



Gender in municipal climate change mitigation and adaptation plans: the case of the creation of the plan for Piracicaba, Brazil

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Summary

The analysis of climate risk and the preparation of plans for mitigation and adaptation to climate change in Brazil rarely consider gender. In fact, the relationship between gender and climate is very little explored in academia and even in NGOs involved with this issue. This article examines the different ways to approach the gender issue in municipal climate plans anchored on the development of the Participatory Plan for Climate Adaptation and Mitigation in the municipality of Piracicaba in state of Sao Paulo, Brazil. This work

explores the methodological roadmap chosen for the findings and the practical results translated into the actions provided for in the Plan. The main conclusion is that the findings and mapping of climate zones do not yet systematically incorporate the different perceptions and needs of women. For example, the speaking time granted to women is still minimal and the climate problem outlook seen from a man's point of view still prevails.

Keywords: **Gender, Women, Climate, Climate mitigation plan, Adaptation.**

Key messages

- Regardless of how overarching the method to create climate change mitigation and adaptation plans is, women who take part in it still have their say curtailed by undesirable male behaviour (i.e. they explain what women have said as if they needed tutors).
- The creation of an environment of trust and clear agreements to ensure equality are fundamental.
- In general, men discuss environmental issues and women discuss social and gender issues, which reveals a segregation of topics that makes it difficult to overcome obstacles that affect both genders, albeit differently in both fields.
- The mapping of social/climatic risks remains incomplete and partial due to the lack of separate data so efforts to collect data on the ground are still essential towards helping understand the risks from a standpoint of gender difference.

Introduction

The behaviour and expectations regarding the different roles that men and women play in society influence how both groups handle environmental issues. As such, every gender is affected by the consequences of climate change in a different way. Women would be the most affected because they already have to deal with tribulations arising from pre-established standards for women. Even though they suffer more from the impact of climate change, women are still seen as "incapable", which hinders this process of active participation. Leadership roles in climate change mitigation actions are more difficult to reach by women, which is apparent in the low number of women negotiating and proposing measures for the climate crisis (Ariyabandu, 2009).

Even in the highest sphere of climate negotiations - the UNFCCC (United Nations Framework Convention on Climate Change) -, women are at a disadvantage. A study by Oliveira and Prado (s/d) took a closer look at women's participation in UNFCCC climate negotiation positions, with a focus on monitoring women's participation in Convention offices and delegations between 2013 and 2018.

The results were not positive in regard to female participation. The researchers pointed out that it was only at COP 18 in 2013 that a resolution was approved requesting women's participation in COP meetings every year to be monitored for the purpose of analysing what was being achieved.

Analysing reports of post-resolution participation, Oliveira and Prado (s/d) found that the number of members involved in this matter in the offices, from 2013 to 2016, was eleven with an average of three women and eight men. The number of office members increased to 12 in 2017, however, none of them were women and it was only in 2018 that women were included, albeit only two.

Despite the negative results, it must be pointed out that other studies emphasized the essential role of women in decision-making, for example, in the negotiations of the Kyoto Protocol. This forum showed that the representatives of the delegations from Germany and Switzerland collaborated at all times and helped some delegations from developing countries with a few Protocol issues, which in turn built bridges between the

delegations and created more favourable cooperation and advantages when it came to voting on the decisions (Hemmati and Röhr, 2009).

Therefore, if at the highest levels and most developed countries, women's voices are still scarcely heard and their chance of influencing decisions is small, one can only imagine the challenges of this role at the scale of municipalities in developing countries like Brazil. Brazilian scientific production on the participation of women in climate plans is scarce and scattered. A bibliographic research, although not comprehensive, led to a variety of articles that focus on municipal planning experiences for adaptation to climate change but almost none of them include a mention of gender or explain this aspect within the development process (Di Giulio et. al, 2019). One exception is the book *Climate Change in Santos Brazil: Forecasts, Impacts and Adaptation Options* written by Nunes et. al (2019) and which comments, albeit briefly, on engagement and consultation processes to raise general perceptions about relevant issues in the coastal city of Santos located in São Paulo state considering gender. However, the results do not separate perceptions by gender.

As such, this article will analyse the creation process of the Participative Municipal Plan for Mitigation and Adaptation to Climate Change in Piracicaba, a municipality in São Paulo state, with the purpose of adding more elements to the central question of the role and quality of the participation of women in the creation of plans of this type. The Plan is one of the actions under the "Pira no Clima" Project, an initiative of the Forest and Agriculture Management and Certification Institute (Imaflora). The creation of the plan combined methodological principles to boost participation and fight gender inequalities while at the same time generating and disseminating data about the municipality.

The objective of this analysis is to posit the application of these participatory methods of the plan and the lessons learned which may be used in other experiments, thus increasing knowledge about this aspect of participation and gender considerations in local territorial planning with basis on climate change.

Method

The following steps were adopted to analyse the development process of the Piracicaba Climate Change Mitigation and Adaptation Plan and its gender approach:

- 1.** Review of the methods used to encourage women to participate in the creation of the Plan's content.
- 2.** Observation of meetings and interactions with the implementers of the stages to raise awareness and analyse all progress and existing bottlenecks.
- 3.** Amount of participation by type of event organised under the Plan (Table 1) using the records of sessions and meetings.
- 4.** Amount of women attending the mitigation working group (Table 2).
- 5.** Systematisation and interpretation of quantitative and qualitative data.

Observed meetings

The Plan creation process included four types of different events for the compilation of perceptions and contributions from the community (see description in the Results section). The number of observations made from April to September 2020 in each of these events and which supported the analysis hereby was as follows:

- **Participatory discussions:** observation of 11 meetings with more than 100 people in total by September 2020.
- **Perennial adaptation and mitigation working groups:** from April to September, 7 meetings were held with 63 people from 28 organisations (20 of them from Piracicaba).
- **Singular Thematic meetings** with experts in specific topics. Nine meetings with 50 people were held between July and August 2020.
- **Workshops and cultural events,** to broaden the agenda in a diverse way - climate soirees, climate justice workshop, webinar on gender and climate. These included 3 meetings with more than 300 participants.

Table 1. Quantified data on participatory spaces

Data	Metrics
Women attending the meetings	Absolute number and percentage
Transgender/transsexual people who attended the meetings	
Women invited to speak or host the meetings	
Transgender/transsexual people invited to speak or host the meetings	
Women hired to promote the meetings	
Women who received financial support to attend the meetings	

Compiled by the authors

Table 2. Quantified data of women in the mitigation

Data	Metrics
Women in the Mitigation Working Group	Absolute number and percentage
Women in the Adaptation Working Group	
Women in thematic meetings related to social issues	
Women in thematic meetings related to environmental issues	

Compiled by the authors

For the purposes of this analysis, “social issues” are considered to be thematic meetings related to “gender” and “social inequalities”. All of the other seven meetings were targeted at “environmental issues”.

Brief description of the municipality, the Project and the Climate Plan

Piracicaba is a city located in the midwest region of São Paulo that extends 1,378 km² and is home to a population of 407,000 people (IBGE, 2020). According to the latest demographic census, 51.1% of its inhabitants are women and almost 98% of the population of Piracicaba lives in the urban area (IBGE, 2010).

The Pira no Clima project is an initiative of the Institute of Forest and Agriculture Management and Certification (Imaflora) and is a permanent action that includes the creation of the Piracicaba Mitigation and Adaptation to Change Plan. Both governmental and non-governmental players are involved in this action.

The Plan is a document in development that when concluded will contain more than 100 guidelines and 200 specific actions proposed within a set of 15 topics, such as agriculture, natural resources, urban mobility and reception and empowerment of vulnerable population.

The methodology for developing the Climate Mitigation and Adaptation Plan was designed by a multidisciplinary team composed of managers, environmental and agronomist engineers, political scientists and administrators.

Four different participatory spaces were outlined in online format (due to the pandemic). The attempt was to engage different sectors of the community of Piracicaba in the climate agenda while creating a space where their perceptions and desires could be heard to lay the groundwork for the Plan's guidelines and actions.

1. **Participatory discussions** aimed at listening to and amplifying the voices of marginalized groups, such as women, LGBTQI+, peripheral and black populations, small rural producers and youngsters. By September 2020, 11 meetings with over 100 people in total had been organised.
2. **Perennial Working groups** for adaptation and mitigation with professionals and organisations from public and private entities, the third sector and academia, who work on environmental or gender issues. From April to September, seven meetings were held with 63 people from 28 organisations (20 of them from Piracicaba).
3. **Singular Thematic meetings** with specialists in specific topics involved in the Plan to provide technical and scientific input for the specific topics. Nine meetings with 50 people were held from July to August 2020.
4. **Cultural workshops and cultural events** to broaden the agenda in a diverse way - climate soirees, climate justice workshop, webinar on gender and climate. These included 3 meetings attended by more than 300 people.

In addition to these participatory events, the creation of the Plan included a diagnostic stage called **geospatial analysis of socioclimatic risk**. This step consisted of attempting to cross-reference the data of the social and environmental weaknesses and threats of a site. It was assumed that risks differ according to gender and their intersections. First, because vulnerability relates to the social roles of individuals and then because territories are historically segregated by social issues, which relegates climate threats to specific groups.

The main outcome expected in this step was to identify the weaknesses and threats separated by gender. The availability of data for analysis was one of the main obstacles faced by developers. Another was communicating the risks to society due to the peculiarity of the work at a municipal level. The following paragraphs summarize the main findings that resulted from this stage of the Plan's development.

Main findings

The general quantitative balance of participation (Table 3) showed that in this aspect, the contingent of women in participatory spaces was over 75%.

Table 3. Results of participation of women and other genders in participatory spaces

Data	Nº	%
Women attending the meetings ⁽¹⁾	54	82
Transgender/transsexual people who attended the meetings	1	1.1
Women invited to speak or host the meetings	10	45.5
Transgender/transsexual people invited to speak or host the meetings	1	4.5
Women hired to promote the meetings	3	75
Women who received financial support to attend the meetings	4	100

Compiled by the authors

(1) Number and percentage of women who identified themselves or were identifiable during participatory processes. This is because not all events required the attendees to identify themselves and because in some of them, such as Facebook live-streams, an exact count was not possible.

rn, from the quality standpoint, these events showed that although active efforts were made to encourage women to the event (including through financial aid), the male presence predominated and the speeches were monopolised by men.

In a specific meeting, the speeches of women participants and of the female host of the event were interrupted by men, including to comment favourably on the importance of gender issues. The participation of transgender/transsexual people occurred subtly, however, with relevant contributions to the events.

After becoming aware of this behaviour, the project developers began setting up participation agreements that would prioritize the speech of women and newcomers (for the perennial events).

Another effort put in place to encourage the participation of women was to provide financial aid. However, problems

in these transfers created a certain amount of tension aggravated by the Covid-19 pandemic.

In regard to the geospatial analysis of social/climatic risk, it was observed that the planning outlined by the developers had to be adjusted due to a few factors related to the issue of gender and the scope of the analysis.

First, the identification of weaknesses and threats depends on specific knowledge to identify the variation and intersections of these risks with gender, and the existing analyses are not always able to detect these particularities. For example, an important social/climatic risk related to women is the development of diseases in pregnancy, usually compounded in high temperatures, such as pre-eclampsia.

In order to analyse this risk and decide on a priority for action, it is essential to cross-check the threat of temperature increase (common to risk analysis), with specific va-

riables such as number of hospitals with maternity wards; per capita income of women; regions with women who are heads of households that coincide with the number of women with children (which may mean multiple working hours for them, and greater exposure to high temperatures and stress).

The unavailability of gender segregated data is an obstacle for further analysis of the challenge presented above. When segregated, easily accessible public data is restricted by gender separation (male and female) making it impossible - or at least difficult - to consider different genders and gender identities.

In addition, the communication of risks to the population has brought to light an important point: at a national level, the risks and their projections (through modelling) were very different from region to region. However, at a local level, the difference from one district to another was relatively small; therefore, the risk analysis, which previously provided for modelling at a district level, was changed to an analysis of the current scenario considering threats and weaknesses that were regionally organised within the municipality and were preferably already included in other studies.

Lastly, in relation to the participation of women in the events about mitigation and topics related to environmental issues, there was a relative balance, despite the environmental issues being generally dominated by men, within the creation of the Plan (Table 4).

Even so, there is little male participation in meetings about “gender” or “social inequalities”, which shows that experts of these areas who attended are also those included in vulnerable groups, such as women.

Table 4. Participation of women by type of thematic group

Dado	Nº	%
Women in the Adaptation Working Group	15	48.4
Women in the Mitigation Working Group	16	53.3
Women in thematic meetings related to social issues	14	82.4
Women in thematic meetings related to exact and/or biological sciences	30	65.2

Compiled by the authors

CONCLUSIONS

This analysis of the development process of the Climate Mitigation and Adaptation Plan for the municipality of Piracicaba shows that even in the participatory creation process, some problems found in the structure of society persist, such as the difficulty to map and include planning actions that take into account different needs based on gender and their reach. There are also important challenges involved in increasing the quality of participation, especially in relation to women and other vulnerable groups.

An active effort is essential, however, the availability and quality of participation depends on creating a welcoming environment, with explicit agreements between participants to ensure equality in speech and a greater role for vulnerable groups. Well-structured financial aid and an incentive structure may also improve participation.

In addition, the lack of men to discuss more specific issues related to the population that is vulnerable to climate change (such as “gender” or “social inequalities” in the case of thematic meetings) demonstrates the segregation of the agenda, which should be common.

With regard to social/climatic risk analysis, the specific needs of women have not yet been systematically incorporated. There is no generation and availability of divided and gender-related data. Therefore, an accessible methodology is needed considering a local scale from a gender standpoint to find solutions for the specified challenges.

One of the main lessons that can be drawn from the experiment initiated in Piracicaba is that a process of knowledge generation and communication that enables the dissemination of methodologies that work with participation and equality in the creation of Climate Plans in Brazilian municipalities is essential. As seen previously, listening to the perspective of women and other vulnerable groups is still not aligned with the role they should be given in the climate agenda.

It is necessary to increase and expand research in the processes to create climate change mitigation and adaptation plans at a local level and as such form an empirical body of knowledge that is useful for the dissemination of better public climate policies. This needs to be encouraged both in academic circles and within NGOs involved in the issue.

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