Climate data and gender - demonstrating difference between business as usual and new behaviors

"When it comes to climate change, we are all at risk - no one is immune". But when it comes to impact, differences arise on how men and women experience the effects of climate change, as well as their ability to cope with them. Gender responsive approaches can initiate behavioral shift and increase climate action that will help communities to address climate change.

Following the international gender and climate change agenda, North Macedonia invested significant efforts to highlight the connections between gender and climate change in the last five years. Starting almost from scratch, and closely supported by UNDP, the Global Support Programme (GSP) and the GEF, the Ministry of Environment and Physical Planning and the Ministry of Labor and Social Policy succeeded to:

- Closely integrate gender aspects into national climate change strategic documents,
- Nominate Gender Focal Point to UNFCCC,
- Prepare short -term gender and climate change action plan and secure budget for its implementation
- Support South-South cooperation with the other Balkan countries.

Additionally, the national Commission of Equal Opportunities for Woman and Man and the Woman Parliamentary Club have been sensitized on gender and climate change issues, as part of the planned activities to initiate gender responsive approaches to contribute to effective implementation of climate policies.

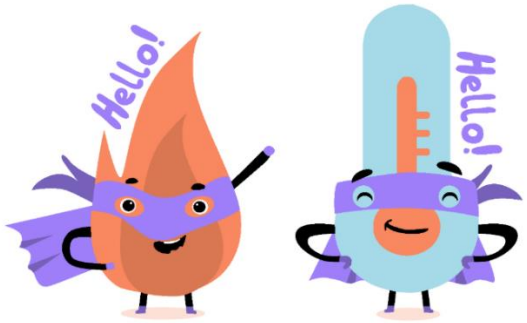
The Republic of North Macedonia ensures gender balanced country team in the UNFCCC negotiations process as well as in preparation of national climate change documents, thus supporting the UNFCCC efforts on raising awareness of the importance of gender-responsive climate policy and action as well as highlighting women's contribution and leadership in climate action.

Gender balance of the team involved in preparation of the latest national climate change report i.e. Second Biennial Update Report on Climate Change

Walking this path was not easy, as it was very difficult to explain to relevant counterparts, politicians, citizens, what's gender got to do with climate change. Specific examples and stories were needed, explaining the essence of this topic. Take a look at these 5 stories, 5 bold examples of how mainstreaming gender can increase climate ambition:

1. **Household heating**
2. **Transport**
3. **Green jobs**
4. **Girls in tech**
5. **Agriculture**

1. Household heating in Skopje



The problem:	**What UNDP did differently:**	**What we find that we didn't know before?**	**The gender aspect:**
Air pollution is one of the most serious environmental challenges in the urban areas of the country. The capital Skopje (with over 1/3 of the population in the country living in it) is one of the three cities in the country that were ranked in 2017 among the top 10 most-polluted in Europe. Because of the social pressure, the relevant institutions are all the time in the "action-reaction" mode, and they are making ad hoc decision for local level policies and investment in measures that are not the most optimal one thus not achieving the expected results. Private sector and other key players, as well as the citizens as direct contributors to the problem were not consulted nor included in the decision-making process. The nexus between air pollution and climate change hasn't been taken into consideration, especially in correlation of household heating…	Instead of using expert judgement on the household heating practices to understand the root-causes and behavioral patterns of the citizens, a comprehensive door-to-door questionnaire on a representative sample of 5,044 households in the City of Skopje has been carried out. This facilitated crowdsourcing generated a waste of geo-tagged micro-level data (additionally disaggregated by gender, socio-economic factors, energy consumption etc.) that were uploaded in the locally developed beta version of the mobile app Placeformer (its development was supported by the national Innovation Fund). In only three weeks, in January 2017, for minimal costs, UNDP did - for the first time in the country on such large sample - a comprehensive research in all 17 urban and rural municipalities in Skopje Valley. The data collected was used for development of computer-based foresight scenarios of how to simultaneously mitigate climate change and address the air pollution caused by households heating.	POOR THERMAL INSULATION of the buildings and houses require MORE ENERGY for heating, while the use of inefficient stoves and boilers for household heating further CONTRIBUTES TO INCREASED local pollution. INEFFICIENT USE OF ENERGY is one of the main reasons for INCREASING LEVELS of GHG emissions. Although most residents of Skopje express great concern about local air pollution, especially during the winter months, only 1,5% of households in the capital base their heating choices on the level of pollution caused by different heating devices, regardless of their monthly income. Surprisingly, even the wealthiest municipality within the Skopje agglomeration, Municipality of Centar, has pockets of low-income families that use cool for heating of their homes. Data collected provide possibility for exploring the cross-correlations of climate change and air pollution and identified 3 different measures for a Capital that can breathe rather than suffocate: • Constructing energy-efficient buildings (improvement of insulation in housing facilities) • Changing heating practices (efficient technologies) • Increased use of central heating (existing or small central systems) The results are stunning: in just 8 years, 12% reduction in CO2-eq and 70% reduction in PM10 and PM2.5 emissions can be obtained.	One of the biggest surprises of the survey was that income of the household is not the determining factor when choosing the source of heating. Number of higher income families are opting for wood as a heating source due to the lack of information, insufficient knowledge of better options, etc. The initial analyses reflected gender differentiated differences, especially when it comes to households with children younger than 18, single parent families etc. One example is explained on the next page, while the ongoing detailed analyses shall provide other insights into the household heating data that can speed up action based on gender differentiated citizens behaviors. As woman tend to take care about the electricity consumption in their homes (the major part of households' monthly bills), gender specific re-shaping of the policies and activities can increase their effectiveness and add health aspect in this nexus (relevant to the indoor pollution).

#SkopjeSeZagreva Open Data

Using **big datasets** opens potential for introducing **targeted activities** at very micro-level (**streets or neighborhoods**), based on **citizens behavior patterns** and analyses.

What **type of fuel** for **heating** do **SINGLE MOTHERS** living in the municipalities of Kisela Voda, Aerodrom and Karpos use?

56% heats on electricity

44% on firewood/pellets

Most of them use combined heating/cooking stoves older than 20 years in order to reduce their electricity bills

regardless of their education or income

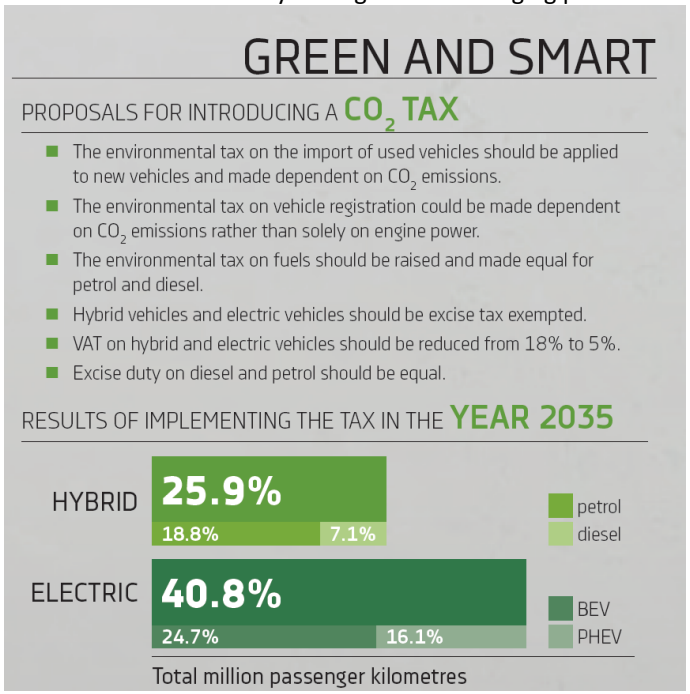
For comparison purposes, this percentage is much lower when it comes to single fathers i.e. 25%, they have newer stoves and do not use wood for cooking

POTENTIAL ACTIONS

Create financial supporting mechanisms to enable single mothers to connect to central heating or to change their heating stoves with more efficient ones

http://skopjesezagreva.mk/

2. Transport

The problem:	**What UNDP did differently:**	**What we find that we didn't know before?**	**The gender aspect**:
The fastest growing category in the energy sector (16.4% INCREASE of Greenhouse gas emissions between 2012-2014), with road transport being the biggest source (99%). Old vehicle fleet (65% of vehicles have been manufactured before 2002) with 46% of diesel vehicles. Road transport identified as significant contributor to the air quality problem in Skopje (app. 20%). Policies based on assumptions rather than on data (i.e. to reduce by half use of official governmental vehicles despite the fact that their exact numbers are not known nor the emissions reduction that can be achieved if the measure is implemented; introduce odd-even vehicles register plates ban, despite the fact that many families have several cars with both odd-even plates etc.). Purchasing hybrid/electric cars is not popular among Macedonian citizens despite the fact that hybrid-powered cars are excise tax exempted. Very strict access to the vehicle data sets.	Using COPERT, a software tool widely used in EU, to calculate air pollutant and greenhouse gas emissions from road transport. Based on vehicle fleet data, COPERT calculates climate change and air pollution emissions. Now every policy can be associated with the impact that will cause in terms of emission reductions both relevant to climate change and air quality. Vehicles data have been used to propose green and smart re-modelling of the national transport policies in order to reduce GHG emissions for 35% by 2035, as well as to develop a transport sustainable mobility case study for Skopje, the county's capital.	21.84% of the vehicles registered in the Skopje region are owned by companies. Only 13% registered owners of the national vehicle fleet are women, while this share is a bit higher in the Skopje region (21%). The challenge of climate change and its environmental, health and economic impacts is strongly connected to transport and unsustainable mobility behavior. Green and smart changes of transport polices can reshape the vehicle fleet in a medium term. Additional benefit is that larger penetration of electric vehicles can increase the percentage of renewables in the country through smart -charging policies. 	Smart and green transport policies need re-shaping in order to influence man that predominantly buy large diesel-powered vehicles. Additional analyses are needed to obtain more gender disaggregated aspects: do woman tend to buy newer/low -emission vehicles; how to target different target groups to buy new and low emitting vehicles etc.

3. Green jobs

The problem:	**What UNDP did differently:**	**What we find that we didn't know before?**	**The gender aspect**:
No green jobs definition adopted in the country, nor taken into consideration into the educational classification system. Many young people leave the country pursing jobs and prosperity.	Calculated green jobs potential from implementation of the climate change activities stipulated in the Nationally Determined Contributions and other relevant policy documents. These initial calculations started an avalanche on national level to identify and adopt green jobs definition and criteria (especially relevant to youth) and to revise the national jobs classification and curricula systems in order to reduce unemployment and create national green pool of experts.	It is estimated that over 6,200 green jobs could be created by 2035 as a result of energy efficiency measures in buildings and the low-carbon energy market (in renewable energy and gas) stipulated in the latest national climate change policy report. This makes the measures 'win-win-win' measures, since they generate economic, environmental and other additional benefits. Additionally, green jobs potential has been calculated for the household heating study (example 1)  	Being able to additionally calculate the percentage of green jobs disaggregated by gender, would significantly improve efficiency of implementation of the national climate change action plan. However, these calculations required more detailed and gender disaggregated data, that are currently not collected in the country. Therefore, adopting functional methodologies used by other countries is essential.

4. Girls in Tech

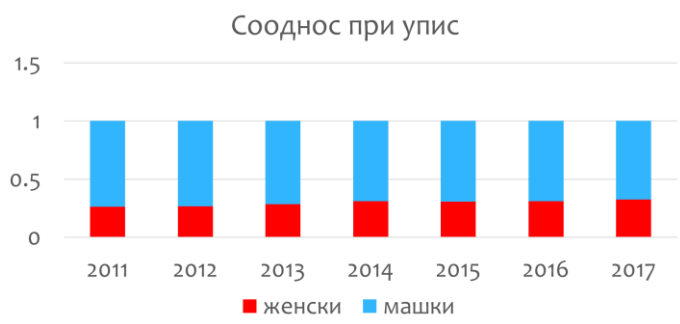
The problem:	**What we find that we didn't know before?**	**The gender aspect**:
While women tend to choose occupations more related to care and services, men are more involved in technical professions. On a global scale, a number of initiatives are undertaken, primarily aimed at attracting girls and women in technical sciences, but also towards their retention in those sectors. According to recent national research, women are insufficiently represented in the technical professions, (although there are no gender in Macedonia segregated data per occupation). On the other hand, these professions, in particular IT ones are the highest paid, thus contributing to general gender inequality in the labor market or unequal evaluation of labor. The representation of women on the faculties of Science, Technology, Engineering, Mathematics worldwide are significantly smaller. Republic of North Macedonia does not deviate from this example.	In our country, the ratio of enrolled students at the technical / mathematical faculties by gender is 1: 2 to 1: 3 in favor of males. However, girls interest in the technical faculties is gradually increasing from year to year, so unlike the initial 28% in 2011/12, the percentage of enrolled students at technical faculties grew to 33% in 2014/15. This percentage increases in advanced degrees: the woman enrolled in BSc programmes make up 56%, in MSc programmes 57% and in PhD programme 57%. Newer statistics on employment indicate that females made up 44% of persons employed in professional scientific and technical activities; 15% in electricity, gas, steam and air conditioning supply; 11% in water supply, sewerage, waste management and remediation activities; 13% in transportation and storage and 30% in information and communication related professions. These statistics may show that women are effectively represented in environmental sciences, including biodiversity and environmental management, yet, they are poorly represented in the energy, water, telecommunication, information technology and transport. Women have a broad body of knowledge, capacities and experiences in the use of technologies which are appropriate for their particular situation – i.e. agriculture, water use, etc., but this knowledge is often neither recognized or called upon, and often women are absent from technology transfer and information discussions.	Girls have surpassed boys in terms of achievements in natural science, although a small number of girls continue to be dealing with professions involving tech sciences. Additional research is needed to analyze gender disaggregated data in climate change relevant technology, research and innovation. Facilitating women's access to information and knowledge should be a high priority, through education in natural sciences and technology, as well as through innovative methods to reach women farmers at the community and household level. Women's enrolment in science and technology-related educational fields leading to careers in the climate-change related sectors is vital for gaining access to institutions and power structures that are involved in climate change policy making.

Example from the Faculty of Electrical Engineering (FINKI)

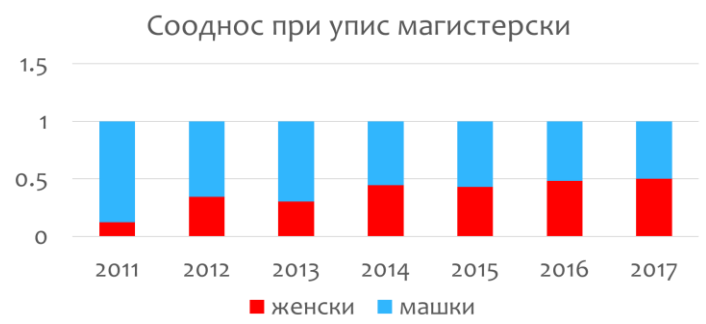
Blue – male; Red – female

Approximately 1/3 of the enrolled students on FINKI are girls (Graph 1) opposite the more equal gender distribution for an advanced IT degree (Graph 3). However, this percentage tends to equal by the time student graduate (Graph 2) or even surpass the 50% for a MSc degree (Graph 4). Coming to the employment data, the ratio between man/woman that are employed by FINKI as assistants/professors is 60%/40% , while the percentage of woman working in the faculty administration reaches more than 50% for woman.

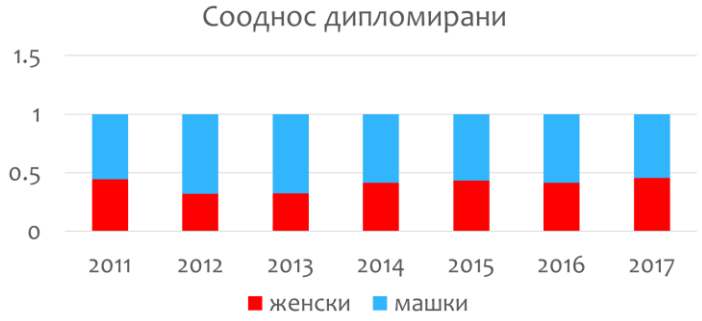
Graph 1.



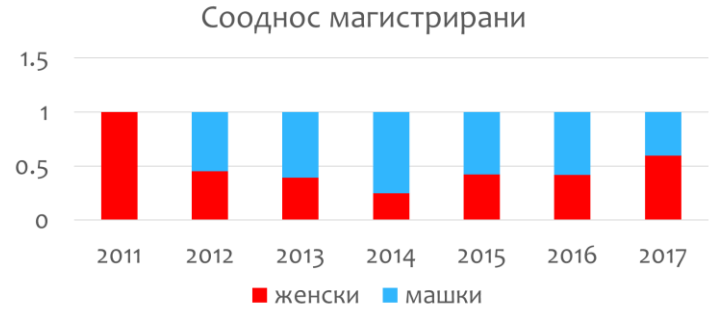
Graph 3.



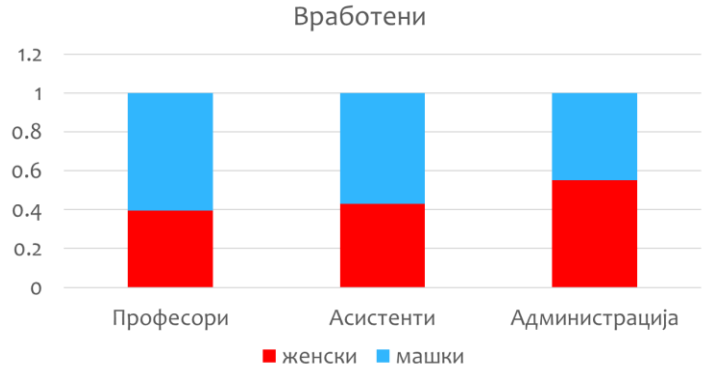
Graph 2.



Graph 4.



Graph 5.



5. Agriculture

The problem:	**What UNDP did differently:**	**What we find that we didn't know before?**	**The gender aspect**:
Agriculture is one of the most important sectors for the country's economy: responsible for 10% of the GDP (16% including agro-food) and employing 36% of the workforce. Official statistics indicate that men make up 57% of workers in agricultural holdings, while women 43%. Women's participation in agriculture in the country is characterized by lack of land ownership (only 16% of the land in the country (FAO, 2014)), little input into agricultural decision making, and lack of control over their time and labor. Women in the country also engage in unpaid agricultural activity more than men, and their tasks tend to relate to planting, picking, processing, and packaging; and they tend to be less supported by information and technology (FAO 2011). As a result of this situation, not only do women have little access to updated information and knowledge to improve their agricultural production, the knowledge they do have is lost or not taken into account.	In cooperation with the Ministry of Environment and Physical Planning of the Republic of North Macedonia, UNDP has supported the production of a documentary film called "After the Rain". The documentary portrays four women, aged between forty and eighty, who work as farmers in North Macedonia in a context of predominantly "male sector". It presents the adaptation efforts and coping strategies of these women in order to deal with the difficult conditions and the changes in climate.  	The lack of access of the women to the updated agricultural practices relevant to the changing climate, or lack of recognition of their knowledge means that agricultural choices can be made without taking into account all available knowledge of seed hardiness, resilience and ability to withstand different conditions. Rising energy and inputs costs make it difficult for both male and female farmers to make effective decisions on a long-term basis, consequently decreasing income from agricultural production. As a result, this frequently requires migration to an urban center or another region, causing hardship for the household as a whole. Nevertheless, the last testimonial from the documentary is a positive example showcasing how the combination of the local agricultural knowledge with updated modern techniques can bring more resilient products to the rapid and frequent change in conditions and climate such as drought and/or increased rain.	In order to increase climate change adaptation activities in agriculture, a specific focus should be put on the capacity development at all levels recognizing the different needs and roles of men and women. Closing the gap of women's participation and access to rural labor markets requires freeing women's time through labor saving technologies, raising women's human capital through education and elimination of discriminatory employment practices. Improving women's access to agricultural technologies can be facilitated through participatory gender inclusive research and technology development programs. Moreover, woman can play an important role as agents of capacity development in their communities, via networking and transfer of knowledge. Including gender perspective in agricultural policy development shall only result in increased opportunities for woman and men to fully benefit from this sector's economic and investment solutions, social learning, innovation and development processes.

Follow up activities in the next 3 years:

- Implementation of the gender and climate change action plan;
- Development of gender responsive 3rd Biennial Update Report and 4th National Communication on Climate Change;
- Development of at least 5 stories showcasing the importance of introducing the gender aspect to effectively design, implement and fund climate solutions.