# GENDER SENSITIVE DATA AND INDICATORS FOR PROJECT: ESTABLISHING TRANSPARENCY FRAMEWORK FOR THE REPUBLIC OF SERBIA

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# Content

# Introduction

The United Nations Development Programme (UNDP), acting as an implementing agency of the Global Environment Facility (GEF) has been providing assistance to the Serbian Government, namely Ministry of Environmental Protection, in the preparation and implementation of the GEF funded projects "Second Biennial Update Report and Third National Communication under the UNFCCC" (2BUR-3NC project) and "Establishing Transparency Framework for the Republic of Serbia" (CBIT project). Both projects will result in the improved system of monitoring, reporting and verification of the data and information that will be used by the Serbian Government to implement climate & energy legislation and feed in the reporting processes and obligations arising out of various international treaties, such as UNFCCC and EU commitments. The projects are also expected to accelerate Serbia's EU accession process in the area of environment, energy and climate change, contributing to creation of enabling policy and institutional environment for effective implementation of relevant EU Acquis and related national legal acts.

Through CBIT project, UNDP supports the Government of Serbia in mainstreaming and integrating climate change considerations into development strategies and sector-based policy frameworks by strengthening and sustaining efforts to monitor, report, and verify activities to address climate change.

**The objective** of this report is to contribute to the gender mainstreaming in reporting on climate change contributing to the strengthening the ability of the Republic of Serbia to participate actively in addressing the global environmental threat of climate change in gender responsive manner.

In order to achieve this objective, the task was to design the gender mainstreamed monitoring framework on climate change in Serbia with identification of key dimensions, indicators and data sources and to provide recommendation for further gender mainstreaming of designing and monitoring climate change policies.

Having in mind that gender mainstreaming of climate change policies is relative novelty in global policy framework, and it is very new for policy making in Serbia, the proposal of the framework presented in this report should be understood as a starting point and not as final solution. The initial exchange of ideas was conducted during the learning workshop in Belgrade gathering experts and representatives of CSOs in November 2019. Based on the proposed framework multi-stakeholder consultations should be conducted in the next phases, including the government representatives and experts in diverse areas as climate change requires strong interdisciplinary approach. These consultations should enable further development and refinement of the framework as well as validation in order to be recommended for full implementation.

# 1. Climate change responsibilities of Serbia based on key international conventions and the EU integration process

## 1.1 UN Conventions

As a response to the growing scientific evidence of the dangers posed by the anthropogenic interference with the climate system, the **United Nations Framework Convention on Climate Change** (UNFCCC[1]), an international environmental treaty, was adopted on 9 May 1992 and entered into force on 21 March 1994[2]. The UNFCCC constitutes the foundational climate agreement that has provided the platform for succeeding international climate agreements (the Kyoto Protocol (1997) and Paris Agreement (2015), among others)[3]. The intention of the UNFCCC was "to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system"[4]. The convention is ratified by 196 countries and, due to its nearly universal acceptance, enjoys broad legitimacy. Serbia ratified the Convention in 2001.

Another corner stone of the international climate policy is **the Kyoto Protocol**. As an extension to the UNFCCC, Kyoto Protocol was adopted in December 1997, in Kyoto, Japan, by the UNFCCC parties and entered into force on 16 February 2005. The Protocol is based on the principle of common but differentiated responsibilities of countries in accordance with their specific mitigation and adaptation capabilities as well as with their historical responsibility for the GHG emissions and climate change[5]. Since the UNFCCC was a non-obligatory agreement, the aim of the Kyoto Protocol was to establish legally binding limits on GHG emissions for industrialized countries (so called Annex I countries). On the other hand, Kyoto Protocol envisages various forms of support for climate change efforts in developing countries (e.g. grants, loans, establishment of the Global Environment Facility (GEF)). In order to assist countries in reduction the GHG emissions, three mechanisms were put in place: International Emissions Trading, Joint Implementation (JI) and the Clean Development Mechanism (CDM)[6].

Kyoto Protocol currently has 192 parties, Serbia being one of them since the ratification in September 2007. Serbia belongs to the group of developing countries (Non-Annex I Parties). As a non-Annex I country, Serbia was not imposed with a greenhouse gases emission reduction target in the first commitment period[7] 2008-2012. However, Serbia is dedicated to implementing measures and activities to achieve the objectives of the Convention[8]. In capacity of a non-Annex I Party, Serbia can use the Clean Development Mechanism (CDM)[9]. The Government of Serbia developed the "National Strategy for Incorporation of the Republic of Serbia into Clean Development Mechanism" in 2010 and seven CDM projects have been developed so far[10].

Although Serbia has no quantitative requirements regarding the reductions of GHG emissions, it is expected to report (Biennial Update Reports every two years, and National Communications every four years) on the GHG emissions and the activities undertook to implement the Convention. Serbia is also expected to integrate climate

[1] UNFCCC is also the name of the United Nations Secretariat in charge of supporting the operation of the Convention.
[2] http://www.klimatskepromene.rs/english/unclimate/unfccc/, accessed 16/12/2019
[3] https://www.sciencedirect.com/topics/earth-and-planetary-sciences/united-nations-framework-convention-on-climate-change, accessed 16/12/2019
[4] https://unfccc.int/resource/bigpicture/, accessed 16/12/2019
[5] http://www.klimatskepromene.rs/english/unclimate/kyoto-protocol/, accessed 16/12/2019
[6] http://www.klimatskepromene.rs/english/unclimate/kyoto-protocol/, accessed 16/12/2019
[7] The second commitment period of the Kyoto Protocol commenced in 2013 with the adoption of the Doha Amendment to the Kyoto Protocol (December, 2012). Parties committed to reduce GHG emissions by at least 18 % percent below the 1990 levels until 2020. The Doha Amendment has not yet entered into force. (http://www.klimatskepromene.rs/english/unclimate/kyoto-protocol/, accessed 16/12/2019)
[8] http://www.klimatskepromene.rs/english/unclimate/kyoto-protocol/, accessed 16/12/2019
[9] http://www.klimatskepromene.rs/english/unclimate/kyoto-protocol/, accessed 16/12/2019
[10] http://www.klimatskepromene.rs/english/unclimate/kyoto-protocol/, accessed 16/12/2019

change into the broader development planning process in the country[11]. The Initial National Communication (INC) of the Republic of Serbia was published in 2010 and the Second National Communication was published in 2017. Serbia's Second Biennial Update Report and Third National Communication is currently being prepared with technical support of UNDP and financial support by the GEF.

In 2015 a final building block of the present-day international climate policy, the **Paris Agreement** was adopted and entered into force on 4 November 2016. This agreement is designed to govern emission reductions from 2020 onwards, and it is quite ambitious since it lowers the target from 2°C to 1.5°C. Paris Agreement should be regarded as a separate instrument under the UNFCCC rather than as an amendment of the Kyoto Protocol. Serbia ratified the Paris Agreement in August 2017.

## 1.2 Climate change and the EU Integration of Serbia

Serbia applied for the EU membership in December 2009 and was granted the EU candidate country status in March 2012. Serbia's accession negotiations formally started in January 2014. Thus far, 18 out of 35 chapters have been opened of which 2 are provisionally closed. Considering the environment and climate change, the screening exercise for Chapter 27 – Environment took place in 2014 and the screening report was adopted by the Council in December 2016, however, still without an opening benchmark.[12]

Considering the EU legal framework and policies in the field of climate change, sustainable development and environmental protection, Serbia has achieved some level of preparation. Limited progress was made in alignment with the *acquis* and on strategic planning (Serbia Report, 2019:84[13]). However, according to the latest Report, in upcoming year, additional effort should be made in further alignment with the acquis. It is particularly important that Serbia: "1. enhance administrative and financial capacity of the public central and local administration authorities including the Environmental Protection Agency, operationalizing and adequately resourcing the Green Fund and further improving inter-institutional coordination, in particular between central and local levels; 2. intensify implementation and enforcement work, such as closing non-compliant landfills, investing in waste reduction, separation and recycling, reinforcing air quality monitoring, advancing river basin management and preparing for Natura 2000; 3. implement the Paris Agreement, including by adopting a comprehensive climate strategy and law, consistent with the EU 2030 framework for climate and energy policies and well-integrated into all relevant sectors and develop a National Energy and Climate Plan, in line with Energy Community obligations" (Serbia Report, 2019:85).

Focusing on the climate change, according to the *Report* (2019:87), Serbia has also achieved a certain level of preparation. In May 2017 Serbia ratified the Paris Agreement; in October 2017 the Second communication was submitted to the UNFCCC; in November 2017 the legislation on greenhouse gas emissions monitoring, reporting and verification in line with the EU trading system was finalized and the national cross-sectoral strategy on climate change is being developed. The Climate Change Council (an advisory body of the Government) was established in 2014. Draft Climate Change Law is prepared and should be adopted in the near future. It should transpose relevant EU acquis and establish the ground for fulfillment of obligations towards UNFCCC.

However, as regards the implementation, it is considered to be at a very early stage. A national cross-sectoral strategy on climate change, aligned with the EU 2030 framework for climate and energy policies, is still waiting to be adopted. Moreover, draft Law on climate change is still waiting to be adopted. Additionally, legislation on greenhouse gas emissions monitoring, reporting and verification in line with the EU emissions trading system

[11] http://www.klimatskepromene.rs/english/unclimate/reporting/, accessed 13/12/2019.
[12] https://ec.europa.eu/environment/enlarg/candidates.htm, accessed 13/12/2019.
[13] Serbia 2019 Report - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 2019, Communication on EU Enlargement Policy available at: https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-serbia-report.pdf, accessed 13/12/2019.

and Effort Sharing Regulation was finalized in 2017 but adoption is pending (Serbia Report, 2019:87). The Report concludes that the strengthening of administrative and technical capacities to align with climate acquis is much needed, together with the awareness-raising activities (pp. 87).[14]

## 2. Gender and Climate Change

Long-term gradual climate change, as well as the increasing incidence of extreme weather events, will significantly affect every aspect of human living conditions. Although the local and regional climate-related socio-environmental changes are difficult to predict accurately, it is clear that a complex mixture of shifts and alternations will take place, demanding from both the citizens and the governments to cope and adapt.

Broadly speaking, **climate change mitigation** refers to efforts to reduce and/or prevent the emission of greenhouse gases by relying on the following approaches:

1) Technological – the introduction of new technological solutions (e.g. renewable energy sources);
2) Transformation towards more environmentally friendly and climate aware management practices;
3) Development of climate policies and legislation; and
4) Changes in consumers' behavior.

Mitigation needs to have a cross-sectoral approach including agriculture, forestry, fishing, transport, tourism, infrastructure, industry, foreign investment and business, housing and land management, and waste management.

**Climate change adaptation**, on the other hand, assumes finding the best ways (policy measures, legal framework, financial mechanisms, management procedures, consumption practices) to cope with changes that have already happened, reducing risks associated with severe weather events, and incorporating different technologies to avoid additional negative climate change impacts.[15]

The existing body of literature indicates that climate change exacerbates social inequalities and that the impact of climate change will not be equally distributed within the population. It is well documented[16] that the climate change-related risks, as well as the mitigation and adaptation capacities, greatly depend on one's socio-economic status, citizenship, gender, age, race and disabilities. The poor and disempowered are more vulnerable to climate change because they lack access to relevant socio-economic and political resources needed for adaptation to disruptions in the immediate environment. Women are at a higher risk of poverty and have less political and socio-economic power than men[17]. Although both men and women will suffer negative consequences of climate change, compounded social inequalities put women in a disadvantageous position. Women in developing countries are particularly vulnerable to climate change since they are often poor and are usually the primary users and managers of natural resources[18] . It is also worth noting that women in the Global South will be affected more by climate change than men in those countries, while men in the North pollute more than women[19].

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[14] https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20180417-serbia-report.pdf, accessed 13/12/2019.

[15] https://www.undp.org/content/dam/undp/library/gender/UNDP%20Gender%20Responsive%20National%20Communications%20Toolkit.pdf, accessed 15/12/2019.

[16] Demetriades, J., Esplen, E. (2008) The Gender Dimensions of Poverty and Climate Change Adaptation, *IDS Bulletin* 39(4):24-31; Djoudi, H., Brockhaus, M. (2011) Is adaptation to climate change gender neutral? Lessons from communities dependent on livestock and forests in northern Mali, *International Forestry Review* 13(2): 123-135;

[17] https://www.undp.org/content/dam/undp/library/gender/UNDP%20Gender%20Responsive%20National%20Communications%20Toolkit.pdf , accessed 15/12/2019.

[18] Nelson, V., Meadows, K., Cannon, T., Morton, J., Martin, A. (2002) Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations, *Gender and Development* 10(2):51-59.

[19] Arora-Jonson, S. (2011) Virtue and vulnerability: Discourses on women, gender and climate change, *Global Environmental Change* 21: 744–751; Demetriades, J., Esplen, E. (2008) The Gender Dimensions of Poverty and Climate Change Adaptation, *IDS Bulletin* 39(4):24-31.

Women's unequal participation in decision-making processes (lower percent of women in decision-making institutions, bodies and groups at all levels) and labor markets (unequal status in the workforce, low-wage labor, being more likely to be employed in the informal sector and small enterprises, and having unequal access to land and other natural resources compared to men, etc.), significantly prevent them from fully contributing to climate-related planning, policy-making and implementation[20]. Therefore, women should be supported and empowered to become fully and equally included in the labor market as well as in the decision-making processes related to climate change.

Men and women are in different positions regarding the requirements for climate change mitigation (e.g. different levels of GHG emissions and willingness to change consumption patterns; knowledge and concern about climate change; participation in decision-making processes etc.) and adaptation (different needs, e.g. health protection, socio-economic support, different roles in adaptation, disaster risk reduction, and climate-related investments, etc.). Building evidence about men's and women's risk factors, relative vulnerability and the contribution to climate change requires collecting sex-disaggregated data, both qualitative and quantitative, and the employment of the gender-sensitive analysis[21].

Despite a growing body of academic research indicating climate change related gender inequalities and advocacy work of women groups and NGOs, the climate gender nexus has been neglected in development policy-making, and "gender-blindness" still affects development agencies and governments around the globe dealing with climate change[22]. One of the notable advancements in the field was the adoption of the Lima Work Programme on Gender (LWPG) that recognizes that all aspects of climate change have gender dimensions and that it is important to involve women and men equally in UNFCCC processes and in the development and implementation of national climate policies[23].

The LWPG was introduced at the Conference of Parties in 2014 (COP20) and enhanced in 2016 (COP22) to achieve gender-responsive climate policies and advance gender balance in climate negotiations. The Gender Action Plan (GAP) was established at COP 23 under the auspices of UNFCCC and LWPG to further advance gender-responsive climate policy and the mainstreaming of the gender perspective in the implementation of the Convention and in the work of all stakeholders at all levels[24].

The Gender Action Plan has five priority areas[25]:

1. *Capacity-building, knowledge sharing and communication,* with an intention of the systematic integration of gender considerations in the thematic areas under the Convention and the Paris Agreement and in relevant policies, programs and projects;

2. *Gender balance, participation and women's leadership* focused on achieving full, equal and meaningful participation of women in the UNFCCC process;

3. *Coherence* (in UNFCCC, across UN) – aiming at better integration of gender considerations within the work of UNFCCC, the Secretariat and other United Nation bodies and stakeholders, with the purpose of consistent implementation of gender-related mandates and activities



[20] https://unfccc.int/gender, accessed 15/12/2019; Blaikie, P., Cannon, T., Davis, I., Wisner, B. (1994) *At Risk: Natural Hazards, People's Vulnerability and Disasters*, London: Routledge; Enarson, E. (2000) Gender and Natural Disasters, *Working Paper* 1, Recovery and Reconstruction Department, Geneva; Nelson, V., Meadows, K., Cannon, T., Morton, J., Martin, A. (2002) Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations, *Gender and Development* 10(2):51-59.
[21] https://www.undp.org/content/dam/undp/library/gender/UNDP%20Gender%20Responsive%20National%20Communications%20Toolkit.pdf, accessed 15/12/2019.
[22] Nelson, V., Meadows, K., Cannon, T., Morton, J., Martin, A. (2002) Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations, *Gender and Development* 10(2):51-59.
[23] https://unfccc.int/gender , accessed 15/12/2019.
[24] https://unfccc.int/news/bonn-conference-urges-more-gender-responsive-climate-action, accessed 15/12/2019.
[25] https://unfccc.int/news/5-reasons-why-climate-action-needs-women, accessed 15/12/2019.

4. *Gender-responsive implementation and means of implementation,* with an aim to ensure the respect, promotion, and consideration of gender equality and the empowerment of women in the implementation of the Convention and the Paris Agreement;

5. *Monitoring and reporting* - to improve tracking in relation to the implementation of and reporting on gender-related mandates under the UNFCCC.

# 3. Proposal of monitoring framework

Monitoring climate change in Serbia but as well world-wide, often shows lack of human-centered perspective. The attention is payed to the technologies, gases, but the measures of clearer impact of people on the situation and impact on social groups differently equipped with resources and capacities to adapt to the climate change or address the consequences is not sufficiently in focus at least in the regular reporting processes. The task of proposing monitoring framework that is gender sensitive was faced with the additional step to bring more people in the focus in general.

Monitoring framework covers seven broad areas:

1. Access to resources
2. Participation in decision making and climate change policies
3. Economy and work
4. Consumption and livelihoods
5. Education
6. Health
7. Climate change knowledge, attitudes and behaviour

Each area is monitored in aspects of mitigation and adaptation along several dimensions based on the indicators. In case of some aspects the importance of certain dimensions is recognized (i.e. water pollution), but indicators are not defined yet as they require additional consultations and expertise. Some indicators require further refinement depending on the available data, while some will probably have to be replaced by proxy indicators due to the lack of appropriate data. Additional indicators might be introduced in the next phases if their importance is recognized based on more specific expertise.

## 3.1 Access to resources

The access to resources is one of the key aspects in mitigation and adaptation to climate change. On mitigation side, it is important to identify who are the main actors contributing to the resource depletion, pollution or degradation and if there is any recognizable gender specific contribution. On the side of adaptation, it is important to recognize gendered patterns of access to resources as this defines the choices and available strategies for adaptation, as well as impact on wellbeing climate change has. It is important to identify are there gender patterns in land degradation. For example, knowing that decisions on agricultural production technologies, or broader land use are mainly made by men, it is important to monitor the links between land ownership and agricultural practices. On the other hand, land devastation might impact the access to land which is already much weaker in case of women than men as women own around quarter of all land owned by individual persons.[26] Similarly, if climate change affects the quantity and distribution of safe drinkable water, then access to safe drinkable water should be monitored with additional insights in potential differences between households headed by men and

[26] Data obtained from Republic Geodetic Office for the preparation of SOS Network Vojvodina shadow report to CEDAW committee.

women as they might differently make decisions on use of water or might have different opportunities to access clean water since households headed by women are usually poorer.

In regard to energy, different social position of women and men and their impact on policies, but also on adaptation side, the differences in economic position and access to different types of energy are linked with gendered energy production and consumption patterns. Energy poverty might impact more generally poorer female headed households[27], and due to the lower economic position women might have less opportunities to invest in renewable energies for household consumption. On mitigation side, less participation of women in decision making and management of key national resources, including energy lead to unbalanced responsibilities for use of fuel for production of energy contributing to pollution and climate change.

Access to financial resources impacts the ability to implement climate change actions on mitigation side, while in regard to adaptation impacts the ability of men and women to increase resilience to climate change or to invest in more environmentally friendly consumption patterns.

Table 1: Dimensions and indicators for monitoring climate change related access to resources

| **Access to resources** | | | | |
|---|---|---|---|---|
| **Mitigation** | | **Adaptation** | | **Data sources** |
| Dimension | Indicator | Dimension | Indicators | |
| **Land** | | | | |
| Land degradation | Percentage of land surface lost to degradation processes during referent period by gender of land owners | Access to land | Agricultural land by type and gender of owner | Agricultural census, Survey on farms, data of Republic Geodetic Office |
| **Water** | | | | |
| Water supply | TBD | Access to water | Access to safe drinkable water disaggregated by the gender of head of the household | MICS |
| **Air** | | | | |
| Air pollution | Major air polluters by region and type | Access to clean air | a) Air quality Index<br>b) Population living in most polluted areas by gender and age | World's air pollution: Real time Air Quality Index[28] , Statistical Office of the Republic of Serbia (SORS), population statistics |
| **Energy** | | | | |
| Energy contribution to pollution | Share of energy fuels in total primary energy supply, total final consumption and electricity | Access to energy | a) Low absolute energy expenditure as share of households whose absolute energy expenditure is | Ministry of Mining and Energy, Statistical Office of the Republic of Serbia, statistics on energy, Statistics on Income and Living condition |

[27] UNDP, https://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/PB4-AP-Gender-and-Energy.pdf
[28] https://waqi.info/#/c/46.838/14.406/7.1z

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| | generation and generating capacity | | below half the national median, by gender of household head<br>b) Share of households not able to keep home adequately warm, by gender of household head | |
| Renewable energy | Share of renewable energy in total primary energy supply, total final consumption and electricity generation and generating capacity | Access to renewable energy | Share of households with access to renewable energy, by gender of household head | Ministry of Mining and Energy, Statistical Office of the Republic of Serbia, statistics on energy, Statistics on Income and Living condition |
| **Financial resources** | | | | |
| Funding climate change projects | a) The amount of budget finances invested in climate change projects<br>b) The amount of international assistance funds invested in climate change projects | Access to financial markets and resources | a) Percentage of 18+ women and men with personal bank account<br>b) Percentage of 18+ men and women with bank credit, by type of credit | Ministry of finance, Ministry of Mining and Energy |

## 3.2 Participation in decision making and climate change policies

Research on the UN negotiations on climate change shows that gender equality in decision-making processes is very important (Villagrasa, 2002)[29]. The argument in favour of women equitable participation in climate change negotiations and decision-making (planning, implementation and monitoring) is supported by the findings of several research demonstrating that countries with more women in parliaments are more likely to protect nature, ratify environmental treaties and have more developed environmental policies and implementation mechanisms (UNDP, 2012)[30]. On the other hand, countries with high levels of gender inequality in the political arena have higher rates of environmental degradation (e.g. forest depletion, air pollution etc.)[31].

The general participation of women in different branches of power at national, regional and local levels are important as higher percentages of women in legislative bodies increases their voice and participation in the

[29] Villagrasa, D. (2002) Kyoto protocol negotiations: reflections on the role of women, *Gender and Development* 10(2): 40–44.
[30] UNDP (2012) Human Development Report 2011, Sustainability and Equity: A Better Future for All.
[31] https://www.undp.org/content/dam/undp/library/gender/UNDP%20Gender%20Responsive%20National%20Communications%20Toolkit.pdf, accessed 15/12/2019.

environmental arena. Also, higher percentages of women in leadership and decision-making positions indicate women's ability to participate in CC mitigation and adaptation. Participation of women in the local decision-making and administrative bodies is very important for developing tailor-made mitigation and adaptation plans and strategies for the local communities. Exclusion of women from the decision-making processes at the local level have caused a number of problems in communities affected by natural disasters (Baćanović, 2014[32]).

Furthermore, equal participation of women in delegations to the Conferences of Parties (COPs) delegations ensure inclusion of specific women perspectives and needs related to climate change. Higher percentages of women in leadership and decision-making positions in the environmental bodies and institutions indicate women's ability to participate in environmental preservation/sustainability and is linked to positive environmental changes. The same is for EU negotiations where participation of women is important in regard to the Chapter 27. Important aspect is use of gender sensitive language and terminology, so one indicator is dedicated to monitor the use of gender sensitive terminology in key national documents related to climate change.

The indicators in this area are the same for mitigation and adaptation aspects, as presented in the table 2.

Table 2: Dimensions and indicators for monitoring climate change related decision making

| **Political participation and climate change decision making** | | |
|---|---|---|
| **Mitigation and Adaptation** | | **Data sources** |
| Dimension | Indicator | |
| **Legislative Power** | | |
| Participation of women in legislative power | Share of women among members of National Assembly | National Assembly's official website |
| **Executive Power** | | |
| Participation of women in executive power | Share of women in the national government | Government portal. |
| **Local governance** | | |
| Participation of women in local parliaments | Share of women among members of local parliaments | SORS, statistics on regions and municipalities |
| Participation of women in top local governance positions | Share of women among mayors and presidents of municipalities | SORS, statistics on regions and municipalities |
| **Participation in delegations and relevant bodies** | | |
| Participation in delegations to the Conferences of Parties (COPs) | Share of women in the delegation to the COPs | List of Participants published by the UNFCCC |
| Participation in climate change and environment bodies and institutions | Share of women in Climate Change Council of the Republic of Serbia | Government |
| Participation in negotiations on chapter 27 in EU accession process | Percentage of women in the national delegation - Chapter 27 | Ministry of European Integration, official website of the Negotiation group for the Chapter 27 |
| **Gender sensitive climate change terminology** | | |

[32] Baćanović, V. (2014) *Rodna analiza uticaja poplava u Srbiji u 2014. godini*, Beograd: Fiducia 011 Print.

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|---|---|---|
| Gender sensitive climate change terminology | Inclusion of gender terminology and gender-related action in UNFCCC National Adaptation Programmes for Action (NAPAs) and National Communication (NCs) | Lexical analysis of relevant documents National Adaptation Programmes, National Communications etc. |

## 3.3 Economy and work

Economy and labour market are gender segregated. It is important to monitor how men and women in role of entrepreneurs and investors impact the climate change through economic activity in different sectors of the economy. Gender roles are defined by social norms that drive men and women towards different sectors of the economy. The major polluting industries are linked with high profit turns and probably more attractive to men, or entrance into this business is not equally open to women. On the other hand it is important to monitor economic engagement of women and men in green economy.

The measures taken in order to address climate change can differently impact economic sectors and labour force employed in these sectors will be as well impacted to a variable extent. Particularly persons in vulnerable or precarious employment could be impacted by climate change mitigation measures. For this reason it is important to monitor and plan measures providing alternative solutions to the labour force that will be negatively impacted by interventions. At the same time, data on vulnerable employment indicates which are the groups that could have low potential for adaptation and resilience due to the inadequate integration in the labour market and weak socio-economic position.

Table 3: Dimensions and indicators for monitoring climate change related to economy and employment

| **Economy and work** | | | | |
|---|---|---|---|---|
| **Mitigation** | | **Adaptation** | | **Data sources** |
| Dimension | Indicator | Dimension | Indicators | |
| **General employment** | | | | |
| | | Participation in the labour market | a) Activity rate for population 15+ by gender<br>b) Employment rate for population 15+ by gender<br>c) Unemployment rate for population 15+ by gender | SORS, Labour Force Survey |
| | | Vulenrable, precarious employment | a) Share of informally employed in total employment, by gender<br>b) Share of self-employed among employed men and women<br>c) Share of persons with low earnings | SORS, Labour Force Survey, statistics on earnings |

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|---|---|---|---|---|
| | | | among employed women and men | |
| | | Economic power | Share of women among top managers in public and private companies | SORS, Labour Force Survey |
| **Major polluting industries** | | | | |
| Investments in major polluting industries | Employers and investors in major polluting industries by gender | Employment in major polluting industries | Employees in major polluting industries by gender and age | Agency for Business Records (ABR), SORS, Structural business statistics, Labour Force Survey |
| **Green economy** | | | | |
| Entrepreneurs driving green economy | Percentage of women among entrepreneurs in green economy | Employment in green economy | Employees in green economy by gender and age | Agency for Business Records (ABR), SORS, Structural business statistics, Labour Force Survey |
| **Energy** | | | | |
| Entrepreneurs in non-renewable energy sector | Percentage of women among entrepreneurs in non-renewable energy sector | Employment in non-renewable energy sector | Employees in non-renewable energy sector by gender and age | Agency for Business Records (ABR), SORS, Structural business statistics, Labour Force Survey |
| Entrepreneurs in renewable energies sector | Percentage of women among entrepreneurs in renewable energy sector | Employment in renewable energy sector | Employees in non-renewable energy sector by gender and age | Agency for Business Records (ABR), SORS, Structural business statistics, Labour Force Survey |
| **Transport** | | | | |
| Entrepreneurs in transport sector | Percentage of women among entrepreneurs in transport sector | Employment in transport sector | Employees in transport sector by gender and age | Agency for Business Records (ABR), SORS, Structural business statistics, Labour Force Survey |
| **Agriculture** | | | | |
| Contribution of agricultural practices to climate change | Share of men and women among farm managers implementing climate change harmful practices | Employment in agricultural sector | a) Share of women among family farm managers<br>b) Share of women among family helping members on family farms | Ministry of Agriculture, Ministry of Finance – Treasury Directorate |
| Support measures for climate change friendly agriculture practices | Farms beneficiaries of support measures for climate change friendly agriculture | Employment in agricultural sector | Share of women beneficiaries of support measures | Ministry of Agriculture, Ministry of Finance – Treasury Directorate |

| | | | | |
|---|---|---|---|---|
| | practices by gender of farm manager | | | |

## 3.4 Consumption and livelihoods

The interaction between consumption and climate change is mediated by the socio-economic position of households and individuals and their opportunities to provide sustainable livelihoods. On one hand the economic assets, knowledge, cultural practices influence the consumption patterns that have impact on environment. At the same time their available resources shape the opportunities to adopt more environmentally friendly practices (i.e. through use of renewable energy), and environmental education and attitudes guide the choices in consumption, waste disposal, use of natural resources in everyday life. As many examples around the world show, more dependent livelihoods on natural resources are, higher is vulnerability to climate change and lower the opportunity to provide sustainable livelihoods[33].

Having said in mind, monitoring poverty and social exclusion is important aspect of addressing climate change for both mitigation and adaptation purposes. The energy consumption patterns are one of the key aspects of household consumption and often more under control of women who are mainly responsible for household work and family care and have to carry the burden of saving in resource and financially stretched households.

Women's and men's knowledge, skills and experience important for climate change mitigation and adaptation tend to be valued differently. Women's skills, expertise and knowledge of household management, caregiving, health and food security are often considered to be 'natural' attributes, and of lesser value because they are acquired as a process of socialization and cultural learning. On the other hand, men's skills and expertise (for example in construction, rescuing, operating machines and vehicles etc.) are perceived as more valuable since they are 'acquired' through the process of education / employment. Consequently, in climate change adaptation, there is a risk that women are less likely than men to be recognized as key actors with knowledge assets and that their knowledge and skills will remain undocumented. Conducting focus group interviews (women groups and mixed groups) with population that have a fairly recent direct experience of natural disasters: floods, wildfires, severe droughts, earthquakes is recommended. The aim of this research would be to explore gender differences and gaps in relevant skills, knowledge, information access, decision-making, management, care-giving, paid and unpaid labour etc. during and in the aftermath of extreme weather events.

Mobility patterns are gendered, and the impact of use of personal cars, public transport and transport means that are not polluting the environment show clear gender patterns with men driving cars more than women and women using more public transport.[34]

Table 4: Dimensions and indicators for monitoring climate change related to livelihoods and consumption

| **Livelihood and consumption** | | | | |
|---|---|---|---|---|
| **Mitigation** | | **Adaptation** | | **Data sources** |
| Dimension | Indicator | Dimension | Indicators | |
| **Poverty and social exclusion** | | | | |
| | | Risks of poverty and social exclusion | a) At risk of poverty rate by gender (SILC indicator) | SORS, SILC |

[33] The International Institute for Sustainable Development (2003) *Livelihoods and Climate Change,* accessed at https://www.iisd.org/pdf/2003/natres_livelihoods_cc.pdf

[34] Dornier, SeConS (forthcoming) *Gender Equality in Transport Sector,* Coordination Body for Gender Equality, Belgrade.

| | | | | |
|---|---|---|---|---|
| | | | b) at risk of poverty and social exclusion rate by gender (SILC indicator) | |
| | | Poverty of female headed households | a) At risk of poverty rate of female headed households<br>b) At risk of poverty rate of single mother households<br>c) At risk of poverty rate of households of single women old 65+ | SORS, SILC |
| **Energy consumption patterns** | | | | |
| Consumption of solid fuel energy | Percentage of households using solid fuels by gender of household head | Energy consumption and wellbeing | Households using solid fuels by gender of household head and wealth quintiles | SORS, UNICEF, MICS |
| Renewable energy consumption patterns | Percentage of households using renewable energy by gender of household head | Renewable energy consumption and wellbeing | Households using renewable energy by gender of household head and wealth quintiles | SORS, UNICEF, MICS |
| Energy efficiency | Percentage of energy efficient houses by gender of house owner | | | Ministry of mining and energy |
| Energy saving | Frequency of doing things to reduce household energy consumption by gender | | | CESID research |
| **Transport and mobility patterns** | | | | |
| Car ownership | Car owners by gender | | | Ministry of Interior, Survey on gender and transport, CBGE |
| Public transport | Percentage of women and men relying on public transportation | | | Ministry of Interior, Survey on gender and transport, CBGE |
| Using bicycles, walk, electric scooters, etc. | Percentage of women and men driving bicycles or going on foot to work | | | Ministry of Interior, Survey on gender and transport, CBGE |
| **Household work** | | | | |

| | | | | |
|---|---|---|---|---|
| | | Unpaid household work and family care | Average number of hours spent in domestic unpaid work and family care | SORS, Time Use Survey |

## 3.5 Education

The education is important aspect of climate change monitoring and interventions in various ways. Generally higher level of education is linked with more informed participation in the society and higher awareness on impact human actions have on climate and choice of strategies in responding to challenges related to climate change in everyday life. Therefore, general level of knowledge of population and literacy are important to monitor. In addition to that, use of internet is another indicator that could be useful as information available on internet and smart phone applications are important resources of information and channels of civic actions. Use of applications such as 'Airvisual' which enables real-time monitoring air quality are tools for citizens to be better informed on their environment and this depends on digital and internet literacy. Finally, high experts knowledge on climate change is important asset for a country to be able to develop adequate policies, instruments, mechanisms to implement interventions that will lead to effective mitigation and adaptation to climate change.

Table 5: Dimensions and indicators for monitoring climate change related to education

| **Education** | | | | |
|---|---|---|---|---|
| **Mitigation** | | **Adaptation** | | **Data sources** |
| Dimension | Indicator | Dimension | Indicators | |
| **Use of knowledge for mitigation** | | | | |
| Professional knowledge for mitigation | Percentage of women and men with degrees in Science, Engineering, Agriculture, Forestry, Environmental protection, Environmental Law | | | SORS, statistics on high education |
| **Secondary education** | | | | |
| Formal secondary education on climate change | Number of students enrolled in secondary schools with area of education relevant for CC, by gender | | | SORS, statistics on education |
| Low educational achievements | Percentage of men and women 15+ with only primary education | Low educational achievements | Percentage of men and women 15+ with only primary education | SORS, statistics on education |
| **Literacy** | | | | |

| | | | | |
|---|---|---|---|---|
| Literacy | Literacy rate for women and men | Literacy | Literacy rate for women and men | SORS, statistics on education, population census, MICS |
| Digital literacy and use of Internet | Percentage of persons regularly using internet among men and women | Digital literacy and use of Internet | Percentage of persons regularly using internet among men and women | SORS, Use of ICT in Serbia |

## 3.6 Health

The monitoring framework for health aspect should be further developed in the next phases. This preliminary proposal recognizes the importance of several dimensions that should be further elaborated through sets of indicators. First is related to the mortality related to the natural disasters as well as to the climate change consequences that are not manifested through abrupt of disaster. Secondly, climate change morbidity should be more clearly recognized and monitored. Thirdly, the impact climate change has on sexual and reproductive health of population should be further discussed and elaborated within the monitoring framework.

Table 6: Dimensions and indicators for monitoring climate change related to Health

| **Health** | | | | |
|---|---|---|---|---|
| **Mitigation** | | **Adaptation** | | **Data sources** |
| Dimension | Indicator | Dimension | Indicators | |
| **Mortality** | | | | |
| System for protection and reaction to natural disasters | Established and effective system | Mortality related to CC | Percentage of persons died in the natural disaster events, by gender | Ministry of Interior, Ministry of Health |
| Monitoring of communicable and non-communicable diseases related to CC | Monitoring reports of the impact on CC on mortality by communicable and non-communicable diseases | Mortality rate related to CC | Percentage of persons died by diseases related to CC | Ministry of Health, Institute for public health, SORS |
| **Morbidity** | | | | |
| Prevention of communicable and non-communicable diseases related to CC | Number and type of programes for prevention of the impact of CC on morbidity caused by communicable and non-communicable diseases | Non-communicable diseases related to CC | Morbidity rate of non-communicable diseases related to CC | Institute for public health, SORS |
| **Sexual and reproductive health** | | | | |
| Monitoring of impact of CC to sexual and | Monitoring reports of the | Miscarriage | Miscarriage rate | Ministry of Health, Institute for public health |

| | | | | |
|---|---|---|---|---|
| reproductive health | impact on CC on SRH | | | |
| | | Premature child birth | Rate of premature child births | Institute for public health, SORS |

## 3.7 Climate change knowledge, attitudes and behaviours

A growing body of literature indicates gender-dependent differences in citizens' attitudes, knowledge, concern and behavior in relation to climate change. Although women tend to convey greater scientific knowledge of climate change, they underestimate their climate change knowledge more than men. Moreover, women express greater concern about climate change / environmental risks. However, since women and men have different gender roles they tend to worry about different aspects of climate change. For instance, women express more concern about health impacts while men worry more about a lack of employment caused by extreme natural events[35]. Other research finds women to be generally more open to changing their climate related habits compared to men[36]. Women use transportation in a more environmentally friendly fashion and express greater concern for the environmental impacts of car use and show a greater acceptance of a reduction in car use[37]. Some research suggests that women and men in single households use energy in differently, indicating a need for gender-sensitive policy to reduce the use of energy[38]. Several studies show that women engage in more environmentally friendly voluntary behaviours in domestic sphere, but are not more engaged as activists on a public level[39].

The European Social Survey module Public attitudes to climate change (ESS8, 2016) offers a good inventory of questions that could be used to create CC attitudes and behavior indicators. Unfortunately, ESS comparative data for Serbia are not available, but CESID 2019 and European Values Study (2017) research offers some data that can be used.

Table 7: Dimensions and indicators for monitoring climate change related to knowledge, attitudes and behaviours

| **Knowledge, attitudes and behaviours** | | | | |
|---|---|---|---|---|
| **Mitigation** | | **Adaptation** | | **Data sources** |
| Dimension | Indicator | Dimension | Indicators | |
| **Energy efficient consumption** | | | | |
| Energy efficient electrical appliances | Likelihood of buying energy efficient large electrical home | | | CESID research |

[35] McCright, A. M. (2010) *The effects of gender on climate change knowledge and concern in the American public*, Popul. Environ. 32:66-87; Zelezny, L.C., Chua, P.P., and Aldrich, C., 2000. Elaborating on gender differences in environmentalism, *Journal of Social Issues*, 56 (3), 443–457; Davidsson, D. and Freudenberg, W. (1996) Gender and environmental risk concerns: a review and analysis of available research, *Environment and Behaviour* 28(2):302–339.

[36] Dymen, C., Andersson, M., Langlais, R. (2013) Gendered dimensions of climate change response in Swedish municipalities, *Local Environment* 18(9):1066-1078. https://www.ladcyklar.se/wp-content/uploads/2010/06/Local-Environment.pdf

[37] Polk, M. (2003) Are women potentially more accommodating than men to a sustainable transportation system in Sweden? *Transportation Research Part D: Transport and Environment* 8 (2):75–95.

[38] Carlsson-Kanyama and Raty, 2008 according to Dymen et al., 2013

[39] Hunter, L., Hatch, A., and Johnson, A. (2004) Cross-national gender variations in environmental behaviours, *Social Science Quarterly* 85(3): 677–694; O'Connor, R.E., Bord, R.J., and Fisher, A. (1999) Risk perceptions, general environmental beliefs, and willingness to address climate change, *Risk Analysis* 19(3):461–471.

| | | | | |
|---|---|---|---|---|
| | appliances by gender | | | |
| Energy saving | Level of confidence in the possibility of using less energy than now by gender | | | CESID research |
| **Attitudes towards energy sources** | | | | |
| Attitudes towards coal | How much electricity in the country should be generated from coal by gender | | | CESID research |
| Attitudes towards gas | How much electricity in the country should be generated from natural gas / by gender | | | CESID research |
| Attitudes towards hydroelectric power | How much electricity in the country should be generated from hydroelectric power by gender | | | CESID research |
| Attitudes towards solar power | How much electricity in the country should be generated from solar power by gender | | | CESID research |
| Attitudes towards wind power | How much electricity in the country should be generated from wind power by gender | | | CESID research |
| Attitudes towards biomass | How much electricity in the country should be generated from biomass by gender | | | CESID research |
| **Concerns related to access to energy** | | | | |
| | | Power cuts | Worried about power cuts / by gender | CESID research |
| | | Price of energy | Worried about energy to expensive by gender | CESID research |
| | | Energy dependency of Serbia from imports | Worried about Serbia being dependant on energy imports from | CESID research |

| | | | | |
|---|---|---|---|---|
| | | | other countries / by gender | |
| | | Dependency on fossil fuels | Worried about Serbia being dependant on fossil fuels / by gender | CESID research |
| | | Interruptions of energy supply due to the natural disasters | Worried about energy supply interrupted by natural disasters / by gender | CESID research |
| **Perception on contribution to mitigation** | | | | |
| Climate is changing | Percentage of population that thinks world climate is changing by gender | | | CESID research |
| Informed about CC | Percentage of population that is informed about climate change by gender | | | CESID research |
| Thinking about CC | Percentage of population thinking about climate change by gender | | | CESID research |
| Human causes | Percentage of population that identifies human causes of climate change / by gender | | | CESID research |
| Personal responsibility | Percentage of population recognizing personal responsibility to reduce climate change / by gender | | | CESID research |
| Worried about climate change | Percentage of population worried about climate change / by gender | | | CESID research |
| Links between limitation of energy consumption and CC | a) How likely limitation own energy consumption will influence climate change by gender<br>b) How likely government limits on energy consumption will | | | CESID research |

| | | | | |
|---|---|---|---|---|
| | influence climate change by gender<br>c) How likely other people limits on energy consumption will influence climate change by gender | | | |
| Taxes on fossil fuels | Attitude towards introducing additional taxes on fossil fuels / by gender | | | European Values Study 2017 for Serbia |
| Subsidies for renewable energy | Favour using public money to subsidise renewable energy by gender – precise data are not available | | | European Values Study 2017 for Serbia |
| Law banning sale of the least energy efficient household appliances | Favour introducing law banning the sale of the least energy efficient household appliances by gender | | | Currently not available |
| Knowledge of consequences of CC | Knowledge of likely consequences of climate change in Serbia by gender | | | CESID research |



# 4. Conclusion and Recommendations

The inception phase of establishment of monitoring framework indicated the **complex relation between climate change and gender equality** through seven key areas: access to resources, participation in decision making in general and particularly in climate change policies, in the economy, employment, but also consumption and household livelihoods, in relation to education and health and in the area of knowledge, attitudes and inclinations towards different types of behaviors that might impact the environment. The assessment also revealed how much is important to simultaneously take care of the impact of big systems such as companies, energy producers, natural disaster alerting system, but also how much is important human centered approach as citizens with their livelihood opportunities in everyday lives can contribute to the successful mitigation and can successfully adapt to climate change if equipped with appropriate resources, information, knowledge that can be enabled by adequate policies.

The proposed framework also provides guidelines on how and where to mainstream gender perspective not only in climate change policies but in other relevant policy areas as this is cross-sectoral and multi-sectoral issue.

For further advancement of gender mainstreaming in monitoring climate change and policy making that will address climate change mitigation and adaptation in gender responsible ways, several sets of recommendations are proposed.

**It is needed to further discuss and elaborate proposed framework.** The initial assessment and development of monitoring framework showed how much the climate change and gender equality intersection requires contribution of very diverse expertise. In the following phase it is important to discuss the proposed framework with experts in following areas: energy, industry, environment, agriculture, transport, waste management, public health, sexual and reproductive health, demography, water management. Based on their experts' contribution the frameworks should be revised to incorporate additional or redefine currently proposed indicators. Final revised framework should be validated by the same group.

**Mapping data availability and data sources.** Proposed framework is partially checked for data availability. In line with process of elaboration of framework with contribution of combined expertise, availability of data, identification of data sources should be checked more precisely. In case data are not available for indicators as they are proposed now, the indicators should be revised in accordance with data availability if this still provides to measure adequately certain dimension, or some proxy indicators should be defined. Consultations with Statistical Office of the Republic of Serbia, relevant ministries and institutions which are data producers should be conducted.

**To propose data collection through regular surveys**. In some cases it would be very beneficial to add few questions in regular surveys conducted by Statistical Office of Serbia or other public institutions, data producers, such as Public Health Institute, or similar. For example, adding the question on the content searched through internet (adding item such as 'content related to climate change'), is not big change in the survey instrument but it can provide very valuable data on which groups are currently more interested and ready to activate in regard to this issue and which groups require more awareness rising. Similarly, Integrating the climate change related questions (e.g. European Social Survey round 8 rotating module on climate change) in the regularly conducted population surveys would be of great value. For this purpose workshop could be organized with SORS, Ministry for Environmental Protection, Agency for environmental protection, Institute for public health, Republic Geodetic Office and other institutions.

**To conduct new surveys** that will shed more light on certain aspects that are not sufficiently visible through available data. For example, gender aspects of different forms of consumption, waste management, civic engagement could be explored more in order to inform policies and measures. This should not be confused with knowledge and attitudes surveys, as this kind of survey should be focused on practices and behaviors as well as resilient capacities of households and individuals of different socio-economic position and characteristics.

**To produce toolkit for gender mainstreaming in climate change policies.** The toolkit could contain manual and some form of tool such as check list to assist policy makers to take care of gender perspective when designing climate change or climate change relevant sectoral policies.

**To increase capacities** of experts and officials involved in climate change policy making, public administration and reporting on climate change, to understand how much gender equality is important and how is interacting with climate change causes and effects.

**To conduct content and lexical analysis** of gender sensitive CC terminology in UNFCCC National Adaptation Programmes for Action (NAPAs) and National Communication (NCs).