



# BACCHUS

## Impact of Biogenic versus Anthropogenic emissions on Clouds and Climate: towards a Holistic UnderStanding

Collaborative Project

SEVENTH FRAMEWORK PROGRAMME  
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Atmospheric processes, eco-systems and climate change

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## Summary of results

### 1. The necessity of gender actions in academia

The percentage of men and women in academic careers is typically not even, in particular when inspecting the situation at higher academic ranks. In Figure 1 these proportions are shown using data from EU-27 countries in 2006 and Norway in 2008, which shows the situation also known as the “leaky pipeline” with a low fraction of women in top academic ranks. Interesting in this evaluation is that even Norway, a country known to be very engaged in promoting women in the working world, shows this gender gap.

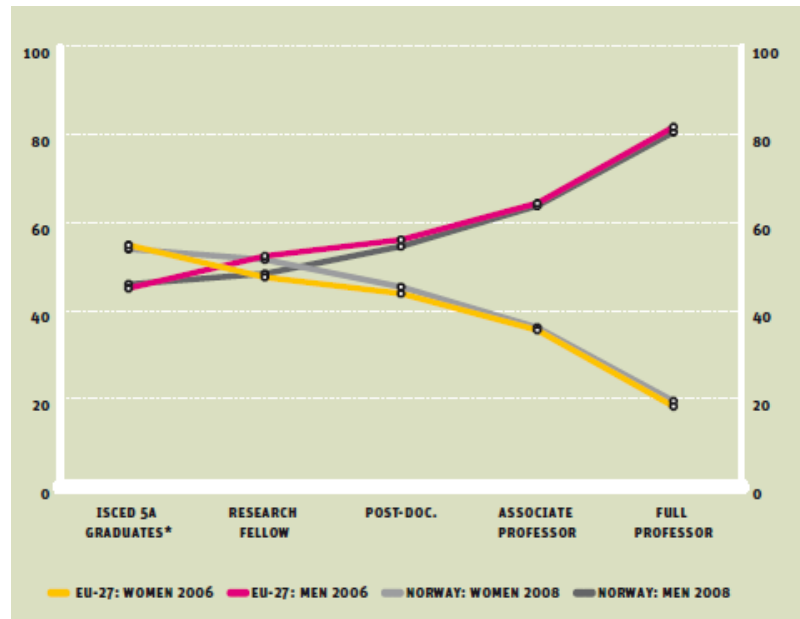


Figure 1: Proportions of men and women in a typical academic career, students and academic staff in the EU-27 (year 2006) and in Norway (year 2008). \*International standard classification of education: 5A refers to the first stage of tertiary education (master level). Sources: NIFU STEP, register of research personnel, doctoral degree register; European Commission, SHE figures 2009. In: Talent at stake, 2010.

*“Women account today for almost 60% of university degrees in Europe, and they achieve excellent grades, better on average than their male counterparts. However, their presence at the top of scientific and academic careers is scarce. Only 18% of full professors in Europe are women; 13% of heads of higher education institutions and 22% of board members in research decision-making. Women’s skills, knowledge and qualifications are grossly underused in the labour market. The low numbers of women in decision making positions throughout the science and technology system is a waste of talent that European economies cannot afford.” (EC, 2012).*

Multiple reasons for this underrepresentation of women in science are apparent and have been discussed in detail in Deliverable D6.4. Among others, significant causes are:

- Difficulties in combining professional and personal lives for women, who are exposed to the greatest pressures for achievement and to embark on their scientific careers particularly in the childbearing years (“rush hour”)
- Hidden, but still existing and often unrecognized structures such as the “leaky pipeline”, the pay gap between females and males as well as biased evaluation of scientific merit such as a publication based evaluation, which neglects the fact of different publication rates during breaks/part-time work due to family responsibilities.

- The underrepresentation of women can lead to isolation and other difficulties in an environment of masculine models with only a few women in the staff of scientific facilities as long as the “critical mass” of women has not been reached.

Consequently, efforts have to be made to reduce factors and improve the situation for females in academia in the future. The FP7 framework programme seeks to promote gender equality by 1) promoting the role of women in science with a target of 40% women’s participation at all levels, and 2) by equally addressing women’s and men’s realities as an integral part of the research to ensure the highest level of scientific quality (Toolkit – Gender in EU-funded research, 2009). In BACCHUS a gender action plan was issued to raise awareness of gender inequality within the consortium, to improve the gender balance on the project level and beyond to promote female scientists in their scientific careers.

## **2. Actions in the BACCHUS consortium**

The gender action plan was presented as Deliverable D6.4 and planned according to the EC checklist provided by the FP7 toolkit (Toolkit – Gender in EU-funded research, 2009). Actions that were taken within the BACCHUS project to raise awareness and to overcome gender inequality are presented in the following:

Already at the BACCHUS kick-off meeting 08-09 January 2014 gender actions were enforced by the invitation of a speaker on this topic. Renate Schubert, Gender Delegate of ETH’s President and part of the gender equality office ETH Equal! gave a talk on “Gender & Research” and discussed the gender requirements for successful research. She discussed the representation of women in research, the existing “leaky pipeline” with fewer women in higher academic positions and how to scope with stereotypes providing helpful recommendations for the BACCHUS project and the herein developed gender action plan.

At the Annual Meeting 2015, a 1.5 h workshop for Principal Investigators was organized in collaboration with the consultancy Diversity in Business owned by Dr. Valerie Gürtler-Doyle (Head of Talent Management Emerging Markets and Diversity & Inclusion Switzerland / Novartis, Basel, Switzerland). In the first part of the workshop, Dr. Gürtler-Doyle gave an introduction on why we should be concerned about gender awareness in academia and explaining the potential causes for the lower number of women in higher academic ranks. This was followed by discussions in table teams in which selected gender & diversity topics were discussed in order to find distinct measures to promote women in academia, which can also be realized on the project level. Arising from these discussions, we encouraged the BACCHUS participants, which had career breaks, to indicate in their applications the equivalent numbers of publications based on the average rate of employment (see details in Deliverable D6.5).

The promotion of excellent female postdocs to responsible tasks was aimed in the project. This was successfully done in some cases. For example, Jurgita Ovadnevaite (NUIG) has been nominated as a task leader in work package 2.

Efforts were made to aim at the EU-FP7 target ratio of female participants by having 40% female presentations at Annual Meetings. In 2015, 9 presentations were given by female speakers and 16 by male speakers leading to a female fraction of 36%. In 2016, this fraction decreased slightly with 7 female and 16 male speakers (30% female presenters). This

inequality was due to a large number of scientific talks given by senior male persons. At the Annual Meeting in 2017 more efforts were taken to improve the female ratio. In that year 11 female presenters and 15 male presenters gave oral presentations, which led to a female fraction of 42%, thus increased by 12% compared to the previous year. In 2018, the fraction of female presentations increased even more to 52% with 15 male and 16 female speakers at the BACCHUS final meeting. The reason for the increase in the last two meetings was a larger number of female speakers at the PhD and PostDoc level presenting their contributions to the project and an increased total number of oral presentations in 2018.

Dedicated female lunches at Annual Meetings have been proposed to support networking of women. The majority of women in the project followed the invitation for a dedicated female lunch at the Annual Meeting 2015. However, since the BACCHUS community is not too large and to enable work package and cross-work package discussions during lunch, it was collectively agreed not to be continued at the other Annual Meetings.

A list of recommendations to avoid gender biases in the recruitment process and letters of recommendation has been distributed to Principal Investigators (PI's) and published at the BACCHUS website to be accessed by all BACCHUS participants and the public.

In order to reconcile work and private life project events were organized to allow traveling and meetings during weekdays only. As such, the Annual Meeting was always held from Tuesday to Thursday in the respective years. Further, traveling was minimized due to video/teleconference options. In particular, this was done for all Steering Committee (SC) meetings that were conducted in addition to those at Annual Meetings. Childcare on an individual basis at workshops and Annual Meetings was planned upon request of participants but has not been taken advantage of.

A mentoring program for women scientists in early career stages (PhD and Postdoc) was implemented by encouraging our female participants to participate in mentoring schemes offered at BACCHUS partner institutions. A list of schemes was provided at the BACCHUS website.

We collaborated with equal opportunity offices at the universities of the consortium members. For example, a collaboration with the ETH Equal! Office for gender equality was valuable for recommendations when drafting the gender action plan. In addition, events such as the annual Girls' Day at ETH was supported by ETH Equal!.

### **3. Gender balance situation in the BACCHUS consortium – update for the entire project**

The gender situation within the BACCHUS consortium has been evaluated on an annual basis and the overview of the entire project is presented here.

In Figure 2 the number of personnel is shown as a total headcount and accounts for all persons active in the project at any time during the project (column "ALL"). This includes personnel not obtaining their salaries from the project as well as all PI's, head of groups and professors. From a total of 192 persons participating in the project, a fraction of 32% was female showing a gender imbalance.

For the evaluation of the development of active personnel in the respective project years between 2013 and 2018, all participants obtaining their salaries from BACCHUS were

considered, but only unpaid activities of PI's, head of groups and professors for the purpose of gaining a comparable number of active personnel throughout the project as shown in Figure 2, columns 2013 to 2018. The total number of personnel has increased from a minimum of 67 at the beginning of the project in December 2013 to a maximum of 131 participants in 2015 and shows hiring in the first two years of the project. This period coincides with the most active phases of the project with the field campaigns. This required the additional hiring of personnel (e.g. student assistants and technicians during campaigns) for the activities in all work packages. The female fraction increased from 28% in 2013 to a maximum of 32% towards the project end and with a total number of active personnel of 69 persons in 2018. The increase in the female fraction shows that – although only to a small extent – the gender actions as described in Section 3 were successful.

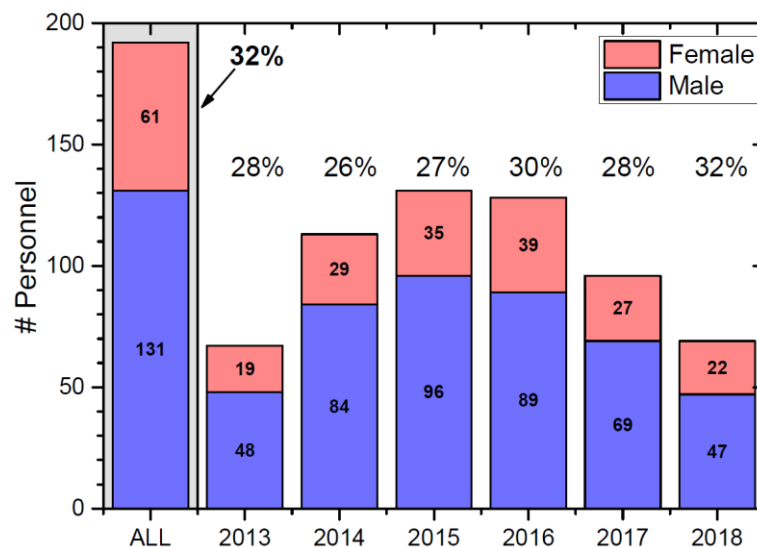


Figure 2: Gender balance in the BACCHUS project. The graph shows the total headcount including unpaid personnel in the column “ALL”. Annual values (2013-2018) do only include paid personnel and (paid and unpaid) PI's, Professors and Head of Groups.

To elucidate these numbers with consideration of the position of the BACCHUS employees, Figure 3 summarizes the total headcounts as shown in Figure 2 (“ALL”) separated in the categories of experienced researchers, PhD students and Other as used by the European Commissions’ workforce statistics. Comparing the categories, it becomes clear that researchers on the junior level (PhD students) are represented in the project as equal numbers for female and male employees. However, on the experienced researcher level, a large gap remains with less than one third (26%) female researchers in the BACCHUS consortium. However, this number does not represent the situation at all ranks of experienced researchers. For example, on the Postdoc level 38% of the employees were female (11 out of 29 participants) and it points to the fact that the discrepancy is due to the large number of male PI's (only 21% female), head of groups and professors, which were part of BACCHUS from the beginning of the project and many of which contributed as unpaid personnel. The effect of this group becomes clear from the fraction of only 30% females in the “unpaid personnel” category as shown in Figure 3.

On the management level the BACCHUS project is a good example for females in leading positions with Prof. Ulrike Lohmann as the female coordinator of the project, 4 out of 7 female WP leaders and a Steering committee (SC) consisting of 57% (63% at the project start with an additional project administrator) female members (Figure 3). For the group of WP leaders and

the SC, only active members were considered (including co-leaders, but without deputies). Thus, the decision-making positions in the BACCHUS project are well gender balanced and the female fraction is even dominating.

The recruiting for the BACCHUS project, which only includes personnel hired by partner institutions exclusively for the BACCHUS project, shows a good balance with a fraction of 48% female personnel, also with balanced numbers of hired males and females on the PhD (3 out of 7 female) and Postdoc (5 out of 6 female) level.

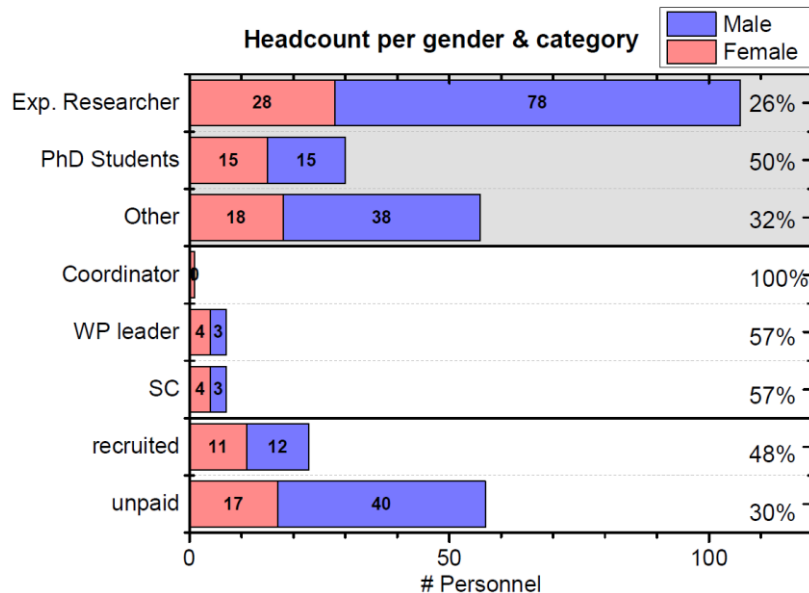


Figure 3: Total headcount per gender and employment category shaded in grey (data as shown in “ALL”, Figure 2). Middle 3 bars: The fraction of total headcounts in management positions (coordinator, work package (WP) leaders and Steering Committee (SC)). Lower 2 bars: number of recruited personnel (exclusively for BACCHUS project) and unpaid personnel of the total headcount. Female fractions (in %) are given on the right.

#### 4. Actions aimed at a wider public

The BACCHUS’s gender policy was disseminated to the wider public throughout the project via the BACCHUS public website (<http://www.bacchus-env.eu/data/gender.html>). It included a description of gender equality aspects in research, the annual reports for the diversity within the project as well as recommendations to reduce the gender gap and the actions to do so in BACCHUS (see gender action plan, Deliverable D6.4).

We encouraged the partner institutions further to participate in events to enthuse girls in secondary schools for science, technology, engineering, and mathematics (STEM) disciplines. These events aimed at visiting days, lab tours, experimenting days or movies for school students. Specific outreach activities were led by BACCHUS partners, i.e. the Girls’ Day at ETH Zurich at which a number of girls between 10 to 14 years had the chance to spend a day with (female) researchers and learn about clouds, weather and climate. The Girl's Day was carried out every summer throughout the project. A summary of these annual events at ETH Zurich can be found in the list of events on the BACCHUS website.

### Summary

Many efforts were made during the BACCHUS project to improve gender balance. Decision making/leading positions in the BACCHUS project are well balanced between male and female partners with a female project coordinator. On the basis of the total headcounts, an imbalance is found showing the typical picture of a lower female fraction in higher academic positions. This is primarily the case due to more male participants on the experienced researcher level, i.e. PI's, head of groups and professors, but on a PostDoc level and PhD students level a 50%-50% ratio of female and male participants is almost reached and efforts were made to recruit a larger fraction of females at the same qualification. Personnel exclusively hired for the project showed a very good balance. The gender actions performed during BACCHUS were successful and the status on the project level is promising for the future. However, further actions are necessary for a good gender balance in research to decrease the imbalance on the level of experienced researchers/higher academic ranks in the future.

### **Changes with respect to the DoW**

None.

### **Dissemination and uptake**

The gender equality and diversity situation in the BACCHUS consortium is presented on the BACCHUS gender website as well as updates on gender-related actions and events.

### **References**

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