

# For a better integration of the gender dimension in Horizon 2020 Work Programme 2016-2017

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The mandate of the AG Gender is to provide advice to other AGs and to the Commission on ***the integration of the gender dimension in research content*** pertaining to all activities where it is relevant, as well as its possible interactions with other crosscutting issues. As part of our advice, we have prepared this paper for use during the preparation of the Horizon 2020 work programmes,

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## Framing and objective of the paper

Integrating the gender dimension in research and innovation content is one of the three objectives of gender equality in Horizon 2020. It concerns all parts of Horizon 2020 and many steps of the R&I cycle, ranging from disclosing the sex of cells in experiments to considering the needs of women and men as end-users of technological innovations.

The quality and accountability of research is affected when the gender dimension is not taken into account. The gender dimension is part and parcel of **research excellence**. It enhances **the societal relevance of the produced knowledge, technologies and innovations**. It also contributes to the production of **goods and services better suited to potential markets**. To support this process, it is essential to devote resources to the gender aspects of research.

The **gender dimension** is a dynamic concept which puts researchers at the forefront of questioning gender norms and stereotypes, and addresses the evolving needs and social roles of women and men. Depending on the field of research, it entails an analysis of gender, sex or both.

**Gender** is a key analytical and explanatory variable in research. Gender as a socio-cultural process refers to cultural values and social attitudes that together shape and sanction "feminine" and "masculine" behaviours, and also affect products, technologies, environments, and knowledge. Gender assumptions often go unquestioned and can unconsciously influence scientific priorities, research questions, and choice of methods.

**Sex** refers to biological characteristics of women and men, boys and girls, in terms of reproductive organs and functions based on chromosomal complement and physiology. As such, sex is globally understood as the classification of living beings as male and female, and intersexed. Sex differences relevant to the research and innovation should be investigated and addressed.

Addressing the gender dimension in research and innovation thus entails taking into account sex and gender in the research process, when developing concepts and theories, formulating research questions, collecting and analysing data and using the analytical tools that are specific to each scientific area. Sex and gender analysis also helps rethinking standards and reference models.

In the Work Programme 2014-2015 of Horizon 2020, gender issues were explicitly mentioned in more than 100 topics, signalling to the potential applicants the importance of taking into account the possible gender dimension in their proposals.

The Advisory Group on Gender is convinced that there is room for improvement and more can be done to better integrate the gender dimension in the topics and calls of the Work Programme 2016-2017. This paper aims to recommend how to integrate the gender dimension in the various parts of the Work Programme, from generic and from thematic points of view.

***Gender dimension in research content is not gender balance in research teams***

Both are Horizon 2020 objectives in gender equality.

This paper addresses the gender dimension in the *content* of research, whereas gender balance in research teams refers to the *composition of the personnel* primarily responsible for carrying out the research and innovation activities.

## How to include the gender dimension in the Work Programme and topics: general recommendations

- **Explain why gender matters in your area:** think of and present the gender dimension as providing added value in terms of creativity, excellence and return on investment, both from private and public perspectives. Gender is an emerging and important subject of research in many scientific and technological fields. It constitutes, as such, a valuable source of innovation.
- **Make it explicit:** indicate in the topic how exploring gender aspects is relevant and should be taken into account. If gender is not specifically mentioned in a topic, there is a risk that the gender dimension will not be considered at all in the proposals. If gender is mentioned in a topic, the evaluators will evaluate the gender dimension alongside the other relevant aspects of the proposals.
- **Foster the production of new knowledge on gender:** consider what is already known in your area in terms of the gender dimension and identify what is missing. If you think that gender knowledge still needs to be generated, signal it and indicate **which gender aspects should be explored**.
- **Gender implies a multidisciplinary approach:** multidisciplinary approaches are encouraged in Horizon 2020. Reflecting on gender issues in relation to health, transport, energy, security, etc. is a great opportunity to foster the cooperation between scientists with gender expertise and others. It helps concepts to cross the borders of scientific fields and research methods to evolve.
- **Include gender in the impact statement:** the statement on expected impacts is an important part of the topic description, which the evaluators will assess under the impact criterion. Gender is one of the key aspects of the expected impacts. It can be expected that the funded action will have an impact for instance on boys or girls, women or men, gender relations, socio-economic positions and the status of men and women. It can also be expected that the funded actions should contribute to gender equality.

### Did you know that ...

applicants have the possibility to include in their proposals, as eligible costs, *specific studies on gender*, as well as *training on gender*?

These are novelties of Horizon 2020. The aim is to help researchers develop and share gender expertise in relation to the funded projects.

# How gender can be explored in each Horizon 2020 area: hints and thematic suggestions

## *Health, demographic change and wellbeing – Societal Challenge 1*

Promoting healthy ageing and personalised health care requires attention to sex differences and to gender aspects as they jointly determine any eventual health outcome of individuals. High quality research must take into account biological, behavioural and social differences between girls and boys, men and women and gender diverse people. In addition it is relevant to examine how differences and similarities develop throughout the lifespan.

Personalised medicine is the overarching umbrella for specific research and accompanying activities for SC1. Including sex and gender aspects will lead to better targeted and more efficient approaches since sex and gender determine cellular pathophysiology and the crosstalk of the organism with the environment.

The focus on ageing, from early development to the elderly, calls for attention to how epigenetic processes may result in sex-specific outcomes.

For research into developmental origins of health and disease (DOHAD), it is important to consider that the exposure of previous generations to various types of environment have an impact on the responses of the next generations depending both on the sex of the parents and offspring.

Basic research and translational efforts should take due account of differences between women and men. Sex and gender determine stress responses of isolated cells, of male and female organisms as well as coping strategies of women and men and therefore need to be included in the personalizing strategies.

Collection and use of 'big data' for understanding disease pathways and for identification of risk factors leading to disease should be conducted in a sex and gender sensitive manner. Currently in GWAS, inclusion of women is low and sex chromosomes are frequently excluded from the analysis.

For a stratified approach to healthcare, a detailed description of individual biological variation in connection with environmental, societal, and lifestyle factors that influence the development of disease is warranted. It is important to acknowledge that lifestyle factors are influenced by gender norms determining, for example, differences in diet, nutrition and exercise patterns between women and men.

Interaction of sex and gender related mechanisms leads to a different manifestation of major chronic diseases such as infarction, heart failure, diabetes, rheumatic disease, etc. in women and men. Research into these diseases requires sex and gender related mechanisms to be addressed. This will lead to novel, better targeted and therefore more efficient treatment strategies than the previous global approaches and will improve disease prevention and healthy life expectancy.

Research into risk factors for chronic diseases (NCDs) constitutes an area of high public health relevance in the European region with known variations across Europe. This research can be improved by integrating how sex and gender influence risk factors for NCDs. Sex and gender-sensitised approaches contribute to better meeting the needs of women and men and to increased

effectiveness. Not taking into account sex and gender in public health policies and interventions might cost lives and money.

The field of mental health shows huge gender differences in depression, aggressive behaviour and suicide. Gender sensitive interventions aim to address medical and social determinants of mental health. Determinants such as stress and anxiety, contexts like childhood (developmental psychological differences in early childhood) and adult life (work related factors) require a gender analysis in order to develop tailored intervention strategies.

Data collection in basic and preclinical research should take account of sex differences as commissioned by the 2014 NIH guidelines to balance the sex in cell and animal studies<sup>1</sup>.

The differing needs and behaviours of women and men need to be taken into account. Technologies such as assistive technologies for the elderly should take possible sex and gender differences of intended end-users into account. Addressing gender differences in marriage age, partnering patterns, experience in household management and receptivity to technology will result in more effective design.

Please see also the suggestions made for ICT below.

## *Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and bioeconomy – Societal Challenge 2*

### Sustainable agriculture and forestry

There are still strong gender differences in agriculture, forestry, fisheries and marine activities in terms of responsibilities, ownership and decision-making. Although women play an active role in farming, their contributions tend to be under-estimated, their employment status precarious and their participation in decision-making very limited. The lack of social recognition of their activities combined with their precarious economic situation contributes to the decline of agriculture and the weakening of rural areas in many EU countries. One of the calls identified in the SC2 scoping paper supports a "rural renaissance" by "lifting the natural, social, cultural and economic potential of rural areas". The exploration of the possible options for a rural renaissance must incorporate a thorough analysis of the gender dimension in all its cultural, social and economic aspects, including the evolution of family structures. It should include studying the influence of gender perceptions of masculinities and femininities on the modes of production and social sustainability of agriculture and biodiversity. It will be essential to reflect on the expected impacts for women as well, especially when considering goods, services, innovative business and skills development.

Hunting and fishing are strongly gendered activities which significantly affect natural resources. Exploring their evolving gender dimension should provide useful insights in assessing the feasibility of policy options aiming at a sustainable management of natural resources.

### Diet, healthy and safe food

There is scope to investigate the influence of societal changes on diet and the selection of healthy food options. For example, in the traditional matriarchal household, women had a strong influence

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<sup>1</sup> <http://www.bsd-journal.com/content/5/1/15>

on food choices within the home as they usually purchased and cooked the family meals. However, there have been many changes in society and many factors influence food choice, such as changes in family structures, fewer opportunities for younger and older generations to interact, social media, advertising, television and so on.

There is also a need for research about gender differences in the physiological and psychological development of taste in young people.

#### Food consumption and security

Studies exploring the effects of food consumption should be designed with two time frames in mind: chronic effects (i.e. long-term effects of diets on biomarkers and disease) and acute effects (i.e., postprandial fat challenges, known to be very different between men and women).

Research in relation to the development of novel and functional foods could include those that impact women.

Information for observational studies (to correlate behavioural and dietary variables, for example) is generally obtained through questionnaires. More research is needed to learn whether women and men provide equally accurate data. Researchers with better knowledge of food consumption patterns can determine the impact of the social environment on populations and the sex-specific biological outcomes of different patterns of food consumption.

Integrating sex analysis into the field of nutrigenomics could provide a better understanding of how diet affects the metabolism and well-being of women and men at the genetic, molecular and cellular level.

Randomized intervention studies designed to investigate female and male responses to specific diets need to include both women and men. Moreover, measurements should include potentially informative biomarkers provided by current omic technologies (e.g., transcriptomics, epigenomics, proteomics and metabolomics), in addition to traditional risk factors<sup>2</sup>.

### *Secure, clean and efficient energy - Societal Challenge 3*

While energy research is increasingly opening up to social scientific research that addresses end-user engagement, equity and distributional issues, for example in relation to more participatory approaches, the particular question of how gender imbalances are institutionalized and reproduced over time has not received research attention so far.

#### Attitudes of men and women

A step forward would be to draw up a research agenda centred on the question of how gender mediates access to resources, exposure to pollutants and opportunities to participate in energy resource management.<sup>3</sup>

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<sup>2</sup> Recommendation taken from the [Gendered Innovations](#) project (case study on food&nutrition)

<sup>3</sup> Ryan, S.E. (2014) Rethinking gender and identity in energy studies. *Energy Research & Social Science* 1 (2014) 96–105

## *Smart, green and integrated transport – Societal Challenge 4*

### Transport safety

In legal and consumer evaluation of transport safety, the average male represents the whole population. European industry in the transport safety area could be world-leading if that norm was broadened to also include the average female. In addition, substantial societal saving would be achieved by addressing safety of men and women equally well.

### Urban planning/ mobility challenges in urban areas:

Given the societal trend towards service-orientation, there is a need to design, organise and manage transport and mobility in a way that is more responsive to women and men's needs. For example, it would be interesting to look at how public transport is important in women's choice of jobs.

### Automated road transport:

The gender dimension would be useful to better understand human-machine interactions and male and female users' behaviour and interests. The analysis should also include intersecting factors such as age, income level, cultural aspects and regional characteristics.

### Safe, assessable and fair transport for seniors

Europe is facing a new demographic trend and in 2016, 55+ European citizens will represent approximately 30% of the population. This poses new challenges and opportunities for future developments of safe, accessible and fair transport for seniors. It is useful to advance knowledge about how needs and demands could influence technologies, products and services that will enable seniors to pursue an active, healthy and independent life. The focus should be on a variety of trends and innovations that cross-cut public and private, rural and urban, as well as motorized and semi motorized modes of transport. Also, gendered differences should be taken into account in terms of technology practices, driving abilities and interests.

Research and Innovation in this field has a huge export potential. Not at least, in China, which is facing similar demographic trends in the near future and has an interest in keeping seniors mobile.

### Safe, accessible and fair transport for all - innovation of data and statistics

Transport statistics and other indicators which are the life blood of transport policy, are in need of innovation and sophistication in order to comply with EU policy agendas of sustainability and equality for all. Present day transport statistics tend to focus on status quo and operate with abstractions of individuals as neutral users or citizens. Besides, most data and statistics in transport apply very simplistic categories, e.g. in terms of gender that is translated into binary male/female variables, but which lacks context and specificity such as age, class, ethnicity, disability, sexuality etc. In order to advance efficient inclusive and sustainable solutions to current transport problems which serve the wellbeing of all, there is a need to develop fresh indicators together with new survey technologies, big data etc. Methodologies and indicators should aim at including vital questions of social, cultural and gendered dimensions along with indicators of broader mobility patterns and potential change.

## Gendering European Transport and Innovation

There is ample evidence of gender as a vital cross-cutting category that relates to structures, identities and cultures in European transport and mobility. At the same time, there is a need for more complex and fresh approaches, to explore the influence of gendered practices in transport demand and supply, and the links to the shaping of transport policies as well as research and innovation activities. A deeper and sounder understanding of how gender relates to the new technological agendas and future prospects of European transport and mobility and innovation is needed. Topics should include and explore one or several of the following subjects:

Examples of questions for further research:

- What are the gendered implications of policies, regulations and new standards and forms of transport governance?
- Gendered patterns of resistance to emerging or missing services, technologies, including dimensions of age, class, ethnicity etc.
- How can gendered innovations optimize market opportunities?
- How can gender equality in transport and mobility be increased e.g. in good practices, public mobilizations and contributions to accountable transport and mobility solutions?

## *Climate action, environment, resource efficiency and raw materials - Societal Challenge 5*

The SC "Climate action, environment, resource efficiency and raw materials" has a major societal dimension and will raise numerous gender issues. The SC5 AG worked on four priority topics mentioned below. Public engagement and governance issues are very common to all these areas and attention to socially responsible solutions (participant, cooperative, grassroots initiatives) is particularly necessary in this field. Gendered social roles, communication practices and power issues need to be taken into account.

Some examples of topic-specific questions also related to gender are provided below:

### Systemic eco-innovation

Both social innovation and technological innovation need to be taken on board here. The research area of "Gender and innovation" has been working along these lines for a long time and can provide pertinent approaches. A systemic approach means that different industrial and commercial sectors have to work together. Gender roles and visions of masculinity and femininity are an important part of professional "cultures" and need to be taken into account.

A change from a consumption-centred economy to a more sustainable model will raise issues such as identity-building processes, domestic practices, attitudes to thriftiness, etc., which are strongly gendered.

### Climate Services

Climate services will need to include an understanding of how societies are impacted by major climate events. Reactions in the face of disaster have been shown to be gendered. Migration behaviours and poverty are too, as well as daily activities that will be impacted by climate change, such as hunting, fishing and agriculture.



Communication around climate change is an important issue that has a gender dimension. How can a massive amount of new information on climate be communicated efficiently to the public? How are maps and satellite pictures understood? How can the uncertainty be communicated? Gender should be taken into account in answering these questions and analysed also in combination with other factors such as age, income level, education level and cultural aspects.

#### Nature-based Solutions

Social representations of "nature" are known to be gendered, so attitudes towards "nature-based solutions" will no doubt be too.

This topic has a particular focus on cities. Ways of occupying urban spaces as well as ways of coping with urban issues such as poverty are strongly gendered. For example, the risk of poverty is significantly higher among single parent (most frequently a mother) families.

#### Sustainable Supply of Raw Materials

The social practices around recycling, and the factors determining its effectiveness, need to be taken on board. Understanding how citizens, business and industries recycle is essential; gender is clearly a factor here.

Attitudes towards mining sites – see the shale-gas controversy - are an issue that is likely to have a gender dimension.

### *Inclusive, innovative and reflective societies – Societal Challenge 6*

Gender is a key analytical category for understanding Europe and the changing character of European culture and society. It is crucial for addressing societal challenges in an intersectional and transdisciplinary way and **it is central to building inclusive, innovative and reflective societies**. The institutional infrastructure for producing knowledge about gender should be strengthened. Gender studies and gender knowledge are necessarily transdisciplinary and intersectional.

The turbulence of regional and global change should be analysed from the gender perspective. It will help perceive key, but often hidden or overlooked, aspects of inequalities and better help combat xenophobia, intolerance and social exclusion. Global inequalities are products of intersecting inequalities hindering economic growth. Research on diverse European traditions should include histories of anti-fascist and women's movements combating social exclusion. Inequalities have a security dimension and the analysis of anti-Semitism, anti-Islam and homophobia should take into account gender inequality as a security risk. Furthermore, European migration has unique new features such as transnational motherhood which requires special attention.

Smart, sustainable and inclusive growth is not possible without specifically addressing gender inequalities in different segments of society. Indeed, a major obstacle to growth in Europe lies in increasing inequalities, and Europe relies strongly on the inclusiveness of its society to boost its economic growth and social welfare. It is the mission of Societal Challenge 6 to point to the obstacles and analyze the possible solutions. In collaborative and creative economies, gender is a decisive factor explaining inequalities and potential restrictions to growth. It is important to track and remove persisting obstacles, which block women from equal access to employment, goods and services such as education, healthcare, housing, digital resources, public services and leisure. These obstacles should be analysed with other factors such as age, family status, domestic and care tasks, income level, leisure opportunities, religion and culture. These should be analysed from various perspectives,

such as social and cultural norms, religious tenets, the legal environment, fiscal regulations and technical options. The gender dimension should be an integral part of the measurement of the impacts of policies.

European heritage also includes women's increasing and formative participation in the European project. Developing Europe's human and social capacities entails a thorough examination of the possible means and ways to achieve gender equality. Research should explore what gender equality means and entails across the various European cultures. Some European countries have already developed innovative solutions and it would be useful to assess their best practice potential for other parts of Europe. Innovative approaches to public governance must include gender equality as a tool for increasing participation and civic engagement. When building up a new generation of public services, gender equality should be a major issue representing diversity.

In the current growth-oriented policy-making, women represent the greatest reserve for the European workforce. Therefore, they should be more engaged as active citizens. Measuring growth and economic potential should include gendered impact analysis. Without explicitly mentioning gender inclusion, it is not possible to achieve inclusive societies. Therefore, the Call on co-creation for growth and inclusion should specifically mention gender as a major challenge for inclusive societies. It should encompass gender budgeting as a policy tool.

Education and skills, as crucial areas of co-creation, should be prioritized including by combating stereotypes in elementary and secondary education, as well as an introduction to gender studies at tertiary level.

The changing nature of the European labour market, the increasing migration of citizens across Europe and the growing inequalities and casualization in work all demand a detailed analysis using a gender dimension. There is growing concern that the negative effects of labour market changes are disproportionately being experienced by women. Moreover, the particular issues that women face make their labour market participation more complex than those of men, considering not only the persisting institutional barriers which prevent them from accessing leading positions, but also the fact they are still responsible for most domestic care duties. Horizon 2020 is an opportunity to encourage research projects that provide further insight into the nature of the problems faced by men and women in particular in highly qualified professional labour markets and in the lower skilled areas, bearing in mind the differences between sectors and countries. Projects should not only investigate the barriers, but also what would enable access to work that offers a fair level of security.

Research should also address the role gender plays in the constitution of the "new economy". The rise of alternative economies based on sharing and cooperation instead of individual ownership and competition results in major re-configurations of the distinction between public and private domains. Private services (e.g. taxis, music, clothing) are reinvented as shared cooperative activities, while formerly public services (welfare state services for care for the young, the elderly and the sick) are reinvented as private services, family obligations and elements in a sharing-economy. Gender scholars have analyzed the distinction between public and private domains, and gender historians have pointed out that the rise of the nuclear families as the location of living and consumption coincided with the exclusion of women from the public sphere of politics and so-called 'productive' waged labour.

Re-privatization of welfare arrangements has resulted in new burdens for women as traditional caregivers. Research on gender specific global chains of care has shown how massive migration is deeply connected with the re-division of care work and productive labour, bringing men and women from poor countries to work in both labour markets and informal economies. Private initiatives to organize alternatives for institutional care are being invented all over Europe (e.g. cooperative living

for the elderly, parents setting up homes for handicapped children). Research on the gendered division of work in such privately organized living arrangements is crucial. Are traditional women's roles (caring, nurturing) an advantage or a disadvantage when sharing and cooperation replace ownership and competition? Does an economy based on sharing and cooperation generate new gender roles or does it re-install traditional patterns of caring women and wage-earning men? Do self-help traditions among migrant communities (e.g. domestic labour migrants without documents, meeting in informal settings) constitute an example of new economic principles?

## *Secure societies - Societal Challenge 7*

The aim of the Societal Challenge "Secure Societies - protecting freedom and security of Europe and its citizens" is to support the implementation of EU policy initiatives on security matters and the competitiveness of the security industry. The gender dimension is a fundamental aspect of sound research in all areas in the field of secure societies. One of the most important elements of the Secure Societies approach is the end-users focus and gender has to be considered as an essential aspect.

Newly developed tools and methodologies need to be designed and tested for diverse user groups such as: police, citizens, different communities and gender groups, and cooperating organisations. Unintended negative consequences of the application of these tools and methodologies for one or several of these groups should be an integral part of the testing.

Gender aspects could be further explored as part of the societal dimension of security, where new research domains are emerging, such as the links between culture, risk perception and disaster management, human factors in security areas, immigration and border control, digital security, new technologies and the fight against crime. A specific focus might be devoted to the international gender dimension of radicalization and counter-radicalization, such as women's roles in preventing and countering violent extremism. Please also refer to the suggestions made for Societal Challenge 6 , Inclusive, innovative and reflective societies.

## *ICT*

### Internet of Things

With the Internet of Things, any physical and virtual object can become connected to other objects and to the Internet, creating a fabric of connectivity between things and between humans and things. These "things" are devices (e.g. cars, cleaning devices, body enhancing prostheses) connected to the communication grid and to applications - which therefore are enabled to sense, to react and to act partially in autonomous manner. The idea is that routine tasks or such like switching off light and saving energy will be performed without involving users, be they women or men. Designing these devices and the programs that run them must therefore take into full account a) gender differences in use and their evolution, and b) their effects on the lives and use of time of people of both sexes.

As an example: within a project on "Active aging", the devices aimed to help elderly people by providing mobile emergency assistance were designed with adherence to the body in mind. This was influenced by the male model of carrying things in a pocket and ignored other approaches, such as the female preference for using bags rather than pockets as carrying devices.

In this new context, integrating women and gender in ICT and overcoming the gender gap in ICT education is much more than just a way to boost the functioning of Metcalf's law, that the more people are connected, the higher is the value produced by a network. The "things" and "objects" connected among themselves and to the net should be designed and programmed to take into account the physical, psychological and social characteristics of the gendered user. It also becomes an imperative to be able to forecast the effects of the Internet of Things on gender relations, as both the possibilities of dominance and control and of empowerment and liberation will increase with the new technologies.

#### Robotics<sup>4</sup>

Women and men differ in their needs for and experience with technology. Women may have less technical experience and less positive attitudes toward technology (Gaul et al., 2010). They may also be more apprehensive about using assistive technologies, such as robots, in domestic environments (Cortellessa et al., 2008). Thus, it is important to include both women and men in technology design. Analysing sex and gender as well as including both women and men users in technology development is a positive action that can lead to better designs and improve marketability of products.

Researchers are developing new assistive technologies to support independent living for the elderly and to lighten the burdens of caregivers. Through participatory research and design with both the elderly and their caregivers, designers are gaining key insights for developing assistive products that are useful to a broad user base. Involving users and stakeholders in the design process enhances outcomes. Building machines based on gender analysis will be important for the development of the next generation of assistive technology.

### *Nanotechnologies, advanced Materials, Biotechnology and advanced manufacturing and Processing (NMPB)*

There are gender differences in the public perception of nanotechnology, biotechnology and advanced manufacturing and processing. Understanding these differences could be of relevance for the up-take of the results by businesses and consumers in the NMPB fields.

For example, biotechnologies related to health (new methods or devices for diagnostics...), blue biotechnology searching for bioactive molecules, and advanced materials and nanotechnologies for health care and energy applications. There is a need for better understanding of the risks associated with nanomaterials, advanced materials and biotechnologies, and the potential differences in the way women and men are affected.

Actions in the focus area of the circular economy will include research and innovation tackling the gap between potential solutions and their societal and industrial take-up and deployment; this could take into account the different roles of male and female individuals as consumers and producers.

The industrial eco-system to deliver nanotechnologies and material technologies to the customer and citizen also requires new strategies taking these technologies from the idea to the product. Topics implemented as cross-cutting Key Enabling Technology (KET) pilot activities will build on

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<sup>4</sup> Conclusion of the case study on assistive technologies in the [Gendered Innovations](#) project

previous research and this is a key point at which gender can be taken into account through taking the KETs forward.

## *Access to risk finance – entrepreneurship*

Gender is a crucial aspect to be taken into account when designing policies and programmes that should be “gender-informed and sensitized”. In order to stimulate better knowledge transfer there is a need to understand the differences between men and women when looking at their readiness and willingness as scientists to go into business and/or create their own business.<sup>5</sup>

The research and activities suggested below could be funded in various parts of Horizon 2020 and not only under "Access to risk finance".

- Study of the gender aspects of financing: how many women ask for money, how many get financed, how many female scientists, etc.? Is there any correlation or causation between female scientists and entrepreneurs and investment levels? What is the level of financial intermediation (i.e. debt, equity, etc.) in R&I intense micro-enterprises and SMEs?
- Historical data assessments: consolidate data and information, disaggregated by gender, from various sources (e.g. Eurostat, PISA, International Fin Stats, WDI, etc.)
- Develop “gender specific variables” and a related “checklist” for banks, financial intermediaries, venture capital, etc. to check and measure “gender aspects of financing”
- Support capacity building, awareness and visibility of gender for both the supply (financiers) and demand (scientists, entrepreneurs, etc., especially the young ones) sides.
- Improve linkages with other EC initiatives in support of gender and entrepreneurship: SME Week, A2F week, Female Entrepreneurship Ambassadors, in more than just the usual way of websites or policy statements or picture-taking events
- Include a call to promote women entrepreneurship, including a cross-country benchmarking at EU level (comparison maybe also with the USA) and a study of the reasons that stimulate or hinder women when opening a business; development and testing of models.

## *Future Emerging Technologies*

FET focuses on research beyond what is known, accepted or widely adopted and supports novel and visionary thinking to open promising paths towards powerful new technologies. FET seeks for genuine cross-fertilisation and deep synergies between the broadest range of advanced sciences and cutting-edge engineering disciplines.

Future and emerging technologies can have a profound impact on our lives and society. Therefore, the Social Sciences and Humanities (SSH) play an important role in the multi-disciplinary research supported by FET. Attention will be given also to Responsible Research and Innovation (RRI), including the gender aspects of appreciation of emerging technologies, thus contributing to a more sustainable future and to a society that is supportive of research.

Specific actions will increase the impact on education. For example, through new academic curricula giving inspiration around FET topics to high-school students, entrepreneurship courses, gender and ethics courses, and training opportunities for industry.

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<sup>5</sup> A very practical example from the US, May 2014, “Gender Effects in Venture Capital”  
[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2445497](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2445497)

## Gender resources: knowledge, expertise and training

### ➤ **The Gendered Innovations project:**

- 1) Developed practical methods of sex and gender analysis for scientists and engineers;
  - 2) Provided case studies as concrete illustrations of how sex and gender analysis leads to innovation. The fields covered were: basic science, engineering and technological development, environment, food & nutrition, health & medicine, transport, communicating science
- "How Gendered Innovations Analysis Contributes to Research" – Expert Report - European Commission - 2013

<http://ec.europa.eu/research/science>

[society/document\\_library/pdf\\_06/gendered\\_innovations.pdf](http://ec.europa.eu/research/science_society/document_library/pdf_06/gendered_innovations.pdf)

### ➤ **The COST Action GenderSTE**

The GenderSTE Project encourages networking between researchers, practitioners and policy-makers on gender equality in R&I; it disseminates methods for sex and gender analysis in research, in the fields of transport, energy, climate, cities and innovation.

### ➤ **Gender Toolkit - How is the gender dimension integrated into a project?**

Developed for FP7, the practical toolkit comprises an overall introduction into gender and research and shows how gender is interwoven with all aspects of research. It then examines in pragmatic terms how the gender dimension of research content contributes to excellence in research. It also analyses case studies based on concrete examples drawn from nine specific research fields: health; food, agriculture and biotechnology; nanosciences, materials and new production technologies; energy; environment; transport; socio-economic sciences and humanities; science in society and specific activities of international cooperation.

[Link](#) (free download)