and media. The questionnaire was also distributed via 88 Macedonian on-line news portals, of which 49 in Macedonian and 39 in Albanian.

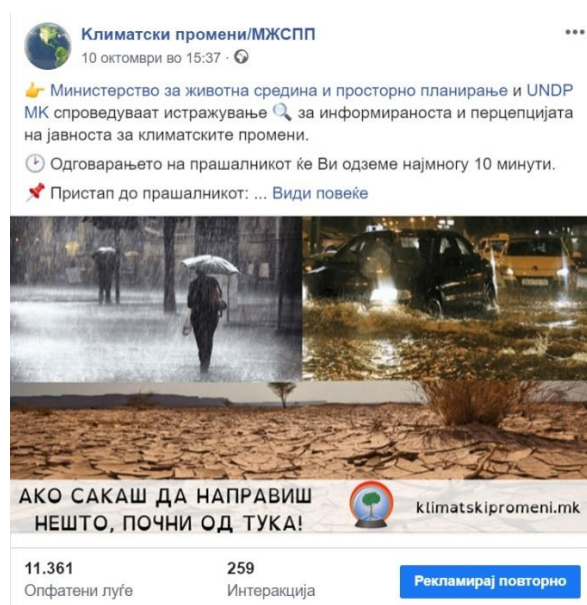


Image 3 Facebook advertisement

Beside this, the questionnaire was published in the MOEPP's web-site: www.moepp.gov.mk as well as on the national communication platform for climate change www.klimatskipromeni.mk. The general public was invited to participate via the Facebook advertisement (Image 3).



Image 4 Twitter post

The target public was chosen according to the location – North Macedonia. The survey based on the advertisement campaign on Facebook lasted for 14 days. The questionnaire was promoted via different Twitter profiles (Image 4).

3. RESULT ANALYSIS

3.1. General results

This analysis is made on 1158 online questionnaires gathered during a period of two weeks (from 2-18 October, 2019).

Figure 1 shows the age of the respondents. All the age groups are well represented in the sample. There are least answers from the age group – older than 65 years (24 respondents). Most represented are the respondents from the age group – between 25 to 39 years (37.56%), and after them are the ones that belong to the age group – from 40 to 45 years (29.53%).

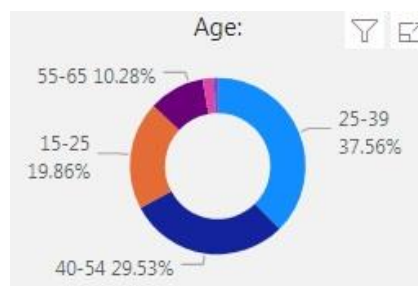


Figure 1 Age representation

On Figure 2 can be seen that the female respondents (59.24%) are more numerous than the male respondents (40.76%) for 18,48%.

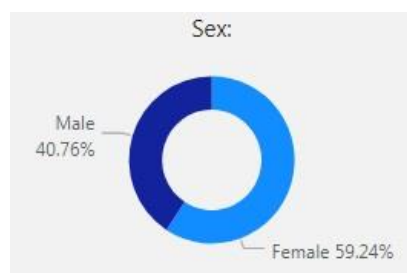


Figure 2 Sex

It is interesting that while the female population was more ready to answer the questionnaire received via personal communication, the men were more interested to answer the questionnaire via the Facebook advertisement. On Facebook 30.4% men were more interested to answer the questionnaire than the women (Figure 3).

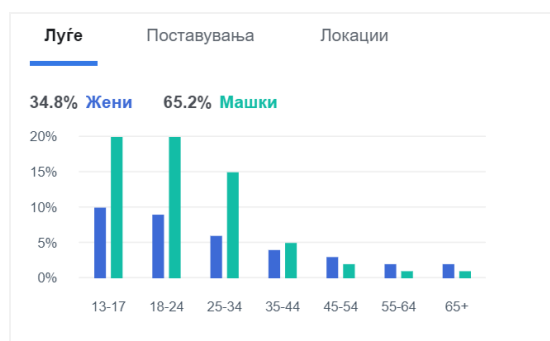


Figure 3 Facebook advertisement statistics

Most of the respondents (46.8%) have finished faculty, and together with the ones with master and doctoral degrees, represent 79.5% of our sample (Figure 4). It is worth noting that with this survey, also the population with lower level of education showed increased interest for this issue increased. In the survey from 2016, only 9% from the respondents had high school education, and in this last survey their number increased doubly (18,5%).

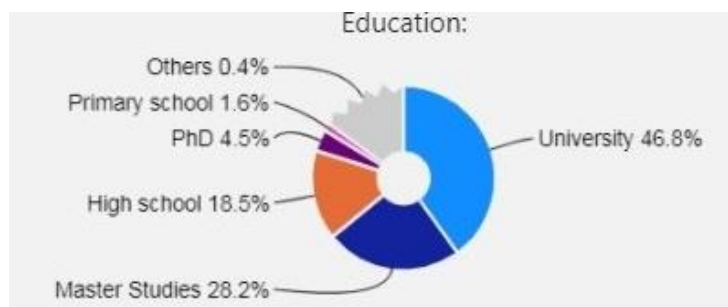


Figure 4 Respondents' education level

In the sample, respondents from 10 municipalities in Skopje and the City of Skopje and from 52 municipalities from the country, were included. Most of the respondents are from the ten municipalities of the City of Skopje, 771 respondents or 66,6% of the total number of respondents. In regards with the rest of the country, most of the respondents are from Kumanovo (14.2%), then Bitola (10%) and Prilep (9.56%). Tetovo, which is right after Prilep by population, accounts for only 4.39%. The other municipalities are represented with significantly less respondents (Figure 5).



Figure 5 Respondents' municipalities

As Figure 6 shows, most of the respondents (73.93%) are employed, most of them in the private sector (40,4%) and in public administration (18,4%).

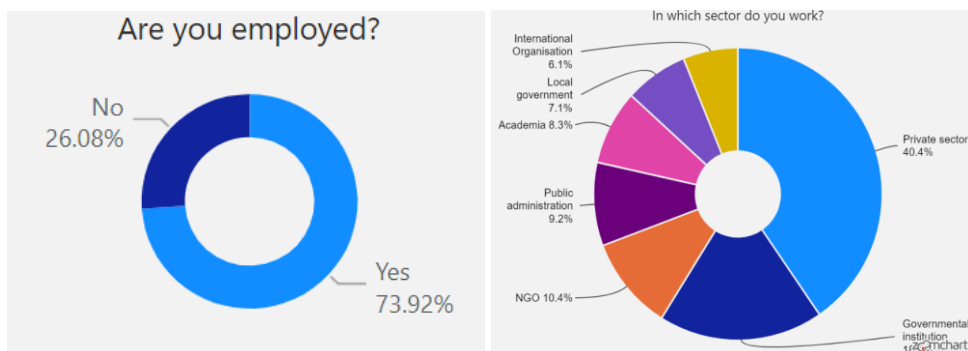


Figure 6 Employment status (left) and Sector distribution (right)

Figure 7 shows how the respondents rank the seriousness of the possible threats to our society, where with 5 the most serious threat is marked and with 1 the less serious threat. The results show that the corruption and the criminal are considered to be most serious threat by most of the respondents (61%), followed by the threat of lack of clean water (58%), and 53% of the respondents ranked the poverty and the economic state as third most serious threat for the society. The respondents were at least concerned about the population growth.

According to the interactive graph, people from Kumanovo consider that the extreme weather occurrences and the lack of clean water are the biggest threat, and the people from Tetovo consider that the corruption and the criminal are the biggest threat, followed by the lack of clean water and climate change.

But, if we include the gender aspect, we will see that the female population considers climate change as second most serious, after the lack of clean water.

Beside the ten possible threats listed in the questionnaire, the respondents also indicated the following issues as serious threat to the society: *political instability, inappropriate management of communal and integrated waste, inappropriate sanctioning, breach of the laws, quality of the education, air pollution, fires and illegal activities in nature.*

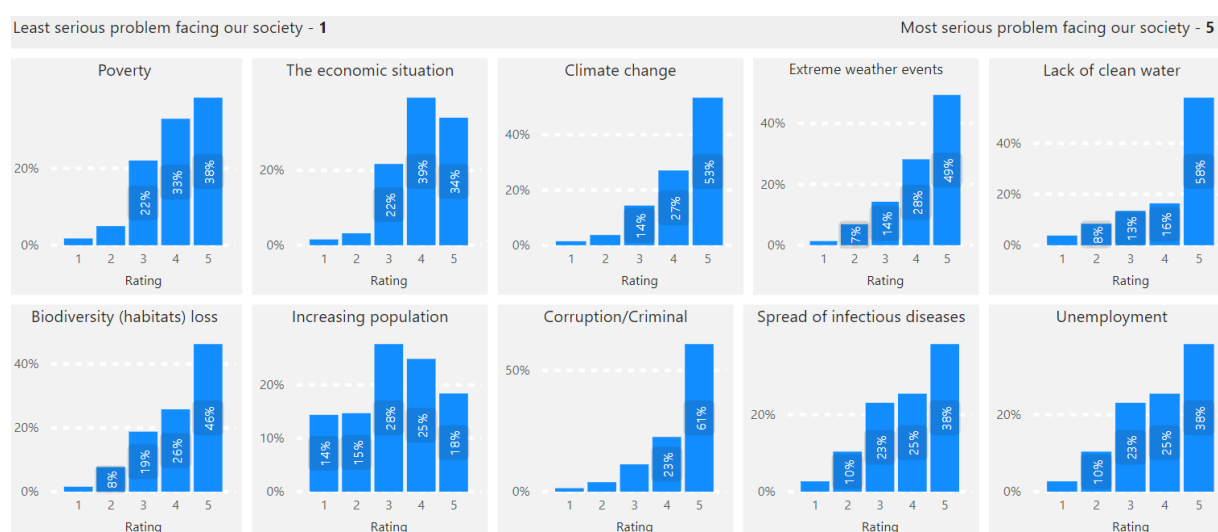


Figure 7 Ranking of the seriousness of the possible threats for the society

Most of the respondents in the last 10 years noticed changes in the environment or in the climate, and only 2% did not notice it. Most of the respondents connect climate change with occurrence of high temperatures, such as heat and cold waves (35,6%), weather seasons' change (25,6%) and change in participation (16%). The data match the data from previous surveys which means that the public has kept the same perception on the visible manifestations of climate change.

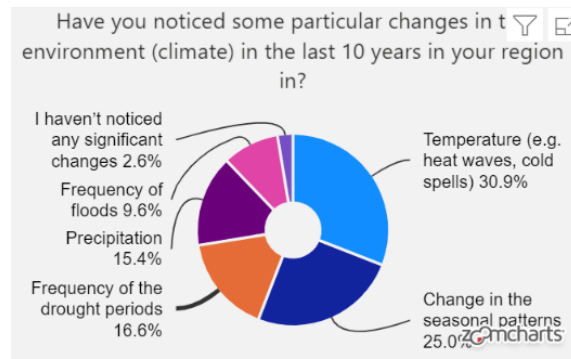


Figure 8 Aspects related to environment/climate in which respondents noticed change in the last 10 years

Figure 9 shows that most of the respondents (64.9%) think that it is important to fight against climate change, and most of them think that this should be concern of the government institutions (34.9%), and 30% think that the greatest polluters should also be most concerned and engaged. Only 2.4% of the respondents think that there are other more urgent problems.

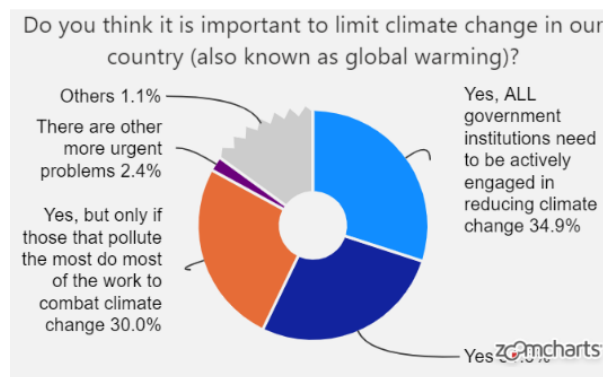


Figure 9 Respondents' opinion regarding fight against climate change

Due to the fact that the gases that pollute the air are very often confused with the greenhouse gases which are direct causers of climate change, we asked the respondents to state whether they think that climate change is different, but directly connected to air pollution or they think that these two occurrences are the same thing (Figure 10). 66.1% of the respondents answered that they are different, but connected, 17.2% think that there is no connection between climate change and air pollution and 16.7% think that they are different.

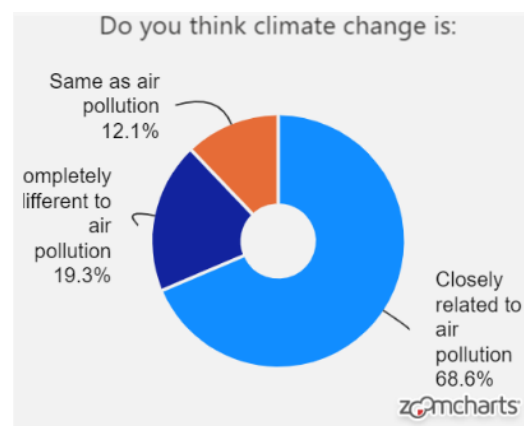


Figure 10 Respondents' perception on air pollution

Generally, the citizens think that none of the groups of stakeholders engage enough in the fight against climate change, as seen on Figure 11. Especially, they are not content with the behavior of the private companies and the local government. The central government is in third place which means that the citizens became aware that other stakeholders have also responsibilities for climate change beside the central government. It is interesting that according to the opinion stated in this survey, in the fourth place in lack of engagement are the citizens. However, the respondents think that the non-governmental organizations, international organizations and the EU contribute to the fight against climate change, but only to certain extent.

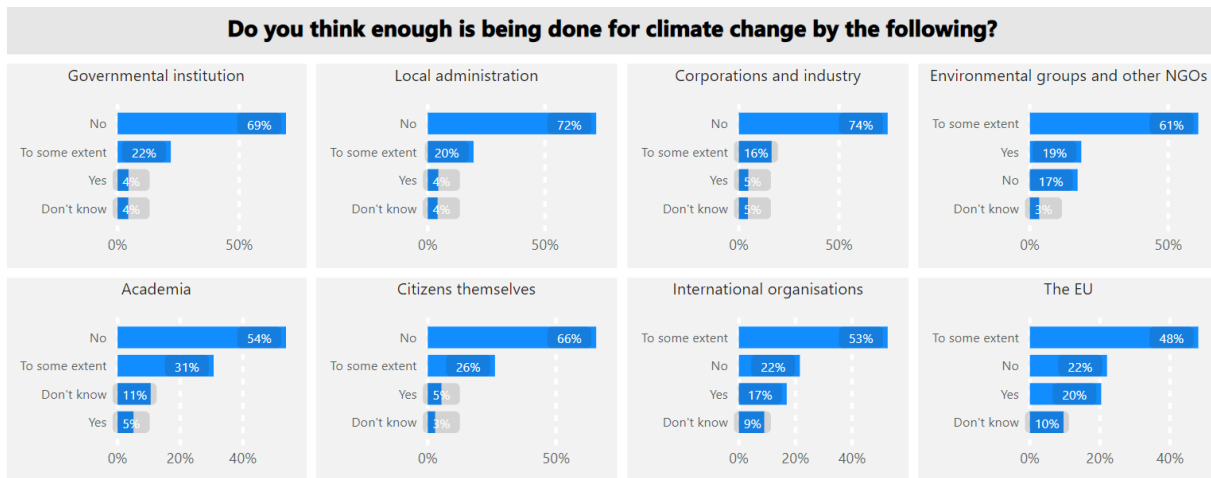


Figure 11 Respondents' perception on engagement of the different stakeholders regarding climate change

Encouraging is the fact that most of the respondents included in the survey consider environment protection and climate change mitigation when they make decisions in the everyday life. Most of the respondents use the transport which harms the environment the least (13.8%), then they try to decrease energy consumption (12%) and to isolate their homes in order to additionally decrease the energy consumption (10.7%). Measures which are rarely stated are decreasing of the water consumption (9.9%), waste recycling (9.8%), buying products that do not harm the environment and buying local products (9.1%). After these, measure stated, but very rarely are setting up equipment which uses renewable sources of energy (7%) and buying cars which use less fuel or fuel which is less harmful (6.6%). Unpopularity of the measures for buying equipment for using renewable energy and cars which use less fuel can be explained with the fact that these measures require investing largest amount of money which is not available to most of the respondents. Exactly these measures can give the guidelines for the [subsidies' policies](#) which are foreseen on national and local level.

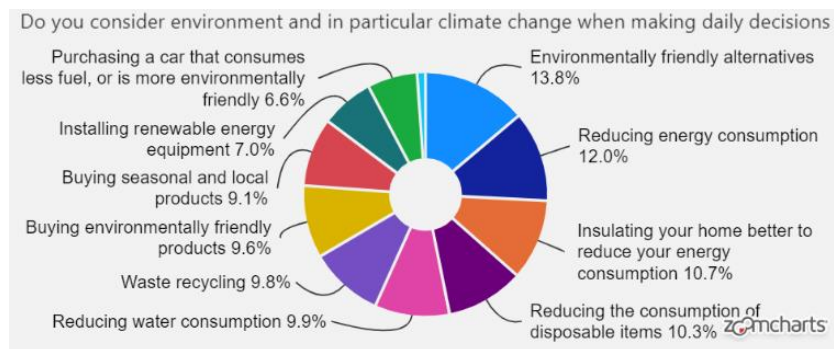


Figure 12 Activities targeted towards environment protection and CC mitigation

Figure 13 explains the reasons for the aforementioned decisions which are targeted towards environment protection. 23.8% of the respondents think that while undertaking activities for climate change mitigation they are firstly motivated by the aspiration to keep the environment clean and healthy. Beside this, 19.5% think that if everyone individually made a change of his/her behavior, this would have had direct effect on climate change and 18.2% think that it is their citizen obligation to protect the environment. 17.5% are concerned with the question what kind of world would they leave to the future generations and 12.5% are concerned that they are directly exposed to climate change. Only 7.6% when making decisions, consider the need for decrease of the households' expenses.

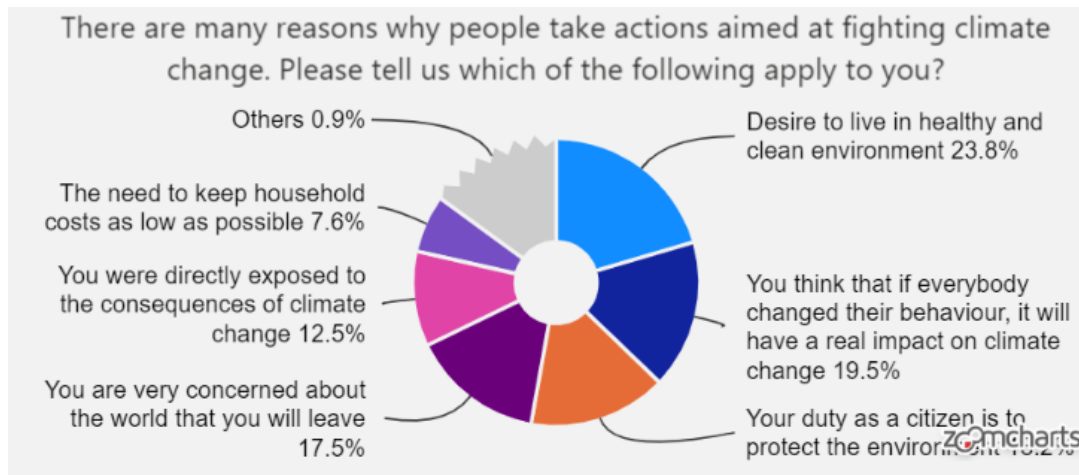


Figure 13 Reasons for undertaking activities for environment protection

Although, as can be seen on Figure 14, there are some possible obstacles for undertaking activities for environment protection and climate change mitigation. 28.5% from the respondents think that this is not directly their duty, but that this is a duty of the government, the companies and the industry.

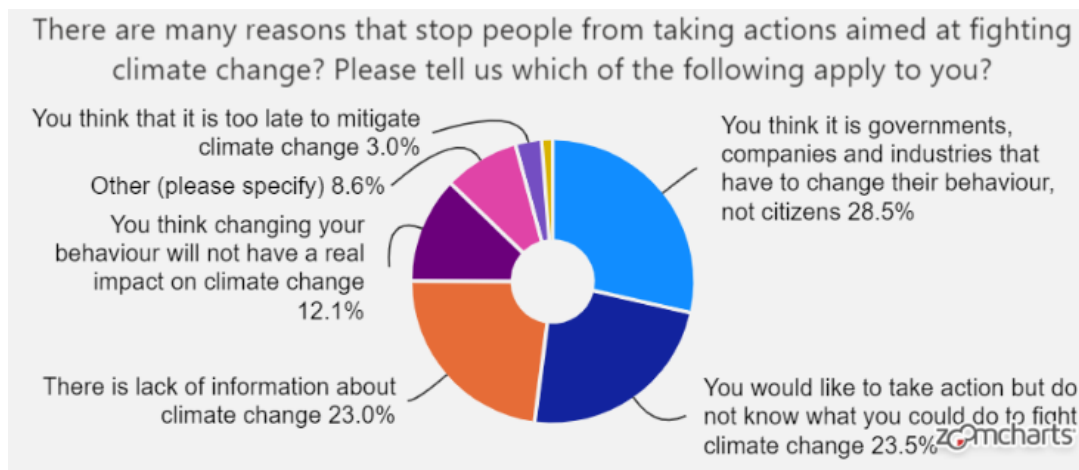


Figure 14 Reasons for not taking any activity for environment protection and climate change mitigation

23.5% express that they would like to engage, but do not know how and 23% responded that they do not have enough information regarding climate change, but only 12.1% from the respondents think that the climate change are not related to their individual behavior and for 3% of the respondents it is too late for undertaking any activities. This is a clear indicator that

the major portion of the sample size is not enough and suitably informed and that especially there is a need to share the experience and the model for undertaking ambitious #ClimateAction. It is encouraging that around 35% of the respondent showed readiness to switch to alternative source of energy (Figure 15). Still, the acceptance of such sources depends on the price of the energy for 18% of the respondents. 27% of the sample would accept new price which is not higher than 20% of the actual price, while 18% would do so only if the price stays unchanged.

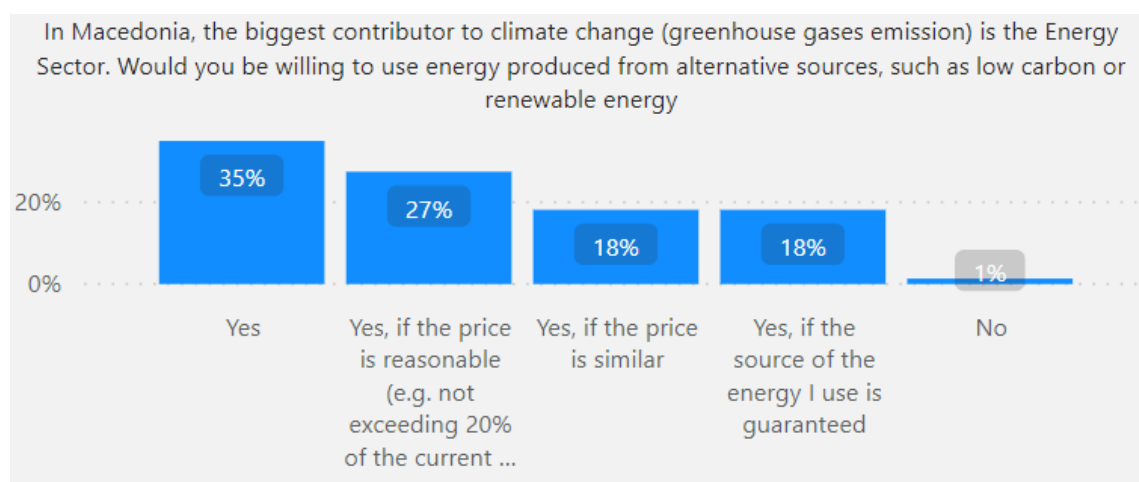


Figure 15 Readiness for use of alternative energy sources

Figure 16 shows that the respondents are informed for the different influences and consequences of climate change, as well as for the different reasons for climate change. However, the citizens of the North Macedonia feel that they lack additional data on how to adapt to the climate change, but also about the activities that can be undertaken in order to fight climate change.

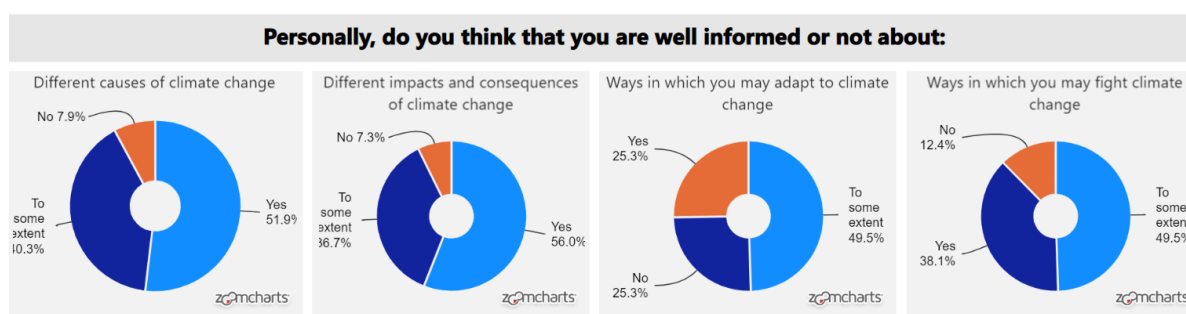


Figure 16 Acquaintance with different issues regarding climate change

The major part of the data for climate change, as can be seen on Figure 17, the respondents get generally on the Internet (19.7%), via social media (13.4%), project and study reports (12.7%) and specialized internet portals (12.7%). Besides that, 9.8% of the respondents get the data via TV, 7.9% read scientific magazines and 6.4% read newspapers. The information that only 4.5% stated that they use the portal www.klimatskipromeni.mk and only 4.3% are visiting the official web-site of the Ministry on Environment and Psychical Planning, indicates that better promotion of these sites is needed. The least convenient manner of dissemination of information regarding climate change is via email (2%).

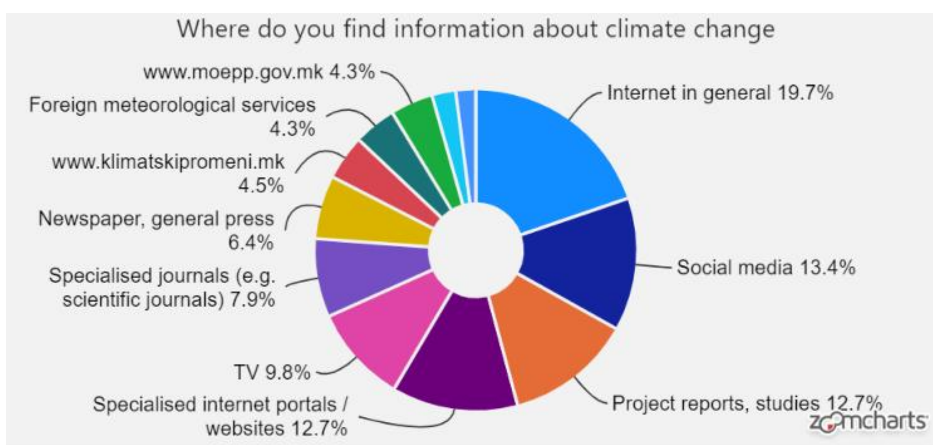


Figure 17 Sources of information regarding CC

92.3% of the respondents' noticed increase of the visibility of the issues related to climate change in the media recently (Figure 18). Most of them, (27.4%) believe that this is related to increased public awareness and public interest in climate change. As second reason for the increase of the visibility of the issue of climate change in the media according to the respondents (25.5%) is the occurrence of extreme weather conditions, such as extreme precipitation, floods and the winds. 17.8% think that the higher visibility is due to the increased international pressure after the signing of the Paris Agreement, but also due to the increased activities initiated by the central and local institutions (5%). Only 7.7% of the respondents stated that they didn't notice any change of the visibility of the issue in the media.

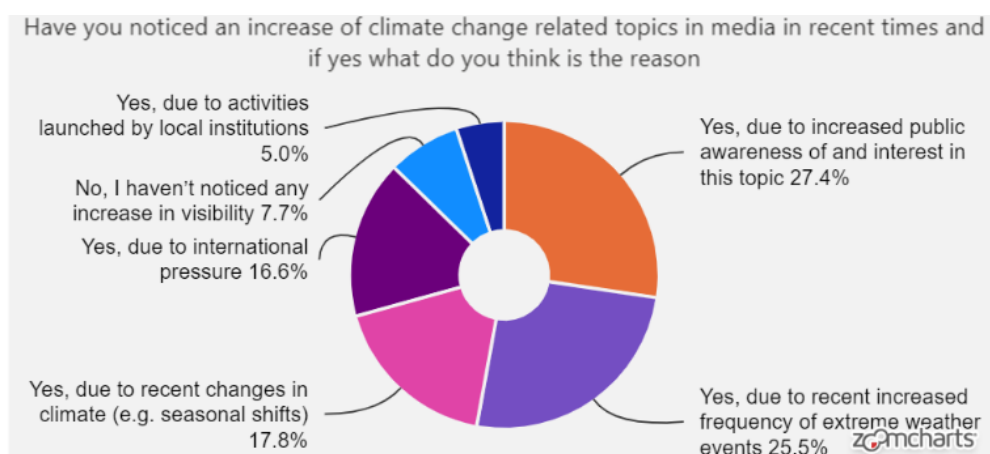


Figure 18 Perception on the higher visibility of the issue of CC in the media

A major part of the respondents heard about the public campaigns that are conducted by the non-governmental organizations (31.8%) and the international organizations – UNDP, USAID, GIZ (29.4%), and which aim to raise awareness and improve the knowledge of the general public, as well as to influence the perception on climate change (Figure 19). Besides, 18.4% of the respondents are acquainted with the campaigns on climate change which are organized by the Ministry of Environment and Psychological Planning. 11.6% do recognize the EU Delegation in the Republic of North Macedonia as carrier of campaigns for raising of public awareness on climate change, and about activities of the local government know only 6.2% of the respondents.

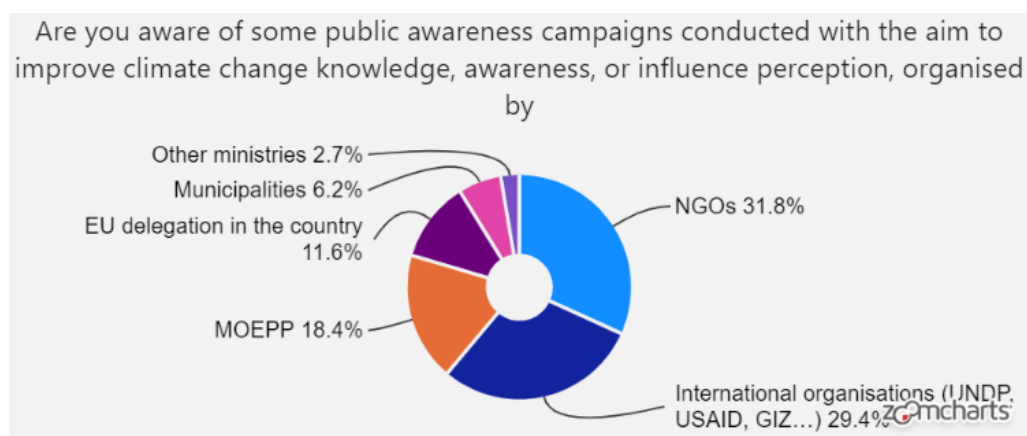


Figure 19 Familiarity with CC public awareness campaigns organized by different stakeholders in the country

Figure 20 shows which international organizations are recognized by the respondents as connected with projects for climate change. Major part of the respondents (26.08%) recognize the UNDP as connected with projects for climate change. Other organizations which have high visibility in this area are USAID (15.14%) and the European Commission (14%)

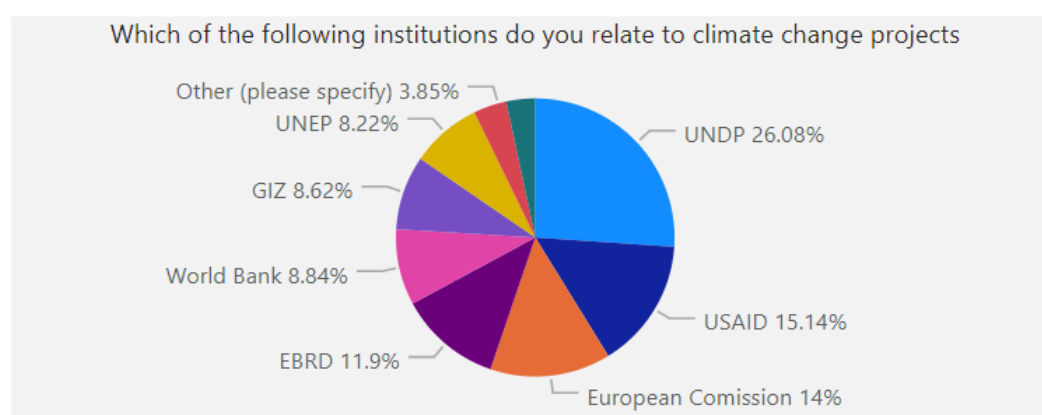


Figure 20 Institutions that respondents link to CC projects

Worth mentioning are the numerous respondents' comments in the part where they are asked to name few campaigns that they consider to be useful. A major number of different campaigns and activities are remembered, which shows that the interest on this issue and the recognition of the issue by the public has increased. Respondents consider that the activities which are part of the movement Fridays for Future are most useful, but also there are a lot of other campaigns although they do not directly target climate change. Campaigns on different issues are mentioned, starting from campaigns for using bicycles and alternative transport, changing habits of the population, for increase of inspections and increase of sanctioning.

3.2. Comparative analysis

In this part of the survey, we will present the results according to several different sub-groups which are identified in the sample and who were considered interesting for comparative analysis. Such sub-groups were identified according to the geographical location of the respondents, their age and their connection to different sectors.

3.2.1. Geographical particularities

All 10 municipalities in Skopje and the City of Skopje are represented in the sample, and the respondents from Skopje represent 66.5% of the total number of respondents. Women are more dominant and represent 62.13% of this group, while 37.87% are men. The difference between the number of women and men who decided to answer the questionnaire in the other municipalities (53) is slightly lesser, but again women (54.9%) are numerous than the men (45.1%).

In Skopje, from 771 respondent, 80.3% are employed, most of them in the private sector 41.3%, in the public administration 16.8% (mostly in the local government and the ministries) and in the non-governmental sector 12.7%. Respondents are mainly with high education (bachelor degree 47.1% and master degree 34%). 12.7% are with high school education.

Respondents from other municipalities in the country are 387 from 53 municipalities, of which most numerous are Kumanovo (14,2%), Bitola (10%), Priliep (9.56%), Ohrid (7.7%), Veles (5.56%) and Tetovo (4.39%). In the answers of the questionnaire from the respondents from other municipalities also dominate women with 53.49%, compared to men 46.51%. They are mainly employed in the private sector (38%), in governmental institutions (23%), in local self-governments (13.7%), in public administration (11.1%) and in the NGO sector only 4.3%. The respondents are mainly with high education (bachelor degree 46.3% and master degree 16.8%). It is interesting that in this survey compared to the one in 2016, there is an intensive growth of participation of respondents with high school education, i.e. 9.7% in 2016 to 18% in 2019 година. The growth of the percentage of respondents with high school education is doubles which means that the issue becomes more comprehensive and understandable for the citizens with lower level of education. On Figure 21, the following perceptions are illustrated: the possible threats for our society with the both identified groups based on the municipality they live in (from Skopje the upper graph and from the other municipalities in North Macedonia – the other graph). We can see that the ranking of the threats is different for the two different groups.

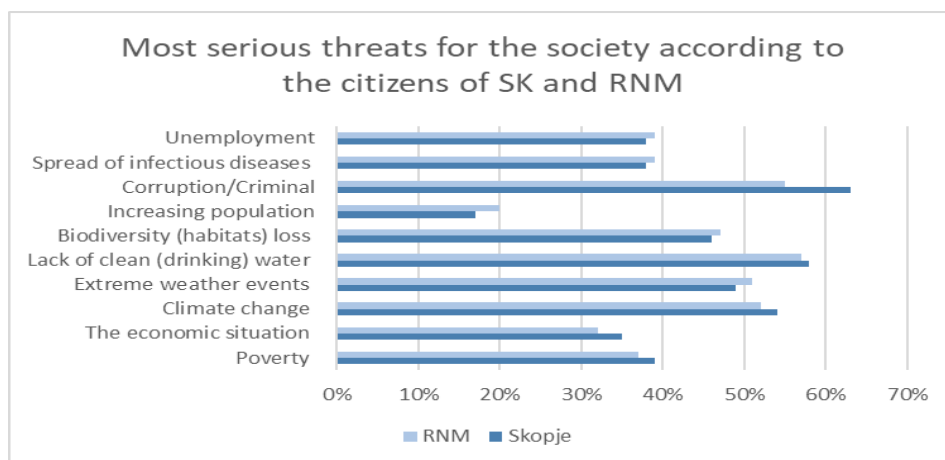


Figure 21 Most serious threats for the society according to the SKC and RNM respondents

Figure 22 presents the decisions made during everyday activities which are influenced by the consciousness regarding the climate. The results show that during everyday decision making, the respondents from Skopje and from other cities in the country are less careful about the use of transport which harms the environment at the least and decreases the energy consumption. It is surprising that in these two categories, both groups think alike, regardless the fact that the major part of the projects about alternative transport are conducted in Skopje. But, while citizens of Skopje are more ready to decrease the consumption of subjects for one use, the respondents from other cities are more concerned with improvement of the isolation which will decrease the energy consumption.

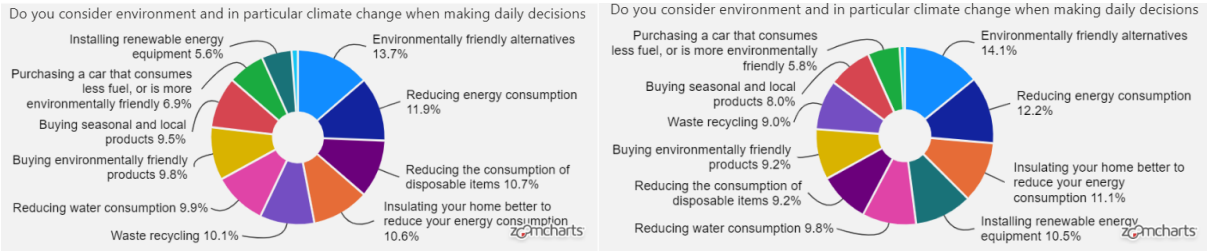


Figure 22 Environmental protection and CC reduction activities undertaken by SKC (left graph) and respondents from other municipalities in the country (right graph)

Compared to this (Figure 23), both groups are equally ready to use the energy which is produced from alternative sources/low carbon sources/renewable energy, unless the price is reasonable, but citizens of Skopje insist on same price more than the others, and it is highly significant for them that the energy source is guaranteed.

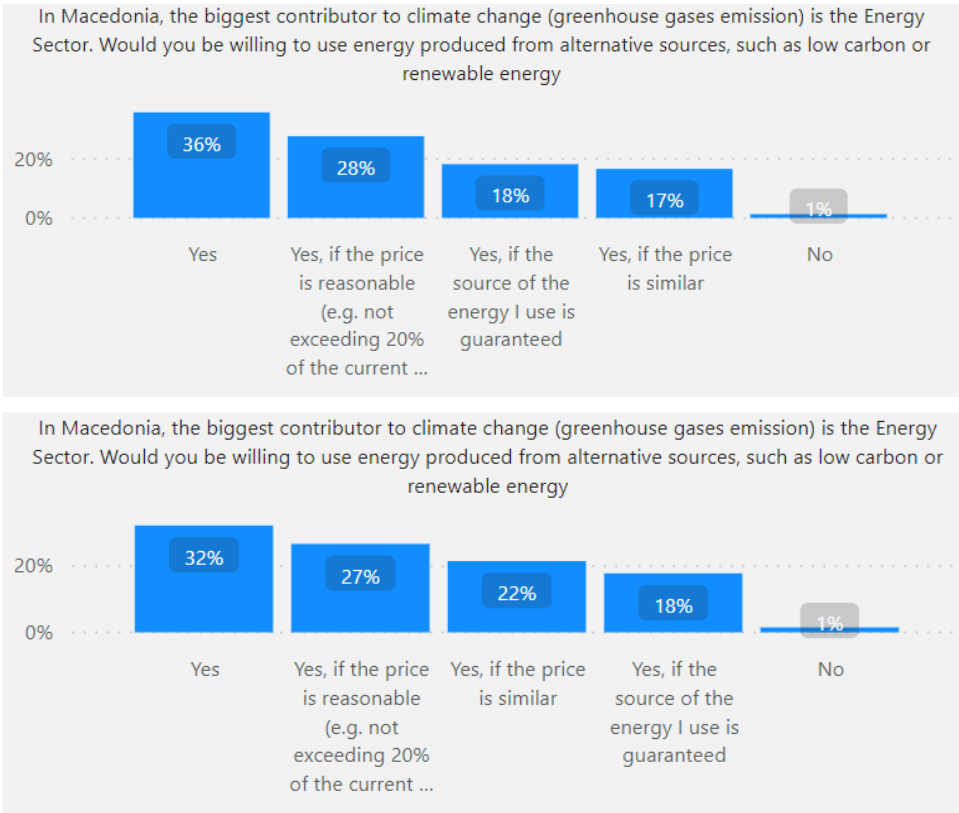


Figure 23 Answers regarding the readiness for payment of higher price for energy from alternative sources from SKC (graph up) and other cities (graph down)

Comparing the answers on the questions regarding the obstacles for undertaking activities for protection of the environment and climate change mitigation, we can see that 26,5% of the respondents from Skopje do not undertake any activities because they do not have enough information, 25,3% think that the government and the local self-government, the companies and the industry should change their behavior and around 20% want to undertake something, but do not know how and what to do. On the other hand, the respondents from other cities, major part of them or 30,9% think that the Government and the local self-government, the companies and the industry should change their behavior and 25,3% do not undertake anything because although they want to, they do not know how. The same number of respondents from the other cities do not undertake activities because they do not have enough information. Both groups are really skeptical regarding the real influence that the change of individual behavior can make to climate change (Figure 24).



Figure 24 Reasons for not undertaking of activities for protection of environment and CC mitigation, from Skopje (left) and other cities (right)

Comparing the answers on the questions for acquaintance of the respondents with different problem related to climate change, we can see that both groups, from Skopje and from other cities, only around 6% are not acquainted with the consequences of climate change, but however, both groups have lack of information regarding climate change adaptation, which is also confirms in the general sample (Figure 25).

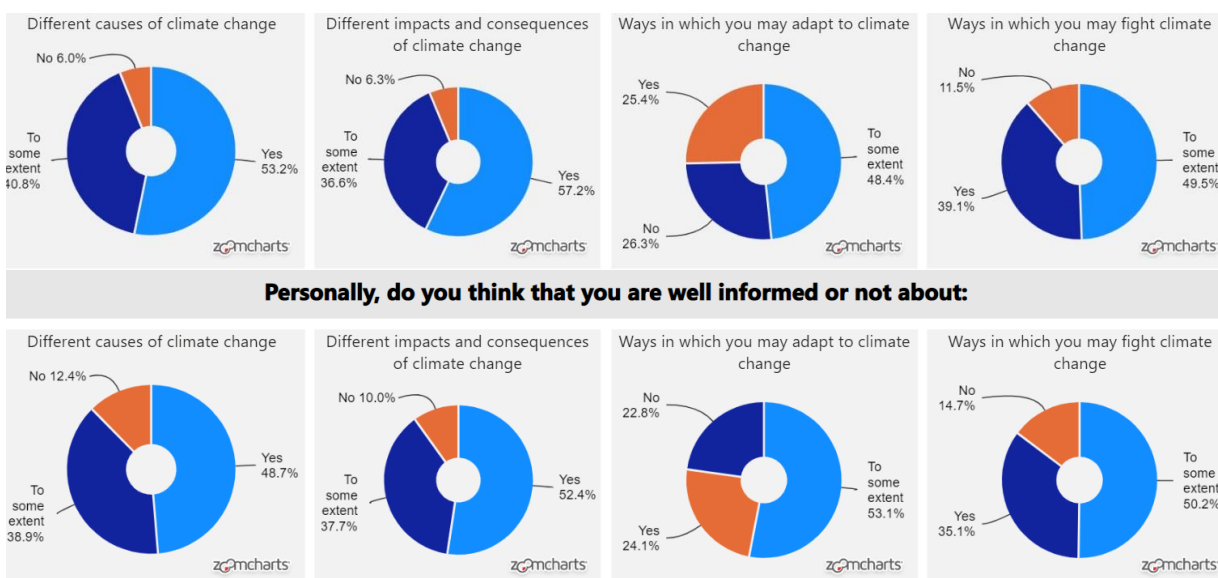


Figure 25 Acquaintance with different problems related to CC, divided by number of respondents from Skopje (up) and from the rest of the country (down)

Both groups regarding the sources of information for climate change mainly think alike and the major part of the information get from the internet, but respondents from Skopje read more

project report, and the ones from other cities in RNM watch TV more. The participation of social media has decreased at both groups comparing to 2016, when it was measure to be 50% (Figure 26).

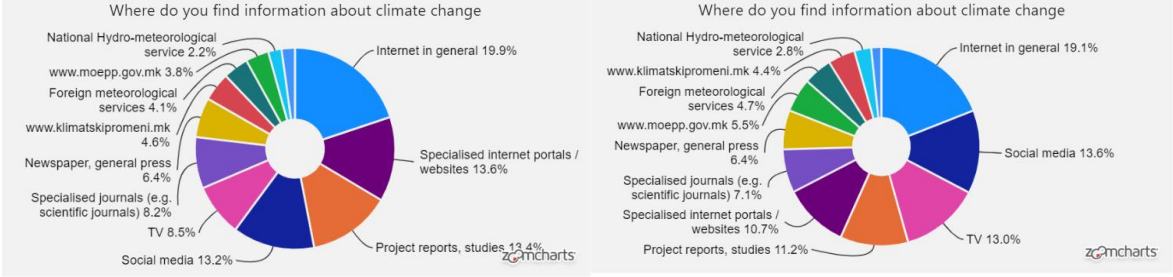


Figure 26 Sources of information for CC and reasons and higher visibility of the issue in the media for Skopje (left) and other cities (right)

But, regarding the frequency of the issues regarding climate change, both groups claim that the reason for that is the increase awareness and interest and the more frequent occurrence of extreme events. Regarding the role of the international pressure for the frequency of the issue, other groups think alike (Figure 27).



Figure 27 Frequency of the issues related to CC in the media according to respondents from Skopje and in RNM

Generally, both groups of respondents think alike regarding the acquaintance with the carriers of climate change campaigns.

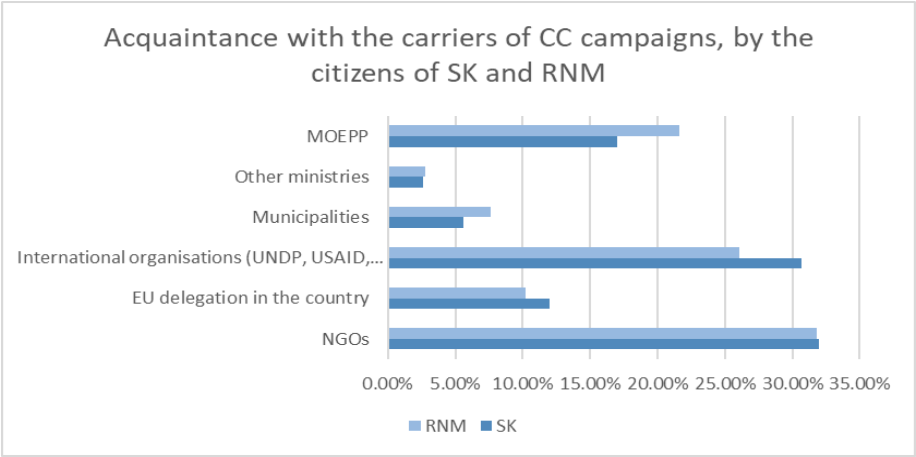


Figure 28 Acquaintance with the carriers of CC campaigns, by the SKC and by citizens of other cities

Both groups think that most active in this are the non-governmental organizations, after them the international organizations, but the respondents from other cities in North Macedonia notice more the activities of the Ministry of environment and psychical planning (Figure 28).

Regarding the question which international organizations are recognized by the public as related to project regarding climate change, both groups agree that it is the UNDP, while in Skopje, the EU Commission is more recognized than in the other cities. In other cities, the USAID is on the second place. Also, 9.19% of the respondents from Skopje relate UNEP with climate change, but in other municipalities, this number is lower – 5.7%.

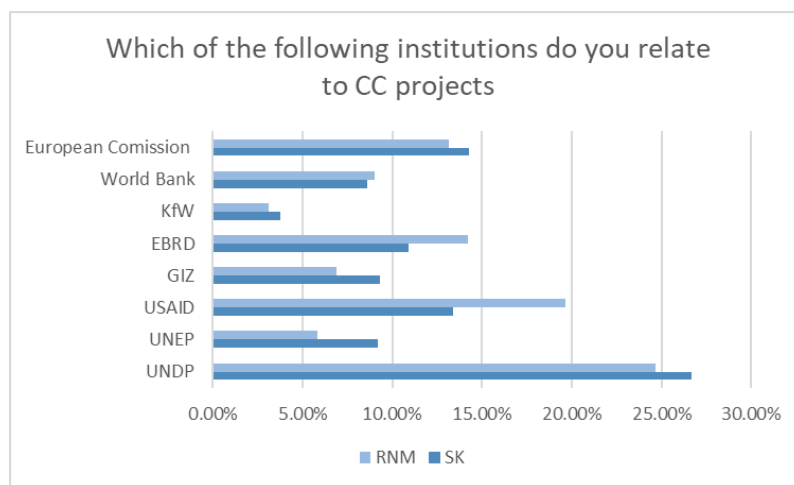


Figure 29 Recognition of the organizations and institutions – carriers of projects by SKC and citizens of other cities

3.2.2. Characteristics regarding age

Having in mind that young people are next leaders regarding the activities for climate change mitigation and according to the fact that education is important for undertaking activities in protection of environment and climate, in this part, certain answers given by 230 youngest respondents (aged 25, including 25 years old), which represent 19,6% of the total sample, are analyzed.

In this group, having in mind the gender balance, 58,7% are girls and 41,3% are boys. Most of them are unemployed and the 23,4% that are employed work in the private sector or in the public administration.

Young people consider climate change as most serious threat to the society (65%), before the lack of clean water (61%) and before the corruption and the criminal and extreme weather events (both 53%). This group is at least worried about the population growth (16%).

Image 30 shows that the aspiration to live in clean environment is the main reason for the young respondents to undertake activities for climate change mitigation, but also to believe that with the change of individual behavior can significantly influence the climate change. Answers of this group on these two questions match the answers of the whole sample (Figure 13).

More than 47%, the reason for not undertaking the activities see in the lack of knowledge or lack of information on climate change. However, the group for itself think that it is enough or certainly informed of the ways of undertaking smart #ClimateAction, but there is not enough information for the ways of adaptation (Figure 30). Main sources of information related to the

climate change for youth are still the internet in general, the specialized internet portals and web-sites.

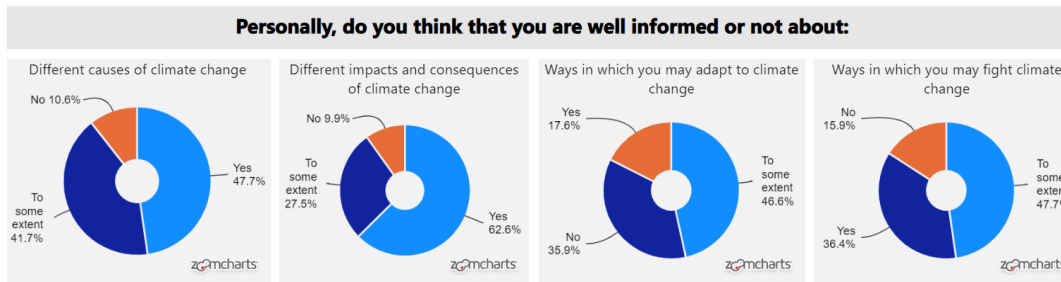


Figure 30 Information of the young respondents for the CC

Figure 31 shows that the youngest group is worried about the environment at least by using alternative transport, such as cycling, hiking or using public transport, than by decrease of energy consumption, but also with decrease of consumption of one use products, but by buying vehicles that uses less gas, at the least, which is understandable having in mind their age.

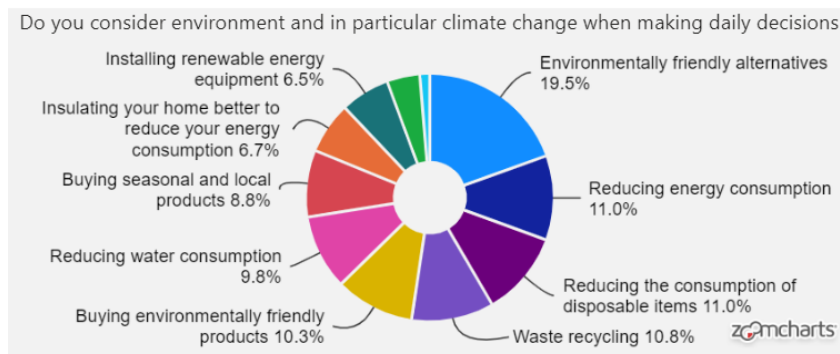


Figure 31 Activities for protection of the environment and CC mitigation which are practiced by the respondents aged 15-25

Most of the young respondents (26.4%) want to undertake activities, but do not know how. 23.4% of them think that mainly the Government, the local-self government and the industry should undertake activities against climate change. Worrying is the fact that 47.6% of the young respondents do not undertake activities because they do not have enough information or do not know what can be done. Still, it is encouraging to know that only 4,8% of the young respondents think that it is too late something to be done against climate change (Figure 32). 3.7% stated that they haven't noticed that the climate is changing.

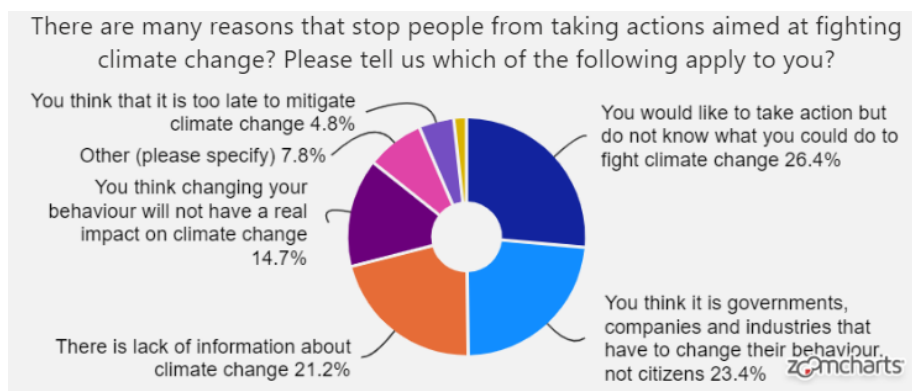


Figure 32 Reasons for not undertaking activities by the group aged 15-25

On the other hand, the young respondents, relate the campaigns for raising public awareness mainly with non-governmental organizations (40,3%) and international organizations such as UNDP, USAID, EU Commission (27,2%).

3.2.4. Characteristics of the employees in different sectors

Interesting for analysis are the three groups employees: in the governmental institutions and local self-government then the employees in the private sector and the employees in the non-governmental organizations. Of all the employees, the respondents that are employed in the private sector are the most numerous 4%, then in the public administration 25.5% and in the non-governmental organizations 10.4%

In all three groups, as well as in the general data in the questionnaire, the women are more numerous. All three groups think that the most serious threat for the society is the corruption, but they think differently regarding the second and the third ranked threat. While the employees in the public administration think that the climate change is the second ranked threat and the extreme weather events right after them, for the employees in the private sector, secondly ranked threat is the lack of clean water and thirdly ranked is the climate change. The respondents who work in the non-governmental sector think that after the corruption, the most serious threat is the climate change and then the lack of clean water.

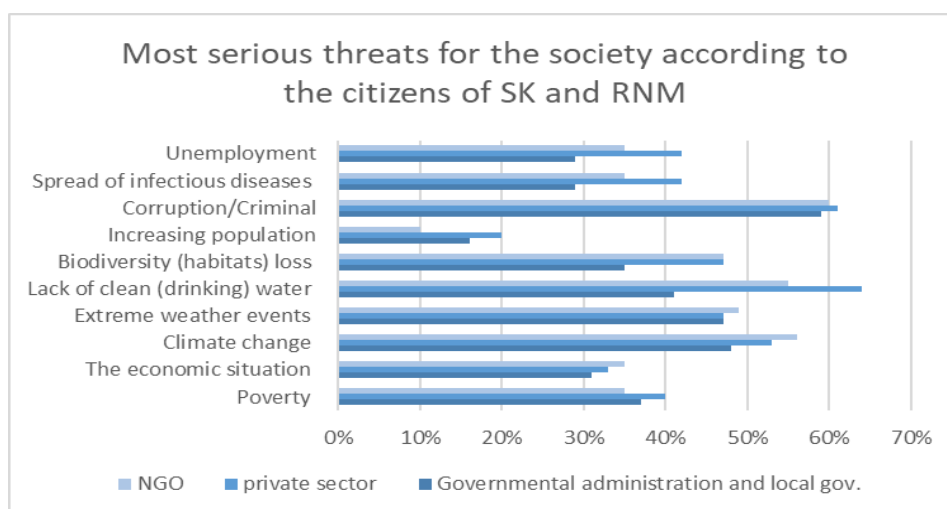


Figure 33 Comparison of the opinions of the state and local administration, private sector and NGOs regarding seriousness of the threats to society

Regarding the readiness to use low-carbon energy by renewable sources, it is interesting that the respondents from the most numerous group – employed in the private sector are most ready to use this kind of energy without asking the price or for guarantee of the source (37%). For 20% of the respondents from this group it is important that the price is reasonable and that the increase of the price for electricity is not higher than 20%. For 17% of the respondents, it is important that the source is guaranteed. 16% say that they would use this energy if the price is the same and only 2% responded negatively. But, for the employees in the public administration, the most important thing is that the price is the same (29%), then that the price does not exceed 20% of the present price (23%) and for 17% of the respondent employed in governmental institutions and local self-government, the guarantee of the source of the energy is important. The group of employees in the non-governmental sector think alike with the respondents employed in the private sector. 40% of them are ready to use this kind of energy,

for 31% of them it is important that the price is not higher than 20% of the present price, for 21% of the respondents from this group it is important that the source is guaranteed and for only 9% it is important that the price stays the same.

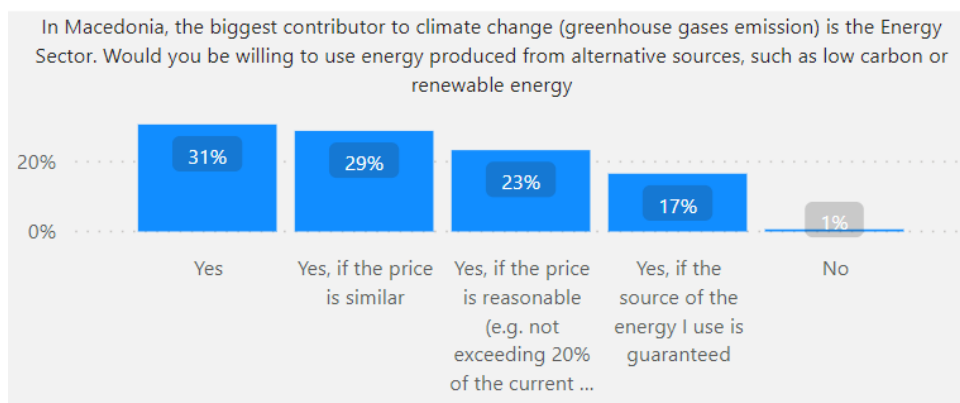


Figure 34 Readiness of the group employed in *state and local administration* for use of energy from alternative sources

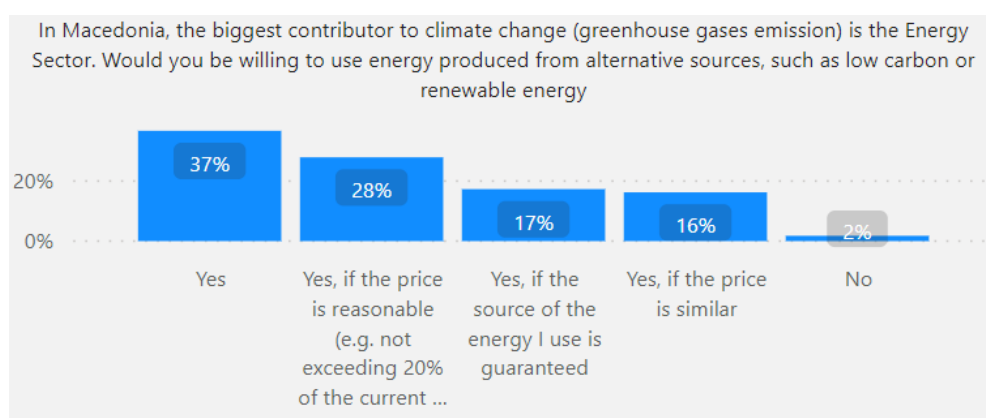


Figure 35 Readiness of the group employed in *the private sector* for use of energy from alternative sources

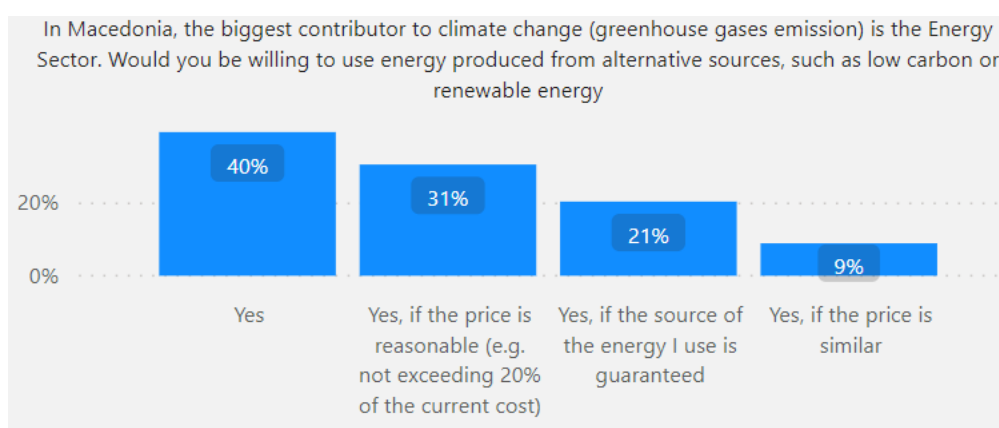


Figure 36 Readiness of the group *employed in the NGO sector* for use of energy from alternative sources

The interactive platform on which the survey's results are set up, provides opportunity for the parameters to be combined and in that way a clearer picture for the needs and ways of

perception to be provided. This also give opportunity to see clearer the behavior of different target groups and their needs regarding undertaking #ClimateAction. The different scenarios gotten by combination of different parameters give valuable data on what can and what should be taken into account during creation of policies and climate actions.

Example 1

If our target group is the women's population (because the members of the women's population were more ready to undertake actions regarding climate change), aged 25-54, employed in the public and local administration, we will see that 47,7% of them do not have enough information regarding climate change and they do not know what to do. Their motivation for undertaking #ClimateAction is the aspiration to live in clean environment and they are aware that every individual makes a change with his/her behavior. Most of them (54,3%) have need for more information regarding the reasons for climate change, 48,2% for the different influences and the consequences and 81% for the ways of adaptation and 75,9% on the ways how #ClimateAction can be undertaken. This is also confirmed by the answers on the question which are the reasons for not undertaking actions, on which 54.1% answered that they would like to undertake activities, but they do not know how or they do not have enough information. The information regarding the issue are mostly available by the Internet, the social media, TV, reports and studies, but also by specialized web-sites. 16% of the respondents are acquainted with the national communication platform on climate change of the Ministry of Environment and Psychological Planning (www.klimatskipromeni.mk), but the survey also showed that more work should be done on increasing the visibility of this web portal as most extensive source of information on national, local and global level.

Example 2

Results from the respondents employed in the local self-government in the Skopje Planning Region, the respondents from the Eastern Planning Region and the ones from the Polog Planning region, were compared. It is interesting that the group respondents from the Skopje Planning Region, considers the climate change and corruption as most serious threat to the society. For the group from the Eastern Planning Region, most serious threats are the climate change and poverty, and for the group from the Polog Planning Region the corruption and the criminal are most serious, right before poverty. An interesting fact is that the respondents from the local self-government ranked climate change as forth most serious threat and not in the category of most serious threats, although the region faced serious landslides of earth as a consequence of heavy rains which is related to climate change, and is a region where serious projects for protection from rains are conducted.

For the respondents from the same planning regions, who are employed in the private sector (most represented), results are slightly different. Namely, for the respondents from the Skopje Planning Region employed in the private sector, lack of clean water is the most serious problem, after which are the corruption and criminal, and the climate change come third. The respondents employed in the private sector from the Eastern Planning Region think that the lack of clean water is problem number one, they share the second place with the unemployment and spread of infectious diseases, less threatening is climate change, and all the others are equally serious with the same percentage of answers. For the respondents from the Polog Planning Region, most serious threat is corruption and criminal and the lack of clean

water and the economic condition share the second place. For these respondents, the poverty, climate change and the unemployment (14%) are on the last place.

If these groups of respondents are analyzed in regards with the question: who they think is not doing enough, we will see that the ones from the Skopje Planning Region think that the central government can do at the most, the ones from the Eastern Planning Region think that local government, the companies and the citizens are equally responsible for undertaking activities regarding climate change, and the third group from the Polog Planning Region think that the local government and the central government should be more active, then the international organizations and right after them, the companies.

4. MAIN FINDINGS AND RECOMMENDATIONS

The survey on acquaintance and the climate change perception of the citizens of North Macedonia, conducted via in the internet in the beginning of October 2019, provided results from respondents of all age groups. Mostly represented were respondents aged 25-39 (37.56%). Unlike in the survey in 2016, also represented in the sample were respondents aged more than 65 (2.07%) who are at least interested in use of new technologies and the Internet. This shows that young people are the most interested in climate change and in the everyday activities almost equally practice all the offered models of behavior. However, they are convinced and expect that the Government, local self-government and the companies engage more regarding this question. Beside this, the sample is consisted of respondents from different part of the Republic of North Macedonia and from different sectors. For the decision-makers, besides the distinction between governmental institutions and Local-Self Government, another window is added which gives the opportunity to select by “Planning region”. This can be very useful for establishing communication networks on local level which is in accordance with the [Climate Change Communication Strategy](#) and the [Action plan for 2019/2020](#). Representatives of international organizations (6.1%) also participated in this survey as in the previous one.

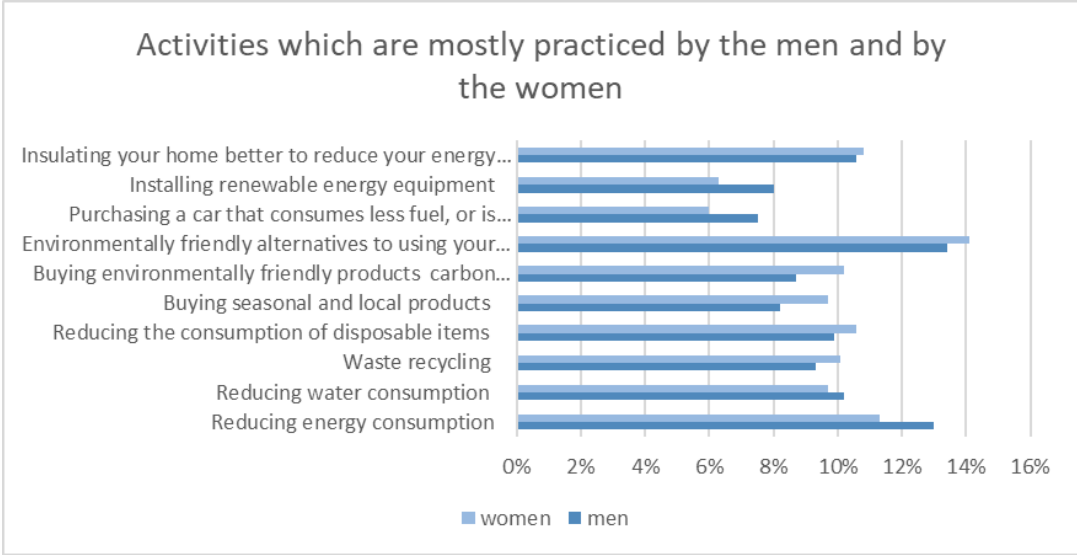


Figure 37 Mostly practiced Activities which influence CC by the men and by the women

The survey included the gender aspect of climate change and the results showed that women are more ready to answer this issue. From the total number respondents, 18.48% were more

women than men. This kind of analysis allowed the ways of perception in connection to gender to be seen.

The participants in the survey are mainly highly educated and 75% of them have bachelor or master degree. The sample of respondents are doubled compared to the one from the survey in 2016, which shows increased interest of the public on this issue.

With this survey, information was provided regarding the perceptions on the connection between climate change and the air pollution and it was shown that a major percentage of the respondents 68.6% know that the climate change and air pollution are different appearances, but 12.1% still think that it is the same. This data clearly shows that the Ministry of Environment and Psychical Planning should work more actively, with more suitable communication messages to improve the information of the citizens regarding these two issues. The survey showed that the respondents detected the corruption and criminal and the lack of clean water as most serious societal problems, while they consider climate change as third most serious threat to society. For the citizens of Skopje, most serious threat is corruption and criminal, and for the citizens of other Macedonian cities, most serious is the lack of clean water. This data is difference than the data gained with the survey in 2016 when as most serious threat was seen the economic situation, and from the survey in 2014 when the climate change was seen as threat number one. Still, seems that the unemployment and the spread of infectious diseases appear to be less worrying facts for respondents, unlike the 2016 results, when citizens were least concerned about nuclear proliferation and population grow. But, for the two groups of respondents, climate change are on the third place. Interesting for us are those 2.6% which did not notice any change in the climate in the last ten years and these 2.4% which do not consider climate change to be a major problem. Additionally, more information are needed to those 12.1% who identify the air pollution as climate change which means that there are not well acquainted with the facts.

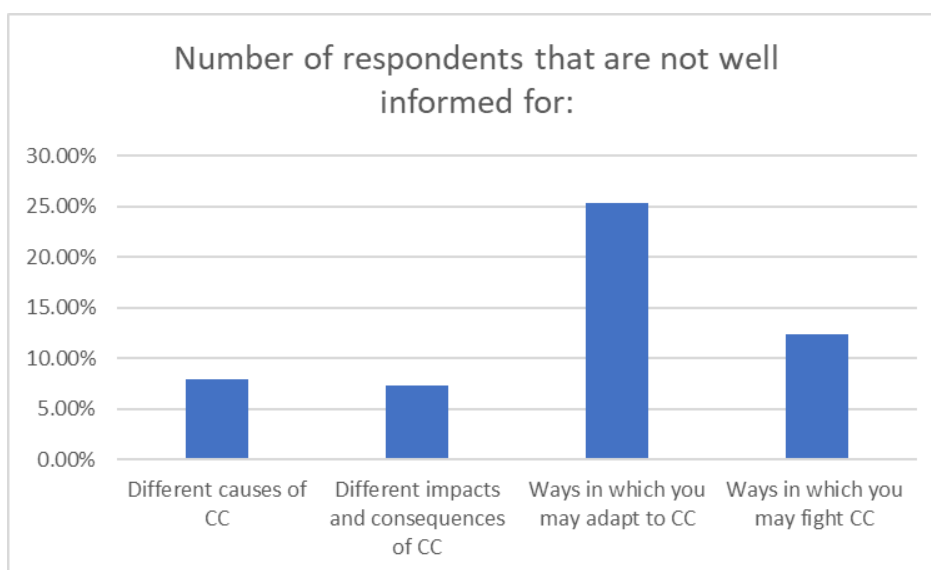


Figure 38 How many of the respondents and for what are not well informed

The results show a trend of increased information of the respondents for the reasons and the consequences of climate change, compared to the previous two surveys. 7.9% of them should learn more about the reasons and 7.3% of them should learn more about the consequences of climate change. 25.3% answered that they do not know enough for the ways of adaptation on

climate change and 12.4% answered that they do not know what action can be take to control them.

The citizens are not very content with the contribution of any of the suggested groups stakeholders in the fight against climate change. But, the respondents think that more ambitious #ClimateAction must be taken, firstly by the private sector, then by the central authorities and then by the NGOs, which means that the perception on climate change in the public in the last three years is improved and respondents do not just wait for the international organizations and the EU to help us, but they are more aware that this depends on the mobilization of our own resources and the responsible behavior towards all the stakeholders.

Namely, all these data leads to the following recommendation: all the stakeholders in the fight against climate change should improve their field activities, should connect mutually for better exchange of information for their activities which will result in better connection during realization of certain climate actions, but also to avoid repetition of same/similar projects.

Most commonly, climate actions conducted by different groups are not seen as an integral part of the global action, but separately and this blurs the picture of the certain amount of activities undertaken regarding this issue. On the other hand, some activities, like the increase of the resistance to floods and droughts are not recognized as climate actions.

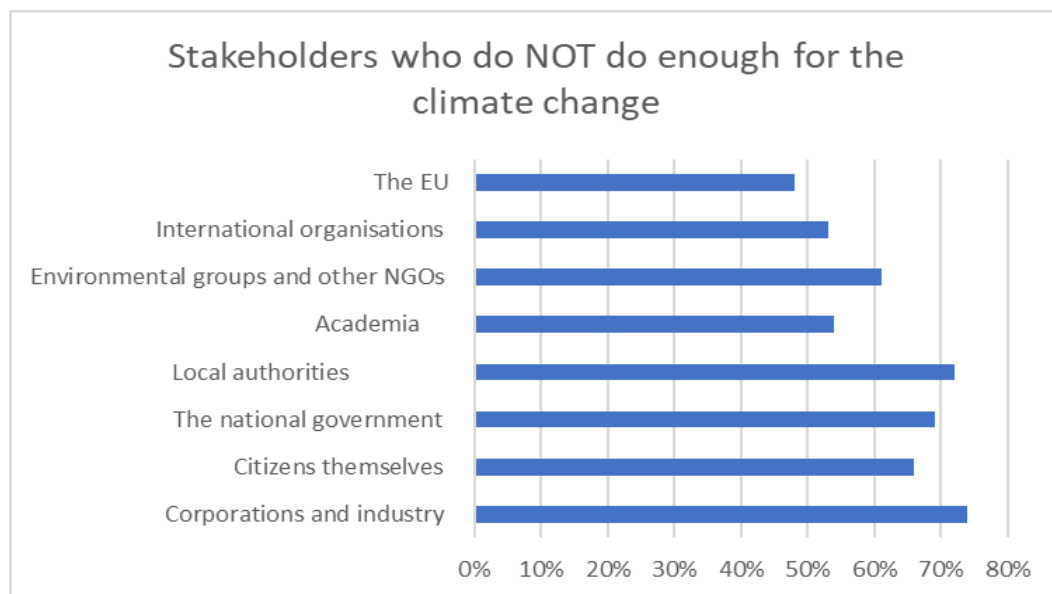


Figure 39 Stakeholders who do NOT do enough for the climate change

A major part of the respondents is ready to use alternative transport, to decrease energy consumption and to improve home isolation. But, having in mind that for the question regarding the everyday activities, the respondents were able to choose between multiple answers, the percentage of using other suggested ways for contributions towards climate change mitigation, is relatively low.

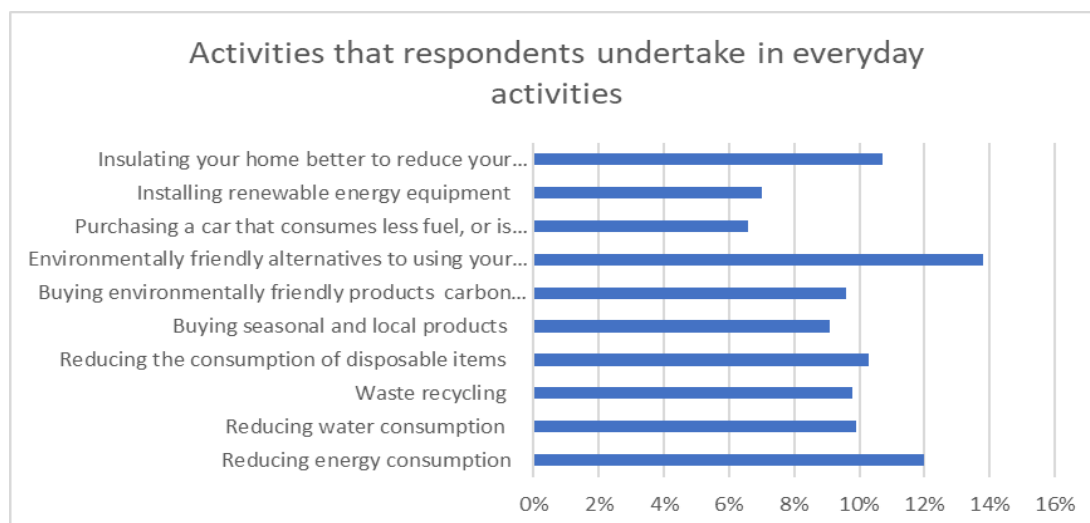


Figure 40 Activities that the respondents undertake in everyday activities

It is encouraging that almost all 35% of the respondents are unconditionally ready to start using energy produced by alternative sources, and for 19%, the price is not important if the source is guaranteed.

It is interesting that the employed in the private sector (37%) are unconditionally ready to start using energy from renewable sources and for only 16% of the respondents, the price is factor which influences their choice.

Regarding the motivation for undertaking activities for environment protection, the answers of the respondents are different from the ones from 2016. Namely, while in the previous survey all the respondents were led by the aspiration to live in healthy environment and 61% of them thought that it is their citizen duty, in this survey, the results showed that the perceptions have changed and only 24.6% are led by the aspiration to live in a healthy environment, 18.3% care about future generations and 15.5% became aware that if everyone made contribution individually, this can really affect climate change. The reason which all respondents state is the aspiration for healthy and clean environment. Only 3% of the respondents think that it is too late to act against climate change and 1.3% are not worried about the climate change. This is much less than the 14% who had such opinion in the previous survey.

The trend of acquaintance with the climate change has improved in the last two years: in 2014 even 34% did not know how to deal with the climate change and had limited information, in 2016 this percentage is much lower – 14% and in the last survey that percentage is 6.5%. This finding clearly shows that the efforts for distribution of information and sharing of the best practices, give results. The fact that the citizens are already aware of the long-term changes confirms this and also indicates that this positive trend should be sustained in the future. As it was indicated earlier, the raising of the awareness doesn't have to be the first step before the communication and discussion of the possible solutions on the problems related to climate change. This additionally indicates that special attention should be drawn on creation of climate change campaigns which aim is to share comprehensive and useful information. Additionally, the respondents showed high level of acquaintance with the campaigns conducted in the last period and specified more than 20 different campaigns which made impression on them and they consider to be useful.

The public acquaintance with the campaigns shows that the communication based on strategic framework for climate change communication and the action plans in which target groups are differentiated, their needs and the most useful tools for spreading of the messages showed that we are on good trace, but still we must continue with following of the recommendations given in [The Climate Change Communication Strategy Progress and Action Plan](#), conducted at the end of December 2016.

Furthermore, as in the previous survey, the respondents are at least acquainted with the ways for climate change adaptation and this issue still needs more elaboration and attention in order to promote the best practices and to support the development of concrete measures for adaptation.

While choosing the communication tools, the fact that the information sources through which respondents get information has significantly changed, should be taken into consideration. Namely, if in the survey from 2016, 73% of the respondents answered that they got the information on climate change generally via the internet, 51% via social media and 50% via TV, three years later, only 19.7% chose the option generally via the internet and many more recognize the specialized electronic and written source of information. The social media are still on the second place as information source, although in lower percentage (13.4%), but after them equally stand the project report and the studies and specialized internet content with 12.7%.

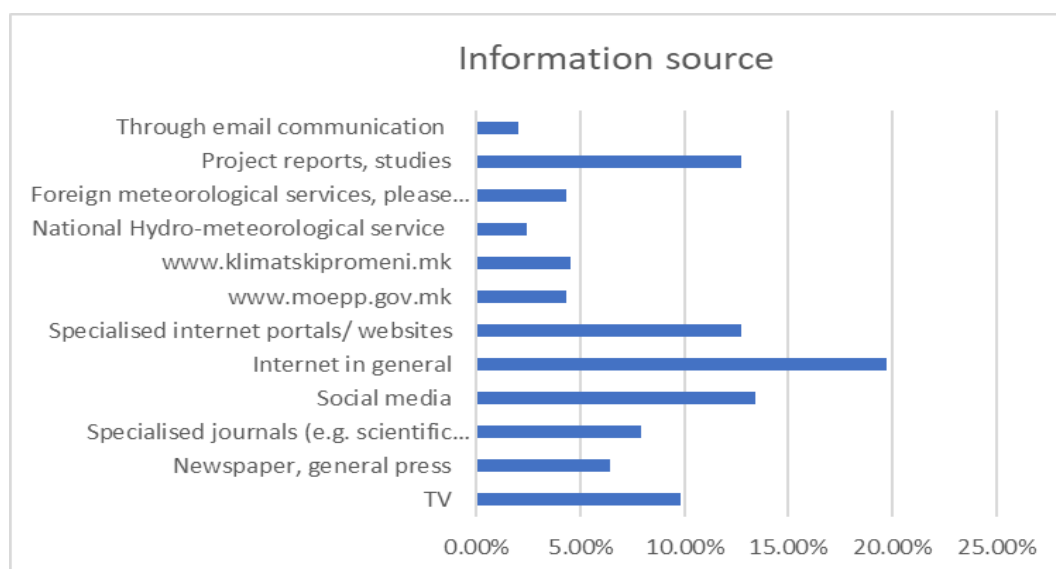


Figure 40 Information source

What is important for us is that more intensive work need to be done on popularization of the new communication platform on climate change www.klimatskipromeni.mk so that the platform could fulfill the aim for obtaining, but also sharing information to all stakeholders. This national communication platform is in fact, upgraded web-site on climate change which already exists and which is an open opportunity for the target groups to inform about their climate actions and to share good practices which will gather all the information regarding activities throughout the country to be gathered in one place.

The role of the NGO sector and the UNDP in conducting campaigns is more visible than the role of the Ministry of Environment and Psychical Planning which is the national coordinator for climate change. Regarding the knowledge about which institutions conduct projects for

climate change in the country, the UNDP is still in the first place with 27%, before the USAID with 50% and the European Commission with 14%.

In all our previous surveys, we try to find correlation between the perception on the seriousness of the problems that citizens face, including climate change, and the European public in general. The results of the last survey for [Standard Eurobarometer](#) conducted after the European elections between 7th June and 1st July 2019 in all 28 countries of the EU and five candidate countries show that the climate change which in the EU in the Fall 2018 was ranked on the fifth place, now show high growth (4%) and are the second most important concern after the immigration, in comparison with the general results in Republic of North Macedonia where the climate change was ranked as third.

In the part for general comments, a lot of respondents show the aspiration to leave their opinion for the issue, but also for the questionnaire. Regarding the usefulness of the questionnaire, the comments are very encouraging and positive and regarding climate change, generally respondents emphasize the need and the readiness for undertaking of coordinated, ambitious and “more aggressive” #ClimateAction for decreasing of the influence of the climate change as local, national and global threat.