



WHIST - Women's careers hitting the target:  
Gender management in scientific and technological  
research



# GUIDELINES ON GENDER DIVERSITY IN S&T ORGANISATIONS





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# Executive summary

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Despite of over ten years of interventions geared at promoting equality among women and men in scientific research, in the European Union, as well as all around the world the gender gap remains wide. This entails an important waste of talents and a general risk for Member states and individual research organisations to lose competitiveness.

Studies, measures and actions in this regard have been the object of intense debate which has gradually revealed the need for a **new paradigm** for policies to promote women in science. According to the European Commission, indeed, these policies should more and more aim at strengthening the research and innovation capacity of research institutions, through a structural change focused on the valorisation of all the different skills and competencies available. This is the strategic and political framework of the Supporting Action **“Women’s careers hitting the target: gender management in scientific and technological research” (WHIST)**.

## Effective actions towards gender equality in science

WHIST has been carried out in direct continuity with the Coordination Action “Practising Gender Equality in Science” - PRAGES<sup>1</sup>, which involved the analysis of 125 good practices in Europe, North America and Australia and was concluded by the formulations of “Guidelines for Gender Equality Programmes in Science” (2009)<sup>2</sup>. PRAGES stressed the need to overcome the merely quantitative aspects of the gender gap in science and to base actions and policies aimed at supporting the

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<sup>1</sup> PRAGES was funded by the European Commission, 7<sup>th</sup> Framework Program for Technological Research and Development, SiS 2007, Grant Agreement N. 21775. It was carried out by a Consortium coordinated by the Department for Equal Opportunities of the Italian Presidency of the Council of Ministers. ASDO (Assembly of women for development and the struggle against poverty and social exclusion), the “Women and Gender Differences Center for Study and Research” of the University of Milano and the “Danish Centre for Studies in Research and Research Policies” of the University of Aarhus, that at present are members of the WHIST Consortium, also belonged to the PRAGES Consortium.

<sup>2</sup> The “Guidelines for Gender Equality Programmes in Science” were drafted by Marina Cacace, ASDO, in the framework of the PRAGES Coordination Action. Available at [www.retepariopportunita.it/Rete\\_Pari\\_Opportunita/UserFiles/Progetti/prages/pragesguidelines.pdf](http://www.retepariopportunita.it/Rete_Pari_Opportunita/UserFiles/Progetti/prages/pragesguidelines.pdf)



participation of women in scientific and technological research on a deeper understanding of the difficulties that hinder female careers.

In particular, PRAGES has shown that, to make an impact and get results in the medium and long term actions for gender equality need to adopt at the same time a **holistic approach** (able to take into account the full spectrum of topics and issues to be addressed) **and an analytical one** (grounded on the knowledge of the actual context in which it takes place), in order to identify the most effective solutions.

On this basis, three strategic directions to conduct successful interventions have been identified, namely: make science and technology an **enabling environment** for women, to include the **gender dimension** in the whole process of research and innovation and promoting **women in leadership positions**.

## The contribution of WHIST

The Supporting Action WHIST, in continuity with PRAGES approach and adopting its strategies, was geared to better understand what happens when initiatives to support women in the world of research are actually started, in order to formulate the specific guidelines contained in this text.

The project was centred on the implementation of three **experimental initiatives of gender diversity management**, carried out at the European Space Agency (a public entity engaged in scientific research at international level) in France, the Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO (an Industrial research institute of the Fraunhofer-Gesellschaft) in Germany and the University of Aarhus (a public university) in Denmark. All these institutions tend to be male-dominated and have long been committed to equal opportunities and the change of working conditions in a perspective of work-life balance. By giving primacy to the aspect of concreteness, the project aimed to generate new knowledge from the direct observation of what happened in the three research bodies, when specific actions to change the organisational set up were carried out into them.

Since many phenomena of gender discrimination<sup>3</sup> are rooted in deep and often unrecognised mechanisms, they can be made visible only through action. In this sense, the original contribution of WHIST consisted, not only and not so much in the completion of the three experimental actions, but **in the observation of the activities under way** in order to draw useful lessons for those who wish to foster

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<sup>3</sup> As will be specified in the Chapter 1, para.3.5., the term “discrimination” is used here in a broad sense, covering intentional discrimination, unconscious gender bias and gendered organization practices and assumptions, leading to situations of inequality.





**structural change**, that is durable and of great scope, **in gender relations within scientific organisations**. Obviously, the three experimental initiatives were pilot projects, both for their short-lived and for their limited size, so that their effects probably will become fully visible in a longer span of time than that of the duration of WHIST project.

## The transition from concept to practice

As a whole, the process of conception, design and implementation of the WHIST experiments was conducted as **a single path of experimentation and production of new knowledge on gender dynamics in scientific and technological research organisations**.

The design was carried out between July 2009 and February 2010 through a participatory process, called **Experimentation Planning Road Map (EPR)**, including a first preliminary phase of conception resulting in one project idea for each concerned institute, involving key stakeholders internal and external to the three bodies concerned and the other European partners of the project WHIST.

The experimental activities were carried out between March 2010 and May 2011. To promote their good performance, while maintaining the unity of the experiment and the exchange of ideas and experience between partners, a **joint program of support for experimentation (JESP)** was established, which provided the central coordination, monitoring and work in progress evaluations, as well as a working seminar of three sessions, that were convened at the beginning, middle and end of the activities.

As for the content of the three experimental initiatives, Fraunhofer IAO has adopted a quality-based approach to manage the gender dimension and dynamics in the working environment through a number of integrated actions. These included the draft of **two annual reports** as a tool for the development of “**gender quality**” in the organisation; the improved dissemination of information on gender and diversity at the Fraunhofer IAO **intranet**; the design of a **support-service to parents returning to work** after parental leave and the design and test of a **seminar on gender diversity** aimed at newcomers.

ESA effort was addressed to orient the corporate culture to understand, respect and valorise cultural and gender diversity by means of the **creation of an institutional “Committee” promoting optimal quality of working life** for women; the design and dissemination of **Corporate behavioural guidelines** integrating the gender dynamics; the promotion of a **communication campaign** on behavioural



standards, prevention of unacceptable behaviours and gender diversity at ESA; the implementation of a **pilot programme to support expatriate partners' work**<sup>4</sup>.

Aarhus University has planned two actions, namely the support to the design and implementation of the **action plans for gender equality** in a number of faculties and departments and the support for the implementation of a **mentoring pilot programme** for young women researchers from two faculties. During the experimentation, two additional actions have been designed and implemented, i.e. **incentives for women to follow a career at Aarhus University by establishing 10 new positions at associate professor level and 10 new positions at professor level**; Besides, **the reasons why researchers leave Aarhus University** or science in general were mapped in a comparative gender perspective.

To produce the desired cognitive effect, the experimental activities were followed by an **accompanying research**, which used as empirical basis the observation and the collection of information, carried out through special instruments, but has also made use of all the documentation produced in the course of experimental work.

## Lessons learned and content of the guidelines

These guidelines are an attempt to build on the actual experience and concurrent reflection conducted through the experimentations in WHIST, formalising the lessons learned.

The first lesson was to recognise that any action for gender equality is a path fraught with **obstacles**. The experimentations themselves and the consultation of the literature in the field have allowed us to identify and classify 53 obstacles (see summary table no. 1). These latter relate to two different aspects. The first is the interpretation of gender discrimination in science, the awareness of stakeholders and, consequently, their mobilisation. The second aspect concerns the institutional and operational arrangements of scientific organisations and the possibility that the desired transformations could actually take place.

It has been also possible to verify that, for structural change, the size of the interventions often goes beyond the individual research institute and that it is sometimes necessary to refer to a wider sphere of action, even out the same field of science and technology, acting in the political and regulatory environment at national level.

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<sup>4</sup> The action has been reoriented towards a preliminary survey on the concerned population.



Another important insight concerns the **capacities** that the promoters of actions for gender equality can develop and promote, also in this case referring to the two sides mentioned above, the first interpretative and motivational, and the second institutional and operational, to address the obstacles identified and to be able to achieve the set objectives. These capacities are based on a continuous **negotiation** activity, i.e. dialogue, interlocution, transaction, developed in different areas at different levels, which is necessary in conflict situations or where there are divergent points of view.

Finally, the practical experience of the experimentations and the analysis of the actual practices put in place, together with an examination of the facilitating factors that the three experimental teams have been able to rely upon, has allowed the WHIST team to formulate a set of 61 **recommendations** (see summary table no. 2) for those who want to take a similar path.

The text is divided into **four parts**.

The first part (first and second chapter), starts from the strategic and political context in which the project WHIST was carried out and briefly describes the work done and the lessons learned through the dialogue between the actions and the accompanying research.

The second section deals with a first set of capacities that the experimentations have revealed as necessary for an equitable management of gender differences in research organisations, i.e. interpretative and motivational capacities. In the third chapter, the obstacles encountered in this area are described, as they have been detected in the course of activities, and their catalogue is offered. In the fourth chapter, the actions carried out by the three experimental teams to remove or circumvent these obstacles and proceed with the implementation of the planned activities are examined. Finally, in the fifth chapter, suggestions are provided in the form of recommendations for actions.

The third part deals with a different set of capacities, the institutional and operational ones. It is divided into three chapters devoted respectively to the obstacles and the experiences of the three research institutions in which the experimentations took place as well as the recommendations for action.

Finally, the last part, consisting of the ninth chapter, proposes, again based on the experiences carried out, a series of conditions and possible actions to make a change of scale, triggering a capacity for social innovation, with a broader scope than that of a single research institution, such as to make gender equality in science, a common asset and shared culture also in the community in which it is established.



**SUMMARY TABLE N. 1**

<b>OBSTACLES</b>	
<b>Obstacles stemming from the hidden structure of discrimination</b>	
O1.	Explicit denial of the phenomena of discrimination
O2.	A purely organisational perception of problems
O3.	Women researchers' discomfort with visibility
<b>Unavailability of information and knowledge</b>	
O4.	Lack of gendered statistics in research institutes
O5.	Unavailable or inaccessible information on research institute staff
O6.	Lack of information on previous experience in other organisations
<b>In-house communication problems</b>	
O7.	"Stereotypical" gender communication by research institutions
O8.	Inadequate in-house communication methods
O9.	Difficulty in planning communication activities
O10.	Poorly publicised policies in research institutions
O11.	Absence of institutional communication channels with other promoters of gender equality actions
O12.	Lack of relations between science organisations and government offices
O13.	The isolation of scientific research institutions engaged in gender equality policies
<b>Forms of dissent</b>	
O14.	Resistance to gender-related interventions
O15.	Use of the argument of meritocracy to justify a lack of commitment on gender issues
O16.	Stigmatisation of women involved in positive action
O17.	Male hostility towards affirmative actions addressed to women in research institutions
O18.	Gender bias igniting conflicts among women
<b>Poorly motivated actors</b>	
O19.	Lack of interest in gender issues among research institution managers and leaders
O20.	Indifference of the staff in research institutions
O21.	Divergent visions and motivations in the different departments/faculties involved in programmes
O22.	Difficulties in getting beneficiaries to become involved in actions
O23.	Lack of motivation and specific expertise in managing projects related to gender
<b>Organisational and bureaucratic dynamics affecting the involvement of actors</b>	
O24.	Implementation of gender equality actions depending on other sectors of the research institute
O25.	Overworked staff in research institutes
O26.	Difficulties in maintaining post-project relations
O27.	Ineffective monitoring systems
O28.	Divergences between scientific organisations and project partners
O29.	Problems in solving difficulties in mentorship relations
O30.	Difficulties in designing and implementing appropriate initiatives for women with high level jobs
O31.	Tendency to delegate decisions to managers



<b>Regulatory conflicts or deficiencies</b>	
O32.	"Positive discrimination" as a legal impossibility
O33.	Institutional confusion due to different regulations in different institutions
O34.	Gender issues in scientific organisations are included in the fields of social policy and labour law
<b>Organisational barriers</b>	
O35.	Timetable constraints and mandates of staff in charge of equal opportunities
O36.	Managers involved have too many commitments
O37.	"Expropriation" of project activities by other sectors of the research institution
O38.	Unwillingness of personnel not directly involved to work/participate in projects
O39.	Intra-organisational conflicts in research organisations
O40.	Administrative opposition to the implementation of specific project requirements
O41.	Insufficient administrative support to the project team
O42.	Inadequate allocation of human, technical and logistical resources
O43.	Lack of economic coverage for the work-time spent on projects
<b>Structural inertia</b>	
O44.	The negative effects of decentralisation and organisational autonomy
O45.	Negative effects of the geographical decentralisation of research institutions
O46.	Long, drawn-out activities due to bureaucracy in research institutes
O47.	High turnover of staff in charge of equal opportunities
O48.	Change of priorities during restructuring processes in large academic/business institutions
O49.	Need to redefine the projects on the basis of funding rules
O50.	Bureaucratic problems linked to financial management and reporting procedures
<b>Effects of the economic crisis</b>	
O51.	Changes in corporate priorities due to the economic crisis
O52.	Cutting/downsizing activities already budgeted
O53.	Cognitive effects of the economic crisis



## SUMMARY TABLE N. 2

<b>RECOMMENDATIONS</b>	
<b>Area: demystification</b>	
R1.	Collect and disseminate gender statistics
R2.	Conduct an analysis of gender inequalities within the organisation
R3.	Identify and formalise the intangible and hidden aspects of discrimination
R4.	Adopt a comparative approach to understand gender differences in the organisation
R5.	Highlight the link between gender equality and economic development/competitiveness/innovation
R6.	Highlight the link between gender issues management and life/work quality
<b>Area: shared and consensual vision</b>	
R7.	Adopt a diversity approach that does not lose sight of the gender dimension
R8.	Promote dialogue between women and men
R9.	Create an awareness of gender issues among different types of actors
R10.	Collect the views of potential beneficiaries
R11.	Include gender issues as part of a broader public debate
R12.	Promote specific information on the relevance of gender to science, technology and engineering
R13.	Interpretation of gender issues and possible solutions supported by prestigious figures within the organisation
R14.	Exploit existing tools, traditions and sensibilities in the institute or local area
R15.	Set internal guidelines
<b>Area: the relevance and plurality of communication</b>	
R16.	Conduct ad hoc information and communication campaigns within the organisation
R17.	Pre-testing of communication initiatives
R18.	Exploit existing institutional communication mechanisms
<b>Area: valorisation of competencies</b>	
R19.	Identify and activate people with specific competencies on gender issues
R20.	Set up teams which include researchers that have different competencies and are from different scientific areas
R21.	Include motivated women in planning and monitoring groups
R22.	Allocate resources to researchers involved operationally in gender equality programmes
<b>Area: observing and monitoring</b>	
R23.	Create a network of responsibilities
R24.	Create permanent observatories
R25.	Manage and share information
<b>Area: rules and regulations</b>	
R26.	Take advantage of favourable national legislative frameworks
R27.	Results should be incorporated in new guidelines and regulations
R28.	Establish mandatory gender quotas in staff selection and promotion committees



<b>Area: involvement of institutional leadership</b>	
R29.	Facilitate the direct involvement of the organisation's managers and other key players
R30.	Ensure technical and political support to the administrative staff involved in gender programmes
R31.	Involve decision-makers in working groups
<b>Area: production of benefits for all</b>	
R32.	Facilitate access to external funding
R33.	Promote the participation of men in committees and working groups for the promotion of gender equality programmes
R34.	Consider the needs of beneficiaries from a "holistic" perspective
R35.	Implement visible and measurable arrangements to support the working life
<b>Area: political relations and external synergies</b>	
R36.	Negotiate strategies and programmes with government agencies
R37.	Get the support of regional and local governments in promoting gender equality policies
R38.	Create synergies with advocates and partners at the local level
R39.	Foster a sense of ownership in partnership programmes
R40.	Highlight how relations with the business world can be mutually beneficial
R41.	Promote participation in research organisation networks
R42.	Activate exchange strategies with institutions and programmes that have similar goals
R43.	Use the social capital of key people to solve problems
<b>Area: planning and coordination</b>	
R44.	Clearly define the organisational structures responsible for equality
R45.	Personalised programming of interventions
R46.	Promote "cohort" planning to help groups and networks
R47.	Promote "multi-level" design
R48.	Adopt effective monitoring systems
R49.	Creation of new legal entities for the implementation of programmes
R50.	Select target beneficiaries that are homogeneous in terms of career paths
R51.	Ensure the cultural matching of programme operators and beneficiaries
R52.	Establish committees of experts to supervise and follow up the programmes
R53.	Involve researchers from different disciplines in the programmes
R54.	Prevent problems in accessing data related to privacy
R55.	Choose the right moment to propose the identification and discussion of gender issues
R56.	Facilitate networking within the organisation
R57.	Promote and streamline the exchange of ideas and decisions concerning equality inside the organisation
R58.	Adopt mixed and flexible approaches to implement support programmes
R59.	Avoid "conflicts of interest"
R60.	Have a clear idea of the goals of the actions
R61.	Calculate accurately the time needed for negotiation activities



Part One

**Dealing with Reality**





# Chapter One

## THE CONTEXT AND THE EXPERIMENTATIONS

### 1. Introduction

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Women's under-representation in the scientific and technological research **arena has been the focus of actions and measures for over ten years by the** European Union and other international and national organisations. These policies address, in particular, the lack of **attainment of equal opportunities** in S&T (respect for the rights of women in employment) and the **waste of valuable resources/talents** for the development of science, so as to create more opportunities for renewal of **science content** and expand **research topics**, making **science more in tune** with society.

It is in this context that, under the 7<sup>th</sup> Framework Programme for Technological Research and Development of the European Commission (Grant Agreement 230278), a consortium made up of six European institutions, coordinated by the **Department for Equal Opportunities** – Office of the Italian Presidency of the Council of Ministers (DPO), has carried out the Support Action “Women's careers hitting the target: gender management in scientific and technological research” (WHIST). The Support Action is funded by the **European Commission DG Research**<sup>5</sup> and co-financed by **IGRUE** (the Italian General Inspectorate for Financial Relations with the European Union), **Ministry for Economy and Treasury** (Italy). The Consortium of the WHIST Project comprises, besides the co-ordinator, also ASDO - Assembly of women for development and the struggle against social exclusion (Italy); the Centre for Study and Research “Women and Gender

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<sup>5</sup> The project was funded in the context of the 7<sup>th</sup> Framework Programme, under the Programme “Capacities”, part 5 “Science in Society”, activity 5.2.1. “Gender and Research”, area 5.2.1.1., “Strengthening the role of women in scientific research”.



Differences” of the University of Milan (Italy); the Fraunhofer Gesellschaft, more precisely the Fraunhofer-Institut für Arbeitswirtschaft und Organisation (Germany); the European Space Agency - ESA (France); the “Danish Centre for Studies in Research and Research Policies” of the University of Aarhus (Denmark).

The project aimed at improving the scientific and technological (S&T) research organisations’ capacity of **managing, monitoring and increasing gender diversity** in their midst, with the awareness that making full use of both male and female human resources and scientific talent contributes to the advancement of European science.

In relation to this general purpose, WHIST have pursued the following **specific goals**:

- **test coordinated sets of measures** aimed at eliminating the obstacles to a full gender equality in scientific careers;
- define **guidelines for promoting gender diversity** in scientific organisations;
- promote a **transfer of know-how** and an **exchange of experiences** among different research organisations on the policies for managing gender diversity;
- **favour high-level dialog** between experts, policy makers and managers of public and private scientific institutions, aimed at promoting a **positive attitude** towards gender diversity and the reestablishment of gender balance in decision-making in scientific research.

In order to attain these specific goals, the project has been organised in **five main components**.

The first component aimed at the **preparation of three experimental activities** for the management of gender diversity in science. The second component consisted of the **implementation of such experimental activities**. The third component was intended to activate a **learning process** from the experimentations, by means of an experimentation support programme. The fourth component aimed at **capitalising and disseminating the knowledge** produced through the experimentations, by means of an **accompanying research**. The fifth and last component was geared to ensure **high-quality project management** and to favour a **strong coordination** among the project partners.

This text (which constitutes the main output of the project as a whole) contains a set of guidelines on gender diversity management in S&T organisations.

The guidelines aims at capitalising the outcomes of both the experimentations and the Supporting Action as a whole in order to facilitate the design and development of



future actions. They are part of a wider policy of structural change, launched by the European Commission after the first ten years of activities on gender and science.

The guidelines provide operational guidance for gender equality actions in research organisations, as they emerged from the implementation and analysis of three pilot experimentations, coordinated each other. The project has enabled the team of the three concerned institutions, on the one side, to develop a set of capacities needed for the transformation of existing organisational arrangements and, on the other side, to observe such capacities in action through the accompanying research.

The text is divided into **four parts**.

The **first part** provides a general overview of the work carried out in the framework of the WHIST Project, through the just mentioned combination of experimentations and accompanying research (chapter one). Some lessons learned at the cross-roads of practical experience and scientific reflection are presented, developed through an analysis of the experimentations from the point of view of both their implementation path and the knowledge they allowed to generate (chapter two).

The **second part** deals with a first set of **capacities** linked mainly with the **cognitive and cultural side of gender inequality** in research institutions. Such capacities concern the interpretation of reality, raising awareness, sensitisation and motivation of the actors involved.

The part is divided into three chapters. Chapter three illustrates the **obstacles** met in the experimentations - and checked-in literature - following a taxonomy setup in the project. Chapter four describes the **experiences of the three organisations involved**, analysing the **context**, the **processes** and the **results** of the experimentations, with special reference to the enhancement of capacities mentioned above. Chapter five provides suggestions for action, with specific recommendations related to a set of strategic areas defined during the project.

The **third part** of the guidelines covers other capacities, connected to the **institutional and operational changes** needed to cope with gender inequalities in science. As the second part, also this part is aimed at fostering a set of capacities on the basis of the experimentations. Therefore, this part too is structured in three chapters respectively devoted to the **obstacles** met in the experimentations related to the institutional and operational gender arrangements of research organisations (chapter six), the **experiences** of the three organisations (chapter seven) and **recommendations** for action (chapter eight).

Finally, the **fourth part** (chapter nine), in the perspective of the overall strategy of structural change, proposes a reflection on the conditions allowing to **enhance a**



**capacity for social innovation** and suggests actions to consolidate progress and achievements in the field of gender equality, in the broader context of the relationship between science and society in Europe.

The guidelines are primarily addressed to the leaders and members of the scientific research bodies and public and private universities, as well as groups and associations that aim to implement or enhance initiatives aimed at gender equality in their organisations. More generally, the guidelines are also addressed to public, private and non-profit organisations involved in policy research and in equal opportunities policies, as well as to civil society organisations, business associations and trade unions, scientific associations and networks of national and European media.

The text was drafted by Giovanna Declich (ASDO). The guidelines were developed based on the information and data provided by the teams of the WHIST experimentations, led by Evanthia Kalpazidou Schmidt (Aarhus University), Zineb Elomri (European Space Agency) and Jürgen Wilke (Fraunhofer Institute, IAO), who were also involved in the process of reviewing the final version of the guidelines.

## 2. General background

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Cultivating the best talent in European scientific research is one of the key conditions for achieving the ambitious objectives that the EU has set itself for 2020. There is a widening opinion that, in order to pursue them, European Union and individual member states should support researchers by devising diversity policies able to primarily take into account the differences between men and women.

As it emerges from available data, however, women's position in scientific and technological research is still **far from being balanced and fair** with respect to men, above all at high-level and decision-making positions. Despite the many interventions and investments made over the years, the **trend of women's proportion steadily decreasing at senior career levels** appears to **continue** in time and space and, in some cases, to even **worsen**<sup>6</sup>. The concurrent process of ongoing loss of young and adult women, at a higher rate than men at each educational level or career stage,

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<sup>6</sup> European Commission 2008b



(known as the **leaky pipeline phenomenon**), displays **homogeneous characteristics** in different countries, under the aspect of **obstacles** and **facilitating factors**<sup>7</sup>.

In this scenario, women in STR remain a **minority**<sup>8</sup> and, most of all, tend to be perceived and to perceive themselves as **outsiders**, as token representatives of the group they belong to and who, as a minority, are increasingly visible, subjected to harsher forms of evaluation, criticism and latent discrimination<sup>9</sup>.

Some positive trends have emerged<sup>10</sup> during the last years. Nevertheless, even though some figures suggest a general trend towards growing inclusion and success of women in all sectors of science, other figures show the strength and persistence of the **exclusionary processes** slowing down and jeopardizing their advancement in scientific careers.

The false **gender-neutrality** of science – among other issues - is the basis of the informal and scarcely visible nature of the subtle and often unconscious mechanisms through which women are discriminated against<sup>11</sup>. Actually, **gendered practices and ideologies**, socially and culturally constructed over time in scientific institutions, have structured **the knowledge** that is produced inside them, making it biased<sup>12</sup>.

In consideration of what has so far been stated, it is clear that women's participation in research is not the only issue at stake. It mirrors a broader and deeper **lack of recognition of the gender dimension of science**, affecting its contents, methods and priorities. This has increasingly negative impacts on research quality, research policies and on the use of scientific results in economic and social terms.

It therefore appears necessary to identify the steps to take in order to **bridge the gap** concerning women under-representation in science, taking into account the partial successes of the policies and related supporting measures to promote their participation.

This is no easy task. Experts, scholars and policymakers are increasingly inclined to see gender gap in scientific and technological research as a **complex phenomenon**. Women's underrepresentation in science, because of its

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<sup>7</sup> Berryman 1983; Alper 1993; European Commission 2008b, 2009a

<sup>8</sup> European Commission 2009d

<sup>9</sup> Moss Kanter 1977

<sup>10</sup> She Figures 2009

<sup>11</sup> Etzkowitz 2006, 2007, 2008

<sup>12</sup> Rosser, Schiebinger 2008



**multidimensional nature**, cannot be solved by implementing only measures based on an input-output perspective.

Faced with this challenge, the European Commission has reaffirmed its commitment and willingness to substantially change the situation, while maintaining priority issues related to the relationship between gender and research<sup>13</sup>. The advancements made through the actions and measures taken in the last ten years have been the subject of an intense debate which overall showed the need for a **paradigm shift** in the policies aiming to encourage women's participation in science.

It has been understood, in fact, that the approach must be changed. Rather than devising measures exclusively addressing women to help them to fit into existing systems ("fix the women"), it is necessary to induce structural and cultural change in research organisations ("fix the organisations"), also in order to strengthen their overall capacity for research and innovation ("fix the knowledge").

In this perspective, in May 2009, in concluding the first decade of policies to promote the presence of women in European scientific research, the European Commission issued in Prague a series of **guidelines for the actions** of individual member states and research institutions. The guidelines concern top-level support for change - both at national and institutional levels -, structural change in S&T institutions, management of the consequences of the global economic crisis to accelerate innovation, work-life balance as an element of quality, importance of school science education from an early age to combat gender stereotypes in science.

The practical application of this general approach, however, raises a number of critical issues concerning the conditions necessary to implement, so to speak, a scaling-up process. What measures should be taken to turn a set of episodic interventions, or anyhow interventions limited in scope, into a real institutional reform, deeply affecting the organisational cultures of the involved institutions? How irreversible changes can be induced in the direction of making science fairer and more aware of gender differences?

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<sup>13</sup> For a longitudinal analysis of the European policy on women in science, see European Commission, *Stocktaking 10 years of "Women in Science" policy by the European Commission 1999-2000*, edited by Marina Marchetti and Tiia Raudma, DG Research, 2010, [http://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/stocktaking-10-years-of-women-in-science-book\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/stocktaking-10-years-of-women-in-science-book_en.pdf)



Also in order to investigate this shift, the **WHIST** Project, intended as a **pilot project** for the activation of structural change policies, was financed and implemented under the Work Programme "Science in Society" – FP7<sup>14</sup>.

In fact, it has been a valuable opportunity **to study** what happens, what obstacles arise, what resources can be mobilised and what effects are produced in S&T organisations while changes affecting gender balance are **under way**.

The WHIST Project has been conducted capitalising on the main outputs of the Coordination Action "**Practicing Gender Equality in Science**" (PRAGES)<sup>15</sup>, which resulted in the publication of the **Guidelines for Gender Equality Programmes in Science**<sup>16</sup>, aimed at supporting women's participation in scientific and technological development. To many respects, therefore, WHIST project can be understood as a **continuation** of the PRAGES project.

As a matter of fact, the results of PRAGES highlight the need to go **beyond the numerical data** on the phenomenon and to base actions, measures and policies for supporting the participation of women on a **deeper comprehension** of the difficulties that hinder their careers.

To this aim, the whole WHIST Project and the three experimental activities in particular were designed and have been implemented taking into account the main **theoretical findings** of the PRAGES Project, regarding the adoption of a **strategic approach** and the ways to translate this approach into **concrete actions**.

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<sup>14</sup> "In FP7, the Commission introduced a change in focus from women scientists to the institutions that employ them, to encourage them to change their working environment and culture to better support gender diversity. In 2007 the Commission financed a survey of current best practices and produced guidelines to implementing such change. In 2008, two pilot projects were selected to implement such structural change"; Work Programme 2011, Capacities, Part 5, Science In Society, (European Commission C(2010)4903 Of 19 July 2010), p.20

<sup>15</sup> PRAGES was funded by the European Commission, 7<sup>th</sup> Framework Program for Technological Research and Development, SiS 2007, Grant Agreement N. 21775. It was carried out by a Consortium coordinated by the Department for Equal Opportunities of the Italian Presidency of the Council of Ministers. ASDO (Assembly of women for development and the struggle against poverty and social exclusion), the "Women and Gender Differences Center for Study and Research" of the University of Milano and the "Danish Centre for Studies in Research and Research Policies" of the University of Aarhus belonged to the PRAGES Consortium.

<sup>16</sup> The "Guidelines for Gender Equality Programmes in Science" were drafted by Marina Cacace, ASDO, in the framework of the PRAGES Coordination Action. Available at [www.retepariopportunita.it/Rete\\_Pari\\_Opportunita/UserFiles/Progetti/prages/pragesguidelines.pdf](http://www.retepariopportunita.it/Rete_Pari_Opportunita/UserFiles/Progetti/prages/pragesguidelines.pdf)



As for the adoption of a **strategic approach** for the design and implementation of experimental activities, PRAGES outlined that it manifests itself in **two specific elements**.

The **first element** is keeping as far as possible a **holistic view** to gender inequality. Being aware of the multidimensional nature of gender gap in science and technology allows programme promoters to better manage the indirect and unintended impacts of their own action as well as to cope with the influence of unexpected factors on their programme.

The **second element** is the orientation to identifying and pursuing **clear strategic goals**, the attainment of which could effectively contribute in producing structural, long-term and permanent effects on women's condition in the organisation.

In this regard, the analysis carried out under the PRAGES project highlights the existence of three main strategies adopted, either singly or as a combination, by the most impacting programmes.

The creation of a **women-friendly environment** is a necessary preliminary condition to achieve positive changes in science-gender relations within S&T organisations. This strategy is geared to eliminating the many and often imperceptible factors contributing to hindering women in all aspects of their working life and making them feel outsiders in the science field.

The second strategy is geared to supporting the construction of a science that is **aware of the gender dimension**, in order to counter the false neutrality attributed to science and to overcome the consequent imbalance that tends to privilege the male dimension in this sphere. This imbalance is at the heart of lasting forms of both vertical and horizontal **segregation** of women in research, and produces effects on scientific activities themselves.

The third strategy concerns the promotion of women to **key positions in scientific and technological research as well as in the governance of research institutes**, including those positions dealing with the management of S&T organisations, scientific communication, innovation and evaluation of S&T. Women's greater access to leadership positions would not only restore a condition of equal opportunity but could have positive effects - partly still not predictable - on science policies, career profiles, relations between science and society, and on the quality of scientific research itself.

The features of WHIST experimentations were determined by taking into account the indications to translate these strategies into **concrete actions**.





Women's presence in European research is heavily affected by the organisational context where research is actually carried out. Therefore, owing to the interaction of different variables of a cultural, disciplinary and structural kind, there is a progressive decrease in the percentage of women researchers going from universities to the industrial research field, while public and government bodies are in an intermediate position.

The choice of the kinds of organisation in which to conduct the experimental activities reflected the aim of seeking and verifying – in the field – the peculiarities of the three different research settings as regards the most recurrent obstacles and the possible solutions to the problems encountered.

Moreover, the diversity of the contexts and the inevitable heterogeneity of the situations, enriching the list of possibilities, provided greater possibilities for exchange and dialogue. The decision to work in countries with different cultural and scientific traditions (Denmark, France and Germany) was in line with this orientation.

### **3. Description of the experimental activities and the accompanying research**

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#### **3.1. The experimentation planning and setting up: an overview**

As it has been said, the WHIST project was focused on three experimentations in three different research settings, because of the unique possibility they provided to observe changes while under way, learning from experience. To this regard, it is also to bear in mind that these experiments have been conceived as pilot projects, having short duration and limited size, taking place instead in huge and complex organisations, in which changes are therefore slow and difficult. Their effects are therefore likely to become fully visible gradually after the conclusion of the WHIST project.

WHIST experimentations took place in three partner organisations: the **Fraunhofer Gesellschaft**, more precisely the Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO (**Fraunhofer IAO**) in Stuttgart (Germany) and the belonging Institute for Human Factors and Technology Management of the Stuttgart University



(IAT), the **European Space Agency (ESA)** in Paris (France) and **Aarhus University** in Aarhus (Denmark). The activities lasted 16 months (February 2010 - May 2011).

WHIST's experimental activities were designed between July 2009 and February 2010 using the **Experimentation Planning Road Map (EPR)**. The EPR allowed the three promoting organisations to make a **situation analysis** of gender equality in their organisations. From an initial identification of the general orientations vis-à-vis the contents and objectives of their experimentations and taking into account PRAGES results, the **ideas for the design** of the activities were defined (November 2009). The design ideas were then transformed into **executive projects** (February 2010), after checking with key actors in the sponsoring organisations and other WHIST partners. The design phase coincided with the start-up workshop of the experimentations (coordinated by the University of Milan) in February 2010.

In designing the experimentations, reference was made not only to the theoretical content of the PRAGES guidelines but also to several assumptions.

The first one is the **unitary nature of the experimentations**, being part of a single experimental action intended to produce new and broader knowledge on the factors that can increase or reduce the capacity for impact of gender equality programmes in science and technology. The second is the **priority of knowledge**, which links the success of the experimentations not only to their capacities of triggering transformation processes within the organisation, but also and equally to their capacity of generating new knowledge on gender dynamics in science and technology, considered as a priority as much as it is attaining their practical objectives. The third is connected to the **significance of the experimentations' success** for the whole WHIST Project output. The fourth is the **key role of the accompanying research**, since the observation of the experimentations in their making has been of pivotal importance, both for their success and for that of the WHIST Project.

This is the reason why an accompanying research has been run aimed to systematically record all that is significant occurring in the experimentations, using the latter as an empirical basis. Last but not least, and connected to the accompanying research, the **exchange of information, data and opinions among the experimentation staffs** has been considered of pivotal importance.

To favour their success, preserve their unitary nature and promote exchange of information and data among WHIST partners, the three experimental activities have been accompanied by a **Joint Experimentation Support Programme**, coordinated by ASDO. The programme has been organised into three main components.

**Central coordination unit.** ASDO established a "virtual" **operations room** at its premises, in order to support the partners implementing the pilot initiatives. Through



the operations room **technical assistance activities** have been provided and **communication flows** between the partners has been handled.

**Monitoring and evaluation system.** Monitoring activities have been implemented in order to check the actions, to assess their progress and to produce the information for the continuous evaluation process. Two monitoring modalities have been used, adopting two different approaches, i.e. a technical approach (implementing the work plan) and a qualitative approach (resolving specific problems and non-technical issues).

**Working seminar.** The Working Seminar was geared at presenting and discussing the findings of the accompanying research, illustrating the monitoring and evaluation activities, and facilitating the information exchange among all consortium members and staffs, so as to support experimental activities and, after their completion (June 2011), to outline the contents of the Guidelines for the management of gender diversity. The Seminar has been held three times (April 30<sup>th</sup> 2010, October 28<sup>th</sup> 2010, June 15<sup>th</sup> 2011), at the beginning, in the midst and at the end of the experimental activities.

## 3.2. The experimental activity at Fraunhofer - IAO

### General features and aim of the experimentation

Fraunhofer-Gesellschaft's human resource policies have, for many years, pursued objectives regarding gender issues such as the practice of a **proactive culture of equality**, the search for a **balanced mix** of men as well as women in research teams, support of **work-life balance**, **research projects** planning from the gender perspective and the adoption of gender mainstreaming in **corporate strategies**.

These general guidelines are followed in different ways by the **80 different Fraunhofer-Gesellschaft research facilities of which 60 are institutes**, each of which is relatively autonomous in terms of activities undertaken and management policies. **Gender equality**, **sensitivity** and **needs** are different in the various institutions, with different situations in terms of number of women and as regards the awareness of the importance of gender issues by management and staff.



**The Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO** was founded in 1981<sup>17</sup>. The activities of the Fraunhofer IAO focus on investigation of current topics in the field of technology management. Research projects are conducted in close collaboration with small and medium-sized companies and industrial corporations under direct contract. Through its close cooperation with the Institute for Human Factors and Technology Management (IAT) of the University of Stuttgart, Fraunhofer IAO unites basic university research with applied science and business practice. Both institutes employ a staff of over 400. Amongst them are mainly engineers, computer specialists, economists and social scientists.

Fraunhofer IAO, in particular, decided to carry out its own experimentation to develop and offer actions and services which will **support the staff to work at the best way** possible. At the same time it allows to live a fulfilled life, focusing on the **constraints related to the gender dimension** that might emerge. Fraunhofer IAO experimentation also involves the switch from an equal opportunities approach to one based on **quality**, in which the **management of gender dynamics** can help **driving development and organisational improvement**. In this framework, the prevailing strategy<sup>18</sup> this experimentation coped with was the one aimed at the creation of a **friendly environment for women**. But it was also important for Fraunhofer IAO to make sure that the chosen actions contribute to an increased visibility of women in the area of applied research and to an improved awareness of possible gender specific questions related to the research topics they are occupied with. This is why all the chosen projects were assessed with the help of the PRAGES criteria.

## Actions

The actions were aimed to link existing offers that facilitate gender diversity at Fraunhofer IAO with newly implemented actions and services. More specifically, the entire experimentation on improving gender-quality involved four main actions:

1. draft of **two annual reports**, as a tool for the development of **gender quality** in the organisation;
2. improved dissemination of information on gender and diversity at the Fraunhofer IAO **intranet**;
3. design of a **support-service to parents returning to work** after parental leave;
4. design and test of a **seminar on gender diversity** aimed at newcomers.

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<sup>17</sup> See <http://www.iao.fraunhofer.de>.

<sup>18</sup> Referring to the PRAGES Guidelines.



## Main outcomes

As for the two annual **reports (Action 1)**, it has been decided to change the character of the reports from reports on equal opportunities (EO) to an instrument of gender-quality development. It was also decided to have one “comprehensive report” once a year and a second but also large “intermediate report” four to eight months after every “comprehensive report”. The “intermediate report” focuses on activities with regard to contents and the development of gender diversity quality at the Fraunhofer IAO. The WHIST-teams’ suggestion to list BfC-reports (the German acronym for “Women in charge for Equal Opportunities”) as an explicit agenda item was picked up by the director in charge for personal affairs in order to make the BfC concerns **more visible** at the ILA meetings (ILA - Institutes Leading Committee, which consists currently of 37 leaders of a total staff of about 250 employees). The suggestion was introduced by him at an ILA meeting and was accepted by the body. Both the short reports at every ILA meeting as well as the two annual reports have now more weight within the ILA meetings. It will in the long run lead to a stronger perception and recognition of gender items. They will become a matter of everyday considerations and will lose the image of being something special.

As a result of **Action 2**, the **new intranet presentation** offers much more information and support for young families but also for other social situations. Thus it has changed to a more precious place and more visitors are expected as there have been in the last years. The online survey addressed to the whole staff about the Intranet has shown that the participants appreciate the new designed intranet and that they are interested in the topics diversity and equal opportunities. This also raised many suggestions for improving the intranet offer.

In the framework of the **Action 3**, a **baby present** (a romper suit for the baby with a greeting card from the direction) is offered to all female and male employees at the Fraunhofer IAO becoming parents and a **seminar** has been held **for returners** after their baby break. Overall, the evaluation of the feedback-forms has shown that the participants appreciated that new parents are given a baby welcome package. The baby present, as well as the information offer in the intranet in the Action 2, is a good measure for showing employees with children the esteem of the institute and they can contribute to a family-friendly working environment. Still, also on the basis of the answers, it can be stated that giving a baby welcome present cannot be sufficient. There is need for improvement especially concerning the provision of relevant information for new mothers and fathers, e.g. child day care options at the respective institute and offers like the seminar on re-entry after parental leave.

The **workshop on gender diversity (Action 4)** aimed at identifying urgent changes and was created as part of a continuous improvement system that should improve gender diversity aspects at the Fraunhofer IAO. On the basis of the test



conducted through the WHIST experimentation, it has been decided to adapt the experimentally executed workshop conception and the schedule for the acquisition of participants.

Anyway, as it has been concluded by the experimentation team in its final report, most of the changes reported on will have their effects after the WHIST project is finished.

### 3.3. The experimental activity at the European Space Agency (ESA)

#### General features and aim of the experimentation

The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. ESA is an international organisation with 18 Member States. By coordinating the financial and intellectual resources of its members, it can undertake programmes and activities far beyond the scope of any single European country<sup>19</sup>.

ESA's headquarters are in Paris which is where policies and programmes are decided. ESA also has centres in a number of European countries, each of which has different responsibilities.

ESA follows an equal opportunity policy since 2002, the main purpose of which is to improve the representation of female staff, particularly in engineering and scientific fields, and at management level.

In 2007, in light of the success of its equal opportunity policy in previous years, ESA decided to drive new initiatives from a broader point of view: diversity. Enriched by this inherent diversity in languages and cultures, the challenge for ESA was to realise the full benefit of it to create a **supportive work environment** that enables people from diverse backgrounds to perform at highest levels, contribute fully to the organisation and feel professionally satisfied. To **maximise diversity** ESA had to design and implement internal processes to value everybody's viewpoints and to develop for everyone the opportunity to develop skills and talents.

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<sup>19</sup> See [www.esa.int](http://www.esa.int).



In 2009 ESA decided to launch a wide programme named "Life at ESA", including all initiatives meant to improve quality of life at ESA, satisfaction at work and an healthy and motivating working environment, supporting career development of minorities, including women. A Life at ESA Action Plan has been developed dedicated to maximise the potential of expertise and diversity in the organisation. This Action plan dedicates a large attention to understanding and respect for cultural and gender diversity.

This plan has been promoting new governance and questioning the existing organisational culture. It is well known that minorities are more fragile regarding the balance of a satisfying work environment. At ESA women are still in a large minority at all levels of responsibilities. Even if they are not the only victims of misbehaviour on the working place, they should receive particular attention and support.

This has been, therefore, the context for the actions of ESA's experimental activity, promoted and implemented by the Division for Equal Opportunities and Diversity Management. These actions pursued the following general aims:

- change corporate culture and attitude;
- increase awareness on gender diversity management;
- create optimal conditions to enable ESA women to develop professionally in a friendly work environment.

The experimental activity aimed at creating a women-friendly environment as its prevailing strategy, indirectly addressing also the issue concerning the building of a gender-aware science.

## Actions

The European Space Agency selected the following four actions to undertake its experimental activity:

1. creation of an institutional "Committee" promoting optimal quality of working life for women;
2. design and dissemination of Corporate behavioural guidelines integrating the gender dynamics;
3. promotion of a communication campaign on behavioural standards, prevention of unacceptable behaviours and gender diversity at ESA;
4. implementation of a pilot programme to support expatriate partners' work (the action has been reoriented to an earlier stage as it has been realised that there was a lack of information and internal data on the female expatriation "statu quo").



## Main outcomes

In the framework of the **first action**, very diverse people joined the same **Committee** and all had the same “tone of voice” to give their views and opinions on different initiatives, proposals or projects. Several members have played an important part in the process with active participation in the other actions of the WHIST project. The Committee has been able to promote the involvement of women and the incorporation of a gender perspective in the design, approval and execution of the behavioural guidelines. The Committee has also piloted the new seminar on Managing Diversity in February 2011 which main objective was to give to managers the knowledge, tools and techniques they need to make the best of their cross-cultural teams. It was also about being aware of the current working culture, managing cultural shock, mental programming and above all becoming aware of one’s own bias. The Managing Diversity has been delivered so far with 10 one and half-day sessions to ESA managers in five establishments located in different European countries. With the adoption of a holistic, coordinated and collaborative approach, the experimentation team managed to integrate a gender perspective to be sustainable in a longer-term. The main result of this action is that its members have addressed in May 11 a paper to DG on the preparation of ESA Agenda 2015 to integrate “Life at ESA” topics into ESA strategic objectives.

The **development of the behavioural guidelines (Action 2)** has permitted to integrate the results of gender-sensitive research that was carried out previously at ESA into mainstream policies with a view to developing sustainable knowledge and understanding across the Agency on what is the standard of behaviour in such a multicultural and complex work environment. The behavioural guidelines are now associated with “Life at ESA” programme and perceived by staff as a reference document to check the behaviours of each but more importantly their own behaviour compared to and vis-à-vis others colleagues. With the collaborative approach in producing the guidelines, it gives more acceptability and credibility to the document as staff had the opportunity to give their input and feedback which was, when pertinent, integrated into the final version of the guidelines.

The **Communication campaign (Action 3)** has enabled to start a process of generating greater commitment and motivation from staff. The four posters developed on behavioural standards at ESA and promotion materials (such as pens) with the four behavioural principles have been produced and delivered to the different ESA sites. The Communication campaign has enabled to go beyond producing studies and reports, as it is more about changing the way staff members work together. For the project to be successful it needed the participation and contribution of each and that every one can feel as being part of the project. A wiki has been fully developed and open to more than 2,000 staff members. The experimentation included the launch of a new series of “Women at ESA” articles which staff feedbacks were





extremely positive as they felt it was the first time women were asked the right questions regarding their career perspectives and evolution and the difficulties they meet in their daily work life.

The **survey carried out on Expatriation conditions at ESA (Action 4)** was successful, as 33.6% of ESA expatriate population have participated and given their return on experience on the constraints they face and the support they need and expect from ESA. It is a representative and fair sample of the ESA expatriate population of 1,517 staff, including 510 staff, 131 women (25.7%) and 379 men (74.3%) have replied to the questionnaire, of which 469 (92% of the respondents) have fully completed it (i.e. answered to all questions). It allowed a better knowledge and awareness of expats situation and specific difficulties of women in their career and made possible to identify corrective actions to offer to staff more adequate support according to their needs and constraints.

### 3.4. The experimental activity at the University of Aarhus

#### General features and aim of the experimentation

Aarhus University is a leading European research university with education and research activities in all scientific and scholarly disciplines. The university attracts 25 per cent of Danish research funding, hosts 15 Centres of Excellence supported by the Danish National Research Foundation and has been awarded several European Research Council advanced grants and starting grants. Aarhus University is one of the most rapidly advancing institutions ranked among the top 100 universities in the world with approximately 40,000 students and 11,000 members of staff<sup>20</sup>.

In 2008 Aarhus University signed the "Charter for more women in management" put forward by the Danish Government's Ministry for Gender Equality to raise awareness organisations and the need to **increase the number of women**, among others in universities, particularly in leading positions.

To make the commitment to the principles of the Charter effective, the same year, Aarhus University set up a special **Task Force for Gender Equality**<sup>21</sup>, which worked to define a **human resource strategy** to improve the research environment and

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<sup>20</sup> See <http://www.au.dk/en/>.

<sup>21</sup> Consisting mainly of representatives of the Vice-chancellor's office, human resources and communication offices, heads of faculties and departments, professors and administrative staff and the university's women's network.



make it more attractive for all researchers, which included the aim of increasing the participation of women at all levels.

The **principles** of this strategy were designed to emphasise the awareness of the gender issue, in particular in relation to some "critical areas" for women's career development opportunities (assessment, selection, promotion) and access to scientific leadership. To apply these principles, the Task Force also identified a number of **strategies** concerning, inter alia, flexible working arrangements, support to career development through coaching, mentoring, activation of child-care services, leadership awareness, and academic management of the gender dimension.

It was in this context, therefore, that WHIST's experimental activity was developed, to be promoted and implemented at Aarhus University by the **Danish Centre for Studies in Research and Research Policies**. The experimental activity at the University of Aarhus mainly referred to the strategy aimed at the creation of a women-friendly environment, taking also into account the strategy concerning the support to women's leadership in science.

## Actions

Aarhus University's experimental activity consisted of two actions promoted by the Task Force on Gender Equality:

1. support to the design and implementation of the **action plans for gender equality** in a number of faculties and departments;
2. support for the implementation of a **mentoring pilot programme** for young women researchers from two faculties (16 mentees from the Faculty of Sciences and from the Aarhus Business School).

Two new actions were introduced during the experimentation:

- A. **incentives for women to follow a career at Aarhus University by establishing** 10 new positions at associate professor level and 10 new positions at professor level;
- B. **mapping**, in a comparative gender perspective, **the reasons why researchers leave Aarhus University** taking on positions in other organisations or leaving science in general.

## Main outcomes

As for the outcome of the **action plans (action 1)**, the total development in the share of women scientists at all levels in the different faculties since 2008 sums up to



2.9%, with high increase in the National Environmental Institute (7%) and Health Sciences (6.5%), while the difference in the share of women associate professors is 1.6% but in particular in the Faculty of Science and Health Sciences is very high (namely 4.3% and 3.5% respectively). The big difference is generated in the category of full professors where the increase is calculated to 3.5 %, with the Health Sciences, the National Environmental Institute and the Aarhus School of Business showing the highest increase with 13%, 7,7% and 4,4 % respectively.

The evaluation of the **mentoring programme (action 2)** reveals very positive experiences as expressed by both mentees and mentors participating in the programme. All the interviewees agree that it should become a permanent arrangement, implemented also to the remaining scientific areas at Aarhus University and emphasise the need for mentoring at Aarhus University. Mentors consider mentoring necessary not only from a personal point of view but also from an institutional perspective in order to develop the university as a whole.

As to the **action on hiring women professors (Action A)** the university management decided to implement the action as of February 2011. As the experimentation was concluded in May 2011, effects and impacts of these activities have not been possible to assess in this early stage of operation.

The **mapping**, in a comparative gender perspective, **of the reasons why researchers leave Aarhus University (Action B)** taking on positions in other organisations or leaving science in general, carried out through an investigation of 32 researchers (16 male and 16 female) with a PhD, showed that the reasons why women and men researchers choose to leave Aarhus University are quite similar. However, the study also confirms that the female researchers seem to suffer more in particular due to academic work conditions (long work hours, stress, lacking time to do research), the conditions in the academic work environment (competitiveness, loneliness, lack of recognition) and the insecurity when it comes to job opportunities and career development. At the same time the study reveals a lack of workplace support to overcome the problems forcing the female researchers with young families to leave the workforce in a higher rate than their male colleagues.

### 3.5. The accompanying research

#### General aim

As mentioned, the three experimentations - described in earlier paragraphs - have been part of a single action which, beyond endeavouring to **successfully complete**



the activities planned by the three institutions, aimed to produce **new knowledge** about how and under what conditions actions in support of women's scientific careers can produce **significant effects**.

To this end, the three experimental activities have been accompanied by the aforementioned Joint Experimentation Support Programme. Besides and in relation to this programme, an **accompanying research** - as already stated - was launched, which directly involved the experimentation teams and other consortium partners.

## Theoretical and methodological approach

The accompanying research involved, in addition to a study of the feasibility conditions of measures functional to the promotion of women in science, an **in-depth analysis** of the dynamics and actors involved in the production of forms of **gender discrimination in science**. This analysis was also made necessary by the fact that this discrimination is rarely explicit. Rather, it is prevalently grounded on **hidden and deeply-rooted structures of discrimination** which show a peculiar vitality and a strong capacity to assume new forms, according to the overall transformations affecting societies and institutions. This is the reason why these structures, mostly out of awareness, are difficult to detect and manage, being embedded in language, in the symbolic dimension, in behavioural patterns, in different forms of social action, in well-defined relational configurations, in common sense and in widespread beliefs.

It is important to stress that, to the aim of this guidelines, and for the sake of brevity, the term "discrimination" conventionally covers here different situations: **intentional discrimination** against women, minorities, national or other groups; **unconscious bias** of which involved people are unaware or mostly unaware; **gendered organization practices** and assumptions that fit a masculine model more than a feminine one.

In this perspective, knowing that many of the phenomena related to gender discrimination become fully **visible only in action**, the accompanying research has been **empirically based on what actually happened** during the implementation of the three experimental activities. As a matter of fact, they allowed the research team, on the one hand, to collect information and data necessary to monitor progress and results and, on the other, to acquire a broader knowledge of gender dynamics in science. As the activities were under way it has been possible, using a kind of "**heuristics of action**"<sup>22</sup>, to **observe facts, relational configurations and**

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<sup>22</sup> See d'Andrea L., Quaranta G., Quinti G., (2005), *Manuale sui processi di socializzazione della ricerca scientifica e tecnologica*, Roma, CERFE; d'Andrea L., Declich A., 2005, *The sociological nature of science communication*, "JCOM" 4 (2), June.



**processes** that would have been difficult or impossible to observe in other ways (such as, for example, an analysis of texts and documents or simple interviews).

During the accompanying research, therefore, situations have been observed where "**sociological**" **facts** emerged in opposing discrimination processes, in relation to the actions and measures planned in the experimental activities. To this aim, the observations considered: the **actors** and their **orientations towards action** (or *agency*); the **obstacles** (relational and structural configurations, regulations, behaviours) to the implementation of activities to prevent discrimination; **factors enabling the implementation** of the activities foreseen by the experimental activities (facts, events, situations, but also representations, beliefs, information); other important elements not falling within the three items above, or "**practical issues**".

The analysis of the sources (see below) allowed the research team to collect information on what was going on when the measures supporting women in S&T organisations were actually carried out.

The information units have been considered as "clues" (directly observed and reported in the research diaries of the experimentations' staffs or drawn from in the interaction between experimentations' staffs and technical assistance), of potential phenomena which, in turn, can be considered indicators of broader and more complex dynamics. At the end of the project and in view of these guidelines, these dynamics, which during the experimentations have been seen in their making, have been analysed and understood either as capacities needed to change, or, conversely, as hindering factors to the deployment of such capacities.

In order to collect relevant information, coping with the many facets and dimensions of vertical and horizontal segregation of women in science, the accompanying research made use not only of **continuous** and "**savvy**" observation of the team members of the three experimental activities and WHIST partners, but also of the results and information gathered through monitoring and evaluation activities during the experimental activities.

The overall approach of the accompanying research has been mainly **qualitative**.

The three experimental activities have been considered as many "**fields of observation and interpretation**", in which the phenomena under observation have been identified.

The **actors** considered in the analysis have been divided into two areas, corresponding to the "**promoters area**" - included the **promoters** of the experimental activities, i.e. those involved in the preparation, organisation and conduct of activities, and the "**interlocutors are a**" - included **other actors** involved in the activities and processes they generate. In general, observations regarding the actors helped to



verify not only the **anticipated effects** of the various activities but also any **unforeseen effects**.

**Two specific approaches** have been used in observations: a narrative approach and a critical approach.

The **narrative approach** consisted in the **recording** of what happened during the course of the experimental activities, taking into account important, critical and meaningful facts, phenomena and situations, both concerning the actions and the relations among the actors (promoters and interlocutors), also in the form of obstacles and enablers.

The **critical approach** involved an **analysis** of the observed facts, phenomena and situations, concerning strategies, objectives, recommendations and lines of action, quality elements and practical suggestions.

## Technical tools and sources

The observation of the experimental activities has been conducted by means of a set of tools, including the ones geared at monitoring and evaluating the on going activities under the Joint Experimentation Support Programme, namely:

- a **strategic set-up grid, compiled at the beginning** of experimentation and **subsequently updated** at least once a month as work progressed, used to ensure a correct description of the experimentations, building a **profile** through the use of the three afore-mentioned **analytical levels**, concerning the single activities, the broader actions and each experimental activity as a whole;
- an **observation model**, comprising two tools: the **narrative approach template** (to collect observations in the form of a **running report** or a **diary** to be frequently updated) and the **critical approach outline**, which were not strictly speaking technical tools, but rather a way of **orienting the observation**, as a kind of not-exhaustive **check list**, used as the common basis interactions (by phone and email) between the experimentations' teams and research team occurring at least once a week or, when necessary, even more often;
- a **monitoring scheme**, used to conduct both **technical** and **qualitative** monitoring of the experimental activities at least once every two-weeks, which provided additional information on the progress of activities underway to **verify** that **actual performance is in line with expectations**, and to identify and resolve specific problems and non-technical issues that may arise;
- a **grid for the evaluation of experimental activities**, geared at evaluating the on-going activities, filled twice during the experimentations' lifespan.



Besides the technical instruments specifically devised, for carrying out the accompanying research all the information coming out of the implementation of the experimentation activities, in whatever way they were collected, have been also used.

Summing up the **sources used for the accompanying research**, they consisted of diaries, technical monitoring schemes, evaluation grids of the experimentations, telephone calls and exchange of emails, reports in the joint seminar and in steering committee meetings, other documents concerning the experimentation activities (i.e. reports and self evaluations of actions already concluded, internal surveys conducted among beneficiaries or the whole staff on specific issues), final reports of the experimental activities.



## Chapter Two

# LESSONS LEARNED

In this chapter, which retraces the activities of the experimentation and the accompanying research, we shall illustrate the **lessons learned** from the project, highlighting the **most important findings and achievements** of the WHIST initiatives, gained from both practice and reflection upon it.

The first major lesson was to understand that interventions for the promotion of gender equality in science are areas of action that come up against an **articulated and complex set of obstacles**, which should, first and foremost, be identified and studied using specific tools. The experimentation and research carried out in the WHIST project offered the promoters an opportunity to recognise, formalise and catalogue obstacles hindering actions to promote gender-sensitive science. These obstacles will be summarised in the first section of this chapter and, analysed in the next two sections of the guidelines.

The dimension and complexity of the obstacles give rise to a reflection on the **scope of the interventions**, which often transcends the framework of a single gender balance programme or a single scientific organisation.

The second lesson concerns the existence of and the need for a set of **capacities** to address gender inequality in research institutions, which clearly came out of the experimentation. The term capacity seems to be the best way to represent what happened in the organisations that participated in the WHIST experiment. These capacities, in fact, emerged as qualities which, once activated, were able to produce effects in terms of change.

What is clear is that they are based on different forms of **negotiation** (an activity that will be analysed later), which the three institutions had to activate to overcome the opposition of hostile, or at least not entirely favourable, environments to initiatives such as those proposed.

The capacities identified, summarised in the second section of this chapter, will then be analysed more thoroughly in the second and third part of the guidelines.





Prompted by the difficulties encountered and the capacities brought into play to achieve the project goals and overcome the obstacles, the joint experience of the experimentation and accompanying research led to the formulation of a series of concrete **recommendations for gender equality policies in science**. These recommendations can be found in the third section.

The experimentation confirmed the importance of taking account of two dimensions of change, when undertaking gender equality initiatives. The first includes predominantly cognitive and intangible aspects, such as the **interpretation** and awareness of gender inequality in science, as well as the **motivation** to act to remove the factors of discrimination. The second is the possibility of having a concrete impact on reality, producing changes in the **institutional dynamics** and **operational set-ups** of research institutions. For this reason, the presentation of the obstacles, capacities, and recommendations are organised on the basis of these two dimensions.

It is also believed that the secret of transforming the successes and progress made by research institutions towards gender equality into lasting changes lies in the activation of an overall capacity to exploit the internal changes in the institutions concerned to trigger forms of **social innovation**.

Each of the three sections that follow, therefore, concludes by linking the discussion of the obstacles, capacities and proposed actions to this broader horizon of transformation.

## **1. The obstacles and the scope of the challenge**

### **1.1. Obstacles as a risk factors for action**

The three institutions involved in the WHIST project were able to see immediately that the experimentation involved a **complex course of actions**, exposed to many **risk factors**, due to large and small difficulties which had to be first of all recognised and identified.

Not always, in fact, did things go in the direction hoped for by the promoters, and sometimes the results were unsatisfactory compared to the efforts made. In some cases, the beneficiaries did not fully understand or appreciate the actions targeting



them, in others it was not possible to maintain the enthusiasm generated at the beginning. Sometimes the actions with most chances of success were actually taken over by other departments of the target institution, excluding those who had designed them. In most cases the initiatives were successful, partly because the emergence of obstacles resulted in a organisational learning process capable of finding ways to overcome them.

A first result of the experimentation and the accompanying research, therefore, was precisely the **identification, determination and classification** of obstacles encountered during the implementation of gender equality measures. Several factors hindering the development or deployment of capacities for action on gender were described and catalogued, aided by reference to international literature.

## 1.2. Obstacles to interpretation and motivation

Many of the obstacles encountered during the experimentation, as mentioned, regard the interpretive and motivational dimension of the actors involved, aspects that are mainly of a cognitive nature and which are often the least obvious.

The first set of difficulties encountered by the experimentation regard the **hidden nature of the discrimination** that characterises virtually all male-dominated work environments, science and technology research institutes being no exception. In such environments, as was observed directly, even the women themselves are inclined to deny the existence or the significance of gender issues. It should not be taken for granted, therefore, that an organisation decides to initiate or strengthen actions in support of gender equality. This is certainly true of research organisations, where there is a very widespread opinion – largely disproved by the facts – that the rules governing scientific activity (meritocracy, result-orientation, etc.) in themselves prevent the emergence of forms of discrimination.

Other obstacles to the initiatives in the experimentation regard the production of **information and knowledge** to document the presence of factors contributing to gender discrimination in the target organisations. It was not always easy to counter the scepticism of many internal interlocutors, because this type of initiative was, in many ways, unprecedented in the three organisations, hampered by privacy issues or the impossibility of accessing complete or updated information on the staff.

Moreover, the three experimentation teams also had to deal with **communication dynamics inside and outside** the research organisations. Often this communication is slow and inadequate and tends to reproduce gender stereotypes or stereotypes concerning the fundamental characteristics of research or scientific disciplines. Thus,



for example, it was not always easy to make use of internal communication tools such as the intranet, characterised by rigid protocols or obsolete set-ups.

Furthermore, the investigators ran into various forms of **dissent**, which usually remain more or less latent but which exist and inevitably emerge when initiatives are taken, becoming visible and raising issues that are usually not talked about. This happens even more often when the measures taken are to the advantage of a particular group (such as women), apparently at the expense of other groups, who may feel discriminated against (such as young male researchers).

As well as open dissent, the attempt to mobilise human and material resources for the implementation of planned activities also came up against a **lack of motivation among the actors** involved in them. In addition to the general indifference of the male staff to gender issues, in some cases the various departments involved and the beneficiaries themselves had divergent views. In a scientific organisation, especially if large, it does not always follow that a decision made by management to accept a project is shared by those who must then implement it, or that its objectives and its content are interpreted in the same way by everyone. This is certainly true of institutions which have multiple decision making bodies and which may not all be located in the same city (or even the same country), like some of those in which the experiments were conducted.

The difficulties in motivating and mobilising people seemed in many cases to also be closely interrelated to **organisational and bureaucratic dynamics**, which greatly affect their actual involvement, such as excessive workloads, difficulties in developing monitoring mechanisms, dependence on areas and departments of the institution which have different priorities and work schedules to those of the promoters.

### 1.3. Obstacles to institutional and operational change

During the experimentation, as already mentioned, many of the obstacles found were also of an institutional and operational nature, some of which are macroscopic in dimension.

First, the experimentation came up against **regulatory conflicts or deficiencies**, which can make it impractical or extremely difficult to implement even measures enjoying broad consensus in research institutes. For example, a national law or the constitution itself can prevent the implementation of positive discrimination, even when a particular group has been shown to be at a disadvantage.



In addition, the experimentations often had to face a series of **organisational barriers**, i.e., small and large-scale issues regarding, for example, the allocation of resources, the arrangement of working hours and contracts, intra-organisational and interpersonal rivalries that characterise all organisations, especially complex ones. In several cases, these factors weighed heavily on timelines and the probability of success.

But more than contingent factors, what became of central importance for the experimentations, as it would be for any reform process, was a kind of **structural inertia** that characterises the normal operation of large institutions, especially public ones, which makes any change difficult and slow. Aspects such as high staff turnover in some sectors, cumbersome administrative and bureaucratic procedures, the negative effects of some institutional characteristics such as geographical decentralisation, or organisational and decision-making autonomy, slowed down and complicated planned activities.

Last but certainly not least, there were the effects of the global economic crisis to contend with, which has immediate effects on the priorities of institutions and their ability to effect decisions already taken (due to staff cuts, for example, or a changes in priorities in the calendar of activities).

## 1.4. The scope of the challenge

In the light of all the obstacles listed above, the experimentation and the accompanying research made it possible to **redefine the arena for change**. Progress towards gender equality, in fact, requires changes in institutional set-ups, organisational cultures, and the current practices of research institutions. **The creation of a deep and irreversible impact on these issues goes beyond the scope of internal policies**, whether they are specifically aimed at balancing gender, or a more prudent management of human resources. In some ways, it goes beyond the scope of scientific and technological research itself.

Very often, indeed, to introduce significant changes it is also necessary to act outside the organisation, communicating, creating alliances and involving external actors.

This does not mean that the field of action is not wide for every research institution to develop and implement plans for change. However, promoters should analyse all the issues that come into play, understand them and take them into account in the design and in all subsequent implementation phases.



It is not a question, or not only a question, of widening the scope of the analysis, but to identify, each time, the **appropriate field** to treat a specific aspect of gender inequality. As we shall see later, in some cases it is necessary to refer to the central authorities of the state (for example, to apply for exemptions to existing laws), while in others, negotiations must involve interlocutors within the target institution (such as researcher trade unions), or the establishment of new relations with enterprises or external organisations is necessary, using, where appropriate, the individual social capital of the personnel involved.

## 2. The capacities required of actors promoting change

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### 2.1. Capacities and negotiation

Faced with a risk situation and the obstacles described in the previous section, the experimenters showed tenacity and inventiveness, gradually developing **capacities**, both in terms of **understanding** and **intervention**. The accompanying research showed that these capacities are essential for anyone working towards the goal of altering the gender balance in a scientific organisation.

As mentioned above, the organisations involved often seemed to be opposed, if not openly hostile, to innovation. It should be remembered that in many cases the problems transcend the gender dimension and refer to the more general difficulty of introducing profound and lasting changes in large organisations.

Every activity undertaken, then, was the result of more or less explicit **negotiation**, which covered not only the ordinary aspects of everyday activities, such as space and time, but **also more fundamental issues**, such as the existence of forms of discrimination, whether to introduce special measures openly in support of women, or whether to support all women or only the best.

Therefore the category of **negotiation** was deemed useful to describe what happened in experimentations, which can be defined as an activity that involves two or more persons or groups of people who interact to resolve an issue on which there is no agreement. This category can also include, according to an accepted definition



in the social sciences, activities which, while not requiring direct discussion, are still aimed at changing the social set-ups in question<sup>23</sup>.

By observing the activities in progress, interacting and discussing with the promoters and, above all, reflecting on their difficulties and their successes, it was possible to understand the **centrality of negotiation** for the success of their efforts.

Through the **double perspective of capacities** manifested (or to be developed) and the forms of **negotiations** that were actually used, it was possible to observe and classify the actions taken by the promoters to overcome the obstacles, taking into account the different contexts, the operational models adopted and the results achieved.

## 2.2. The capacity to interpret and motivate

A first, important capacity that the experimenters demonstrated was the capacity to **interpret** the origin and the profound dynamics of gender discrimination and, at the same time, **motivate and mobilise** the different actors in the institution to help remove them.

First, when there was not enough data readily available, action was taken to access information, finding ways to overcome restrictive regulations and operational difficulties. Then, updated statistics on horizontal and vertical segregation of women in organisations were produced and disseminated, adopting, wherever possible, a comparative approach. In doing this, a form of **interpretive negotiation** was implemented, that is one directed at building and disseminating an idea of the discrimination of women in research institutions that highlighted the extent and depth of the problem, avoiding simplistic and minimalist views and uncovering the reality of the stakes involved.

At the same time, the experimenters worked on the internal environment and other factors that affect **motivation for action**. To this end, steps were taken to: systematically collect the views of actual and potential beneficiaries; gradually create internal consensus on content; arouse interest in the issues; prevent the development

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<sup>23</sup> The concept of negotiation has been used in research projects and experimentations aimed at equal opportunities for women in male-dominated areas, such as the "Women and politics" project, co-financed by the Lazio Region and the European Social Fund as part of the EQUAL initiative. See in this regard, Colonnello C., Cancedda A., Caiati G., *Linee guida per la promozione delle pari opportunità in ambito politico e sindacale*, Progetto RADEP, Donne e politica, Rome, 2008



of hostility towards the actions; promote closer internal relations; increase the visibility of women in the organisation; review the forms and content of internal communication.

These can be seen as forms of **symbolic negotiation**, aimed at disseminating and sharing, through public communication, cognitive structures that have a mobilising effect (symbols) about the value of women's contribution to science.

These actions, which show an increase in interpretive and motivational capacity in the experimenters and a constant exercise of different forms of negotiation, have resulted, in the target institutions and also to a certain extent outside them, in: increased awareness of gender issues among the staff; the emergence of new demands for knowledge; the expression of new needs for training and services; greater transparency; an increase in the visibility of women in the organisation; the identification of new priorities in public agendas; the mobilisation of internal actors beyond the duration of the experimental projects; the emergence of an interest in the actions being undertaken in other research organisations.

## 2.3. The capacity to bring about institutional and operational change

In addition to interpretative and motivational capacity, the experimenters also worked on boosting **institutional and operational capacity**, developing negotiation skills to implement **changes in rules, organisational operations, and day to day behaviour**.

As mentioned above, during the experimentation it was necessary to carry out negotiations, both inside and outside the target institutions. In some cases, negotiation with the outside was at a high institutional level, also involving the government of the country. As regards the institutional situation within the target organisation, new ways of using existing tools were proposed (for example, the preparation of periodic reports on equal opportunities), or new forms of institutional communication were implemented (such as inter-institutional committees).

These two types of action, albeit different in scale, may both be considered as forms of **institutional negotiation**, having the goal of changing the rules of the game that tend to reproduce the status quo causing discrimination against women in organisations.

To be effective, then, the three experiments had to implement **interventions that could impact the material and environmental reality** of the target organisations,



working to ensure that the agreed initiatives were actually carried out. To this end, it was essential to collaborate with the administrative staff, a key actor in getting things moving and unblocking situations.

To facilitate the implementation of planned initiatives, constant efforts were made to include and involve more interlocutors in the implementation and monitoring of new activities, starting from the operational sectors of the institution and then going on to the associations of employees and also external parties, such as HR managers of similar organisations.

In many cases it was necessary to rethink and redesign some of the activities during implementation to take account of occurred changes.

All these examples can be seen as forms of **operational negotiation**. This activity concerns the realm of **material power** and involves getting things moving, changing attitudes, behaviours, and procedures to make **concrete improvements to the position of women in organisations**.

The results of experiments on institutional and operational capacities included an increase in the competencies of the beneficiaries; the establishment of new relations between departments of the same institution; the triggering of new internal communication dynamics; the confirmation or reissue of the experimental programmes; the introduction of new measures and procedures; a review of internal policies; the design of new initiatives and new *modus operandi*.

## 2.4. The capacity to trigger social innovation processes

Finally, the experimentations and the accompanying research were able to see a **third capacity** at work, as yet still underdeveloped during the WHIST project, based on the deployment of all capacities and, therefore, employing the different forms of negotiation described above. This capacity could be termed **social innovation**.

It refers to the possibility of having gender equality reforms implemented within research institutes ignite an **irreversible change** in the institutions themselves, so that they become a **common heritage and an integral part** of both **the scientific and technological research system**, and the **social culture of the region**. At the end of the next section we will discuss some of the conditions required to activate this broader and more complex capacity.





### 3. The policies of research institutions and guidelines for action

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The joint course of action of the three experiments and the accompanying research, as seen in the preceding paragraphs, provided a series of lessons to learn about the design and implementation of gender equality initiatives in research institutions. First, a number of key issues were identified and obstacles were described in detail, which in many cases were successfully overcome in the three pilot projects. These obstacles and their solutions were used to identify at least three sets of capacities to develop and employ to promote gender equality, namely interpretive and motivational capacities, institutional and operational capacities, and social innovation capacity.

This experience, the difficulties encountered and the ways to overcome them, produced an additional result, which, because it is replicable and transferable, can be considered the most important. It is the identification of a number of **strategic areas** that represent a **practical articulation** of interpretive and motivational capacities, on the one hand, and institutional and operational capacities, on the other. To suggest how to concretely develop these capacities, the promoters of the experiments and the research formulated a series of recommendations for action.

The guidelines, therefore, include a series of recommendations for each strategic area, formulated by drawing on the situations that actually occurred during the WHIST project. They are as streamlined and concrete as possible so as to capitalise on all the findings and lessons learnt during the experimentation.

Finally, at the end of this section, we shall present some of the conditions required to activate the capacity for social innovation, which was identified thanks to the WHIST experimentation, even though, as mentioned above, the scope of this capability transcends the dimensions the project.

#### 3.1. Building interpretative and motivational capacity

As regards the building and employment of the capacity to interpret and motivate, the first strategic area concerns the **demystification** of the denial or minimisation of the problem of gender discrimination. Experience and the suggestions of the experimenters in this regard emphasise the importance of statistics classified by gender, and recommend providing continuous updates and studies on the matter to



decision makers, on both quantitative aspects and less visible but equally damaging problems for gender equality, highlighting how an appropriate management of these aspects can benefit the quality of work and, in general, the scientific competitiveness of the institution.

The second major area in which efforts should be focused is the development and dissemination of a **shared and consensual vision** of the problems and how to solve them, involving the highest possible number of internal actors.

The often conflicting experience with the communicative dynamics inside and outside the target institution made all the experimenters aware of the importance of focusing on the **relevance and diversity of communication tools**, the subject of the third strategic area.

Of great importance for the pilot projects to motivate and mobilise people was the opportunity to capitalise on the existing experiential and cognitive capacities. Another series of recommendations emerging from the WHIST experience, therefore, regards the **valorisation of existing competencies** in the target organisation.

Finally, experience confirmed, sometimes bitterly, that the achievements in the field of gender equality can never be taken for granted. For this reason, the last area of interpretative and motivational capacity is **the continuous monitoring** of the situation in the target organisation as regards the phenomena of discrimination.

### 3.2. Building institutional and operational capacity

The concrete experience of the experimenters and joint reflection during the accompanying research enabled them to determine the strategic areas of action to build or strengthen the **institutional and operational capacity** of research institutions.

The first thing to be highlighted is the **importance of regulatory instruments**, whether national laws or internal regulations, promoting implementation and development.

The recommendation to **actively involve the institutional leadership** of research institutions, already made by the European Union at the end of the first ten years of policies on gender equality in science, was confirmed.

Moreover, the most successful actions were those that could transcend the interest of the targeted women and **produce benefits for all**.



One of the key areas for institutional and operational capacity, but also, as will be discussed later, to promote the emergence of a capacity for social innovation, was the practice of **political relations** and **synergies with outside organisations**.

Any measure that is adopted only works and is feasible if due attention is paid to the **design** and **coordination** of all efforts towards gender equality.

### 3.3. Contributing to the emergence of a capacity for social innovation

As mentioned, the WHIST project made it clear to the promoters that in many cases the field of action for gender equality transcends the boundaries of a single research organisation and lasting results can only be achieved if there is a **change of scale**.

General reflection on the results made it possible to identify certain **conditions that must be met** to activate a capacity for more general social innovation, impacting the scientific research system as a whole, allowing it to capitalise on differences and be more in tune with society.

For each of the conditions identified through the experimentations and accompanying research, possible actions have been suggested, which will be discussed in the fourth part of these guidelines.

The first condition to trigger a capacity for social innovation that raises an awareness of gender differences in scientific institutions is to create a link with existing forms of **collective action for women**.

The second condition regards the establishment of **stable relations with national and territorial political and cultural institutions**.

The third involves **raising awareness in the general public by means of mass communication**.

The fourth involves promoting **the participation of citizens**, which can also be done through social networks.

The fifth, finally, is to support the formation of collective political intelligence to **create and develop networks and synergies among the actors committed to gender equality in science**.



Part Two

**Interpretative and Motivational  
Capacity**



*To combat discrimination against women in scientific institutions it is essential to develop and share the capacity to interpret its origin and hidden dynamics. Exercising this capacity involves negotiating how gender issues are understood and addressed within individual research organisations.*

*At the same time, it is important to motivate the different actors in research organisations to make a contribution, big or small, towards change. To do this, therefore, shared visions and goals must be identified and communicated effectively to activate and capitalise on the passions and energy of different people and groups.*



## Introduction

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**Understanding and sharing a problem makes it easier to find solutions to solve it.** This applies also in the fight against the discrimination of women in scientific research.

The research carried out within the WHIST framework, which, as mentioned earlier, has accompanied the experimentations at the Fraunhofer Gesellschaft, more precisely at the Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO, the European Space Agency (ESA) and the University of Aarhus (AU), provided some indications in this regard.

The experimentations have shown, firstly, that many difficulties are related precisely to the fact that the "enemy" is **elusive and invisible**. This leads many to **deny**, even in good faith, the very existence of a gender gap. At the same time there is a risk that inequality is perceived as a **marginal or specialist** problem, rather than a matter which concerns the meaning, existence and the very future of a research organisation, and, above all, those who work there, regardless of gender, position or status.

The experimentations showed, moreover, that even in cases where there is an awareness of the gender issue, it is often understood and formalised in a way that is too general: this makes it difficult to deal with in a focused and concrete fashion. Sometimes, moreover, the identification of all signs of discrimination, both large and small, is carried out sporadically, making it difficult to implement **systematic and lasting change**. Added to this is the fact that not all those who deal with these issues, despite their commitment and dedication, understand the importance of an **updated and analytical understanding** of the phenomena of discrimination.

It is sometimes also difficult to reach an adequate degree of **consensus** about this type of initiative. Sometimes, in fact, there is not sufficient determination to develop a **vision** and a message that can **mobilise and direct the energies and passions** of the many people who potentially might be interested in these issues. Or it may be that those who deal with these issues live in a sort of niche environment, without being able to **communicate** their experiences or exchange opinions within the organisation itself, thereby preventing initiatives that could have a very real impact.

There is, therefore, a **problem of interpretative and motivational capacity**, which must be built through specific interventions.



This capacity is the **ability to produce and negotiate a real representation of discrimination against women in the world of research**, and foster greater **awareness and sensitivity** in those involved in scientific organisations. This can be achieved by collecting, processing, sharing and disseminating information, and by building consensus among all the actors in an organisation. **Negotiation**, in this case, is an activity aimed at producing and disseminating an interpretation of the real situation of women in scientific organisations, where often the existence of gender discrimination is denied even by the women themselves. This negotiation can, among other things, increase awareness of segregation (both "horizontal" and "vertical"), demonstrate the falsity of the assumption that science is gender neutral, show the possible discriminatory defects and effects of internal procedures, and mobilise people's consciences. Moreover, interpretative and motivational capacity aims to **redefine the role of various actors**, within research organisations, in the analysis and solution of these problems. Of particular importance is **"symbolic" negotiation**, which concerns the symbols of scientific activity, which today are still strongly male oriented. This symbolic negotiation aims to include women, female qualities and excellence in the very representation of science.

The next three chapters contain information and suggestions on how interpretative and motivational capacity can be **constructed operationally**.



# Chapter Three

## OBSTACLES

Research in WHIST had as main source the design and implementation of the abovementioned experimentations. What came to light was a set of obstacles, both tangible and intangible, to interpretative and motivational capacity, which should be understood and tackled. These obstacles are described below, grouped into 6 categories:

- problems due to the **hidden structure** of discrimination (see Chapter 2);
- difficulties in the production of **information** and **knowledge**;
- problems regarding **communication** within organisations;
- existence of forms of **dissent**;
- poorly **motivated actors**;
- **organisational and bureaucratic dynamics** that hinder the involvement of the actors.

### 1. Obstacles stemming from the hidden structure of discrimination

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A series of obstacles that prevent a proper interpretation of gender discrimination in research organisations stems from **hidden mechanisms** that produce negative effects, despite observable improvements - such as an increase in the number of women in science faculties and in male-dominated professions. These mechanisms represent a sort of **cultural, social and psychological matrix of science as**





**belonging to the male domain**<sup>24</sup>, consisting of inherent linguistic structures, the symbolic dimension, automatic patterns of behaviour, and widespread and deeply rooted convictions and beliefs.

## O1. Explicit denial of the phenomena of discrimination

When designing initiatives to create a better working environment in scientific organisations, the dominant view is, very often (even among senior managers), that there is little discrimination in terms of gender differences and no need to adopt terminology related to gender discrimination. Even clear evidence is denied, arguing that women do not need help. This point of view, carried to an excess, can nip in the bud any programming of gender equality actions and may prevent some critical situations from being explicitly addressed (for example, the issue of sexual harassment).

## O2. A purely organisational perception of problems

The gender dimension in research organisations is usually poorly perceived and rarely dealt with by management and staff in general (both male and female). As a result, any problems encountered by female researchers are regarded as a simple question of organisation, without taking into consideration the specificities of the situation and the effects they have. This lack of awareness is also reflected in the tendency to attribute some difficulties (more for women than for men) to the general characteristics of scientific work, and not to specific acts of discrimination, or women being the object of specific factors of discrimination.

## O3. Women researchers' discomfort with visibility

In scientific organisations women find it difficult to deal, publicly and personally, with issues related both negatively and positively to gender. This difficulty can turn into fear when there are delicate issues at stake such as mobbing or bullying. There is therefore a certain reticence among women to talk about the difficulties encountered in their careers due, for example, to the work of family care or episodes of discrimination experienced in the workplace, or cases of serious misconduct that have been witnessed. However, this reticence also extends to their professional achievements in the broader context of the relationship between women and science.

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<sup>24</sup> Cacace, M. (2009) Guidelines for Gender Equality Programmes in Science, PRAGES Project, Rome, p. 24



## **2. Unavailability of information and knowledge**

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Another type of barrier involves the **availability of basic information** on discrimination in the organisation, and the difficulty of increasing knowledge on this phenomenon. The four main obstacles of this kind, as emerged in the experiments, are described below.

### **O4. Lack of gendered statistics in research institutes**

The lack of data broken down by gender on research institute staff, making it impossible to define the situations of horizontal and vertical segregation, is a major obstacle to the identification of gender discrimination and the design of interventions aimed at promoting equality.

### **O5. Unavailable or inaccessible information on research institute staff**

One operational difficulty in the design and implementation of programmes for gender equality is related to the lack of or inaccessible information on research institute staff and their families. This situation may be due to specificities in the employment contract, collaboration with researchers from bodies with different legal set-ups, lack of communication between scientific staff and administrative staff. Sometimes this problem is also related to methods of recording data on institute staff, or the existence of external and internal regulations, which often produce codified procedures that slow down decision-making and the implementation of activities. This is the case with the privacy law, which makes it structurally difficult to access biographical information (or add to it, where, as often happens, there is little information) about staff benefiting from initiatives, so that it is necessary to ask permission from internal and external authorities before being able to contact (even electronically) the beneficiaries themselves.

### **O6. Lack of information on previous experience in other organisations**

Especially during the conception and design of initiatives for gender equality (mainly when the organisation does not have a pre-existing tradition), together with a lack of basic data on staff there is also a lack of information on experiences carried



out in this field by bodies that perhaps are very similar in institutional terms (e.g. other institutions belonging to a national research council, which often enjoy managerial and administrative autonomy).

### **3. In-house communication problems**

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Another set of obstacles concerns communication within research institutions. In particular, these barriers concern the **difficulty of communicating and sharing** visions, symbols, awareness and information about gender issues, and about what is being done or can be done to solve problems of discrimination.

#### **O7. "Stereotypical" gender communication by research institutions**

In research organisations, especially those involved in advanced technologies, it seems that any communication regarding gender issues is to be necessarily confined to limited areas (e.g. the celebration of International Women's Day). In addition to producing a quasi caricature of women researchers and scientists, this makes it difficult to broaden the discussion on gender equality in science to include the problems that women face in everyday work.

#### **O8. Inadequate in-house communication methods**

Ordinary in-house communication methods in research institutions can be an obstacle to the implementation of initiatives aimed at promoting gender equality in science. This can occur in meetings, workshops, on-line consultations, etc, in terms of method, timing, message content or communication mode, creating discontent or negative reactions among heads of the departments (personnel management, internal communication, etc) concerned with the equality-oriented initiatives. The consequences can range from a lack of cooperation to explicit opposition. Communication difficulties may be exacerbated in cases where there is a high turnover of staff, or where is an internal culture receptive to new types of communication (e.g. use of wikis).



## O9. Difficulty in planning communication activities

Large and highly bureaucratised organisations may find it very difficult to get sufficient participation from beneficiaries potentially interested in raising awareness and setting up training initiatives on gender equality, despite considerable efforts to convene meetings and disseminate information about the programme. This situation probably occurs because of the very long time required to organise in-house events and the need to communicate the events in official institutional channels.

## O10. Poorly publicised policies in research institutions

One of the difficulties identified in the implementation of gender equality measures in scientific organisations (particularly in male-dominated areas) is to raise awareness and promote appropriate measures within these organisations. Often even the promoters are unaware of how little is known about gender policies by those who should be implementing them or benefiting from them. This is probably due to lack of in-house publicity and awareness raising activities on the one hand, and management training on the other.

## O11. Absence of institutional communication channels with other promoters of gender equality actions

One difficulty, at least in the initial phase, for gender equality projects in research institutions, is the absence of pre-existing institutional communication channels with other enterprises or entities that have promoted similar gender equality of measures. This can make it difficult to acquire information about similar past initiatives.

## O12. Lack of relations between science organisations and government offices

The success of gender equality programmes in some research centres is affected by a lack or complete absence of relations with relevant government offices, making it impossible to build synergies in target areas (for example, the creation of support services for women scientists). In some cases, government offices themselves show low levels of awareness and/or interest for the target issues. The heads of some programmes complain of difficulties in relations with the public administrations who fund them.



### O13. The isolation of scientific research institutions engaged in gender equality policies

Often the promoters of gender equality interventions in scientific organisations, especially in the case of pioneering initiatives, experience a strong feeling of isolation not only within their own organisation but also in the relations between their own organisation and other similar institutes.

## 4. Forms of dissent

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A fourth set of obstacles relates to the existence of **more or less open forms of dissent** towards the fight against gender discrimination in research organisations. This dissent can occur in the form of a denial of the existence of discrimination, male rejection of greater female presence and importance, opposition to the results of gender policies, or opposition to projects in this field.

### O14. Resistance to gender-related interventions

In scientific organisations, opposition to giving women scientists greater visibility and gender issues in general is often found in the communication department and in the scientific staff. This means that, to avoid conflict, gender interventions may be downsized: in this way, a number of problems are tackled indirectly or by using more general approaches, such as "diversity"; or it may be that, after a period of high visibility, terms like "gender" and "female" fade into the background.

### O15. Use of the argument of meritocracy to justify a lack of commitment on gender issues

The strong conviction that scientific research is an atypical profession, in which meritocracy reigns regardless of gender, is often cited, more or less explicitly, as a reason for not addressing issues that could reveal the existence of discrimination against women. This conviction is reflected, for example, in the use of gender-neutral methods and tools to identify the causes of people dropping out of academic careers,



thus producing results that are interpreted without considering the gender of the respondents.

## O16. Stigmatisation of women involved in positive action

In different working environments and contexts (in both scientific and non scientific organisations), women involved in various capacities in the results of positive action are stigmatised. This involves a series of effects on beneficiaries and their working environment, such as, for example (see also obstacle O3): women deciding not to participate in programmes specifically targeted for them; negative evaluations by institute managers, colleagues and peers; uneasiness in those deciding to take advantage of any benefits introduced, or fear of marginalisation in the workplace and other potential negative effects.

## O17. Male hostility towards affirmative actions addressed to women in research institutions

A recurring phenomenon that occurs when programmes specifically for women are implemented is the arousal of explicitly hostile behaviour from men or young adults who feel discriminated against for not having access to the benefits included in the measures to support women or who simply believe that the women do not need them. This hostility may occur both in the design and in the implementation phase and which could concern different issues such as the way beneficiaries are chosen, the way it is publicised, the greater or lesser clarity of objectives of the planned actions or benefits or the degree of concreteness. This hostility obviously makes it more difficult for the programmes to run smoothly, which, to be successful, need widespread consensus in the working environment.

## O18. Gender bias igniting conflicts among women

In research institutes, as well as in other male dominated working environment, gender bias can lead to what are called "gender wars", i.e. conflicts between women or women's hostility towards actions geared at gender equality. When women are required to fit into tightly defined feminine roles in order to be accepted, in fact, those who are willing to act as expected often end up in opposition to those who aren't. Likewise, professional women who have had success playing with the rules of men may have a lot invested in demonstrating that "this is what it takes to be a serious professional". Women who seek to change the old rules may feel shocked and betrayed when the most successful professional women do not support them. The "mommy wars", which are particularly acute in academia, due to the high percentage



of childless women, are a kind of gender war between women, concerning, among other things, the right to obtain special conditions for working mothers.

## 5. Poorly motivated actors

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Another set of obstacles stem from the fact that specific actors in science organisations **lack the motivation** to address gender issues and find solutions.

### O19. Lack of interest in gender issues among research institution managers and leaders

Often the governing bodies of research organisations are not at all interested in gender issues, although not openly opposed to them. One consequence is the refusal to put needed measures on the agenda.

### O20. Indifference of the staff in research institutions

Indifference and disinterest in the gender dimension, which is automatically seen as belonging exclusively to the female domain, seem to prevail among the male personnel in research institutes. This makes it extremely difficult to organise activities that target the entire research staff. This point of view, anyway, is often shared also by the female staff, which does not consider gender issues being related with the core business of their workplace.

### O21. Divergent visions and motivations in the different departments/faculties involved in programmes

Due to the relative autonomy in which different departments/sectors of the same organisation operate, actors involved in measures supporting gender equality may attach different aims to the same action, revealing the existence of divergent views and motivations on the same issue and, in fact, promoting activities that are implemented in different ways and have different final goals. This can create confusion among beneficiaries, including the broader public and the promoters



themselves. For example, as regards the choice of beneficiaries, some will seek to benefit female researchers in general while others, especially in programmes aimed at the promotion of "excellence", will focus only on the best female researchers, i.e. those most likely to have a successful career in the organisation.

## O22. Difficulties in getting beneficiaries to become involved in actions

An obstacle that may arise when action is being taken to foster gender equality is a lack of cooperation from the beneficiaries in achieving the objectives (for example, in formulating new proposals or activities addressed to same target or other). This difficulty may arise because of deficiencies in the design of the actions or in communicating them to potential beneficiaries. However, it may also be due to the existence of latent conflicts between men and women, senior staff and newcomers, long term and short term employees, etc, which affects the performance of activities.

## O23. Lack of motivation and specific expertise in managing projects related to gender

A recurrent difficulty in promoting activities aimed at gender equality in science, especially in institutions that are implementing them for the first time, or in male-dominated situations, is to find staff that have the motivation and necessary competence to design and implement initiatives that have this specific goal.

# 6. Organisational and bureaucratic dynamics affecting the involvement of actors

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A further, rather large, set of obstacles arise from a wide range of **organisational and bureaucratic dysfunctions** that may prevent or slow down, directly or indirectly, effective involvement of the actors in activities to combat discrimination.





## O24. Implementation of gender equality actions depending on other sectors of the research institute

In several cases, an obstacle to planned activities is the unfortunately necessary dependence of gender equality programmes on departments or services of scientific organisations that are not directly involved and not very motivated (such as the staff managing the corporate intranet, in-house trainers, graphic designers). The difficulties arising from these interactions can take many different shapes: lack of understanding of the programme's technical requirements, the need to keep explaining the programme objectives and procedures to each new interlocutor, the timing of activities and different ways of setting priorities, which may differ considerably from one area of the institution to the other.

## O25. Overworked staff in research institutes

One of the difficulties identified by the promoters of gender equality programmes in involving research institute staff is the extremely tight schedule of work and research commitments. This makes it difficult to include any other kind of activity other than those already planned, and this obviously has a very negative impact in terms of motivation.

## O26. Difficulties in maintaining post-project relations

To ensure the impact and sustainability in the medium term of programmes to support gender equality in science, use is often made of networking activities involving teams of promoters, beneficiaries and experts, which start during the project and continue, where possible, even after it has come to an end. However, the creation, and especially the continuation of these relations, is difficult for a number of reasons (cost, dedicated staff, etc).

## O27. Ineffective monitoring systems

Among the most commonly reported problems, both by the promoters of initiatives and by experts, is the difficulty of creating and operating systems to monitor the effects of gender equality measures implemented in research institutions. These difficulties are due to several factors, ranging from the cost of conducting the operations in the different target areas to the culture of the individuals involved, who may have very different sensitivities and motivations.



## O28. Divergences between scientific organisations and project partners

Another set of problems lies in the relations with project partners, whether they be research institutions of the same country or institutions of different types (public authorities for gender equality, companies, private training consultants, etc). In some cases, where a partner is responsible for implementing part of a project (e.g. training initiatives), competition can arise between partners. In others, the difficulty is related to regulatory differences between the institute and its partners, when the latter, for example, is not allowed to implement initiatives involving positive discrimination towards women. In others, a lack of interest in the activities was reported.

## O29. Problems in solving difficulties in mentorship relations

Among the mentoring programmes activated in support of female researchers, especially in the early stages of their careers, difficulties were reported in establishing effective mentorship relations. This obstacle may be due to various causes: organisational (very often, for example, there is the material difficulty of finding the time to meet); or cultural and motivation (the lack of a strong commitment makes it difficult to deal with the inevitable everyday difficulties of this type of activities).

## O30. Difficulties in designing and implementing appropriate initiatives for women with high level jobs

Difficulties were found in the design and implementation of initiatives to support women scientists in high positions. Often they find themselves isolated when it comes to solving problems that become more complex the higher the level of responsibility; many give up and resign from their positions. In addition, if not properly involved, women who occupy the high positions can turn into authoritative opponents of the programmes themselves.

## O31. Tendency to delegate decisions to managers

Another obstacle to the promotion of gender equality activities lies in the tendency to delegate matters to top managers. Sometimes, in fact, there is a tendency, among mid-level managers or those who have some decision-making powers but who are not ultimately responsible, not to go on with the activities in the absence of the department head, in the belief that little impact can be made without the involvement of top management.



# Chapter Four

## THE EXPERIENCES OF THE THREE INSTITUTES

What can be done to solve the problems and tackle the obstacles described in the preceding paragraph, regarding the lack of interpretative or motivational capacity? Valuable insights emerged from the research conducted in the WHIST project, bringing together the strategies and actions of the leading actors involved in the experimentations carried out at Fraunhofer IAO, ESA and AU.

These experimentations were a kind of ongoing laboratory on the best way to address the issue of discrimination against women in research organisations. They made it possible to find out what was happening in the institutes and, at the same time, develop solutions. It also highlighted certain **aspects of the practices used by the actors** who implemented the initiatives. The following pages contain information about these aspects, as highlighted by the actors themselves. In particular, mention will be made of the **context** in which the actors worked, the concrete methods used to tackle the problems and the first **results** of the activities, as reported by them.

This produced some **useful indications** about the fight against gender discrimination in the world of scientific research, which perhaps also went beyond the organisational contexts in which the experimentation took place. In fact, on the basis of this information, recommendations were formulated, which will be presented in chapter five.



# 1. The importance of context

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Apart from coming up against different types of obstacles (see above) or sometimes enablers, the actors promoting the three experimentations had to deal with specific **contexts**, which were not always conducive to the work being carried out, at least in the early stages. As for interpretation and motivation, a number of important aspects emerged, including the following.

All three promoters of the experimentations had, first of all, to reaffirm the **importance of the gender issue** and, using arguments based on incontrovertible facts, stress the **existence of the gender gap** (see box below). As observed by the three promoters, the numerical inferiority of female researchers, in fact, is not automatically interpreted as a problem by most people involved in science and technology, while the gender imbalance in the distribution of tasks and responsibilities is, in most cases, ignored or only partially appreciated<sup>25</sup>.

## Aspects of the gender gap in the three institutes taking part in the WHIST project experimentation

- 1) In Aarhus University, as in most European universities, more women than men graduate with a master's degree, but only a third of associate professors are women and only one full professor in 10.
- 2) At Fraunhofer-Gesellschaft, a typical applied research institute, specialising in engineering, the number of women has increased in recent years, but they do not exceed an average of 19% of the scientific staff (23% at Fraunhofer IAO). In general, women are concentrated in administration rather than in scientific careers, and in the lower positions.
- 3) At ESA, an international and technical organisation, women are a minority, numerically less than one fifth of the workforce. Despite the organisation's policy of increasing the number of women in management positions, which has risen from 8% in 2002 to 18% in 2010, the majority are in the lower levels.

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<sup>25</sup> Before the experimentations, the three institutes had few gender statistics and in least one case they were not readily accessible for institutional reasons.



In addition, there is the **widespread conviction that science is neutral and that research and technology are atypical** compared to other working environments; this produces a generalised insensitivity towards issues that are classified as trade union matters, and therefore of no bearing on the central characteristics of research organisations. It was noted that this simplistic perception of the issues is even further strengthened by the belief that they are attributable to a **minority** of people (women, especially young women in the early stages of their careers), whose role is of relative importance in the organisation (the three institutes taking part in the project, given the numbers and roles of women, are no exception).

In these situations, those involved in the experimentations discovered how difficult it was to gauge the phenomenon of male dominance in its entirety. It was observed that often there is only an understanding of the quantitative dimension of the problem, and the conviction is that the numbers will balance out almost automatically in the future. It is also difficult to perceive intangible and sophisticated aspects, such as the existence of organisational cultures hostile to forms of diversity, the influence on recruitment and evaluation of deeply rooted albeit unconscious stereotypes of science as the exclusive prerogative of men, and an unwelcoming working environment.

In addition, it was noted that the existence of measures to encourage the hiring of women (e.g. educational services for employees' children) often does not lead to a more articulated perception of discrimination against women in the workplace, strengthening, rather, the belief that everything that could and needed to be done has already been done. For example, even women who feature prominently in the public eye, in a debate about the recruitment of new female professors at the University of Aarhus, said that there was no need for positive action for female scientists and researchers, arguing, on the contrary, that such measures could be harmful.

On the other hand, there were also the typically **negative male attitudes** of refusing to recognise and accept forms of diversity that diverge from the dominant models of their work environment. As is well known, these attitudes are typical of male-dominated environments such as research institutes. This constitutes a strong barrier to any motivations for action. In ESA, as shown in preparatory surveys carried out in 2009<sup>26</sup>, these attitudes still present, although not always apparent, could potentially give rise to harassment. At the University of Aarhus and the Fraunhofer IAO, attitudes of this kind emerged precisely when launching programmes explicitly aimed at creating a gender balance, such as the activation of mentorship for young women in Aarhus, or the organisation of seminar tests on gender diversity in the Fraunhofer IAO. The first caused negative reactions among young researchers, who thought they were being discriminated against, while the second, which involved

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<sup>26</sup> The Studies on Quality of Working Life were carried out in 2009 in all ESA establishments.



separate activities for men and women, brought to the surface men's negative feelings against women.

In contexts such as these, the presence of visible referents within the organisation was a key element in mobilising the women. In ESA, for example, the publication of women's profiles brought a wave of consensus from female staff and many female employees said they shared this new and realistic way of representing women's life and work in the organisation. In Aarhus, as previously mentioned, the need for positive discrimination was affirmed, even against the advice of eminent women, thanks to the **authority** and visibility of the human resource managers. In the same context, the network of women scientists in the university was strengthened and became more visible. In Fraunhofer IAO, this lack of visible referents could be seen, however, as one of the causes of the general passivity of the female staff, as concerns gender equality themes and activities.

## 2. The path towards concreteness

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In the experimentation, to overcome the problems identified, various negotiation activities were set up to interpret the reality of the situation and build motivation and a shared perspective, as far as possible, of the condition of women and gender equality in the organisation.

A first type of activity concerned an important **precondition** for action: **access to information** inside and outside the institute. Having reliable and updated information is, in fact, the first step towards producing a fair representation. It should be noted, however, that data relating to research institute staff are not always available and accessible to all. In Fraunhofer IAO, for example, the experimentation team was not part of the department authorised to hold information about the families of the beneficiaries, and thus find out about the birth of children to employees. It was therefore necessary to hold meetings with the relevant departments (human resources, central management) to develop a procedure for communicating with the beneficiaries of the 'baby welcome package' to allow the team to find out who the beneficiaries were (thereby bypassing an extremely narrow interpretation of privacy regulations).

It was also important to **produce and disseminate up-to-date data and information**. The University of Aarhus, for example, produced, constantly updated



and regularly disseminated gendered data, which were used to demonstrate the existence of vertical and horizontal segregation throughout the university and the need for prompt action to deal with it.

#### **Analyse the phenomena of discrimination in organisations**

There are many different ways of identifying and analysing forms of gender discrimination within a given research organisation. In the case of ESA, for example, a brainstorming session was organised to determine what the key risk areas were for women in the workplace. In the case of Aarhus University, the task force for Gender Equality initiated in 2010 an investigation, in a comparative gender perspective, of the reasons why some researchers leave Aarhus University taking on positions in other organisations or leaving science altogether.

Another important activity, not to be taken for granted, involved **finding out the views of potential beneficiaries**. Again in Aarhus, to overcome the risks of not meeting the expectations of the participants, to address the real problems of young female researchers and to adapt programmes to the beneficiaries, an ex-ante appraisal was made of the mentoring programme and it was decided, after the experimentation had already begun, to include among the experimental activities an ongoing investigation into the reasons for abandoning an academic career. Thus, in both case, it was possible to verify, on the one hand, the existence of problems that women face in their organisations and, secondly, to find out about their views of the current situation in their working environment. Similarly, in Fraunhofer IAO an in-house survey was carried out on the staff to find out their information needs, expectations and evaluations of available information tools.

Particularly useful was also the **adoption of a comparative approach** to understand gender differences in the organisation. In ESA, meetings with the institution's top management resulted in the decision to analyse the condition of hundreds of expatriates, collecting information on women and men expat, opting for the adoption of a comparative approach in the collection of data on beneficiaries. This made it possible not only to acquire more information but also not to over-emphasise the gender aspects of this kind of activity in the eyes of a sometimes hostile public.

#### **Two different opinions about being an expatriate staff at ESA**

*“The difficulties of being an expat are often in the details that are not foreseen when making the step. Life is interesting and there are many new experiences, but living in a foreign country with different laws, social security, education systems has many implications that often cost money or a lot of time to deal with. (...) I keep being*



*amazed how high the cost of living for my family are and would never have expected that before moving. Friends and family in Germany live on a fraction.” (male expat)*

*“My opinion is that expat working women suffer more from loneliness than their male counterparts. Men do not miss their family in the same way as women do. The stresses suffered in the early years (e.g. coping with a new culture/language and isolation from family and friends) were enormous and never really understood/recognised by the local medical service. I would like to see an effort made to provide/publicise social opportunities for female staff; female family members with young children and unemployed female family members.” (female expat)*

*Source: Final Descriptive Report on ESA experimentation, 2011*

All this would have been difficult if consensus had not been built on the content of the actions in progress and the measures to be taken, as individuals and as organisations, to promote the protection and exploitation of diversity. In Fraunhofer IAO, for example, the contents of gender section in institute’s intranet were discussed with the head of the system and with the new equal opportunities manager. Thus, all the content of the various activities were reviewed and redefined, starting with action 1 (periodic reporting on equal opportunities). In ESA, the content of some guidelines on acceptable behaviour (see box below) were the subject of intense negotiation within and outside the institution, using a bottom-up and top-down approach, which involved departments, offices and individuals.

#### **ESA: Guidelines for the personnel**

One of the experimental actions carried out under WHIST consisted of the design and the diffusion of corporate behavioural guidelines for all ESA personnel to set common interpersonal standards of conduct integrating implicitly the gender dynamics.

The idea of the guidelines was proposed by the Head of Human Resources Department to the Director General in January 2010. The project idea was to have corporate guidelines to get a collective understanding of what is acceptable and not acceptable in terms of behaviours when working for or at ESA.

A working paper has then been submitted to the Executive Committee of Directors on the project idea to obtain the approval and above all the necessary commitment of top management and decision making bodies. The expert resources were identified in order to effectively support the extraction of the gender related issues in the testimonies raised in the Studies on Quality of Working Life that were carried out in 2009 in all ESA establishments. A brainstorming session was organised to determine what the key risk areas were for women in the workplace to address in the guidelines keeping in mind a holistic approach and the desired objectives.





The overall structure of the guidelines was designed in the following months with the support of the Institutional Committee (Action 1). The guidelines were written in English and contained positive and negatives examples of behaviours to obtain a balanced and more positive perspective.

(...)

The draft guidelines were submitted for feedback and review to the:

- Institutional Committee
- Promotion Committee
- Human Resources Management Meeting
- Human Resources Advisors
- Director General and Directors
- WHIST partners for comments, feedbacks and input
- Staff representatives.

After the revision of the content, a general staff consultation on the draft guidelines for comments, feedbacks and input was launched. The aim of this approach was to empower staff and have a transversal approach (and not simply a classic top down) to obtain their motivation but above all their engagement.

Four principles have come out from the guidelines as essential to the Life at ESA:

- Respect, Dignity and Fairness
- Integrity and Ambassadorship
- Cross-Cultural Sensitivity
- Working together.

The guidelines were also designed in an illustrated booklet to be distributed to all ESA staff in future take-up duties. The guidelines will be used as a strategic reference document when assessing staff's interpersonal behaviours. A bottom-up and top-down approach will be used with the crucial staff participation via their consultation.

*Source: Final Descriptive Report on ESA experimentation, 2011*

Building consensus, and more generally, interest and motivation around gender issues, proved to be one of the main actions undertaken by the actors promoting the experimentations. It involved organising meetings, communication, dialogue, and conflict prevention. Particularly important, in all three WHIST experimentations, was the organisation of special **introductory seminars**, attended by a good number of managers and staff at various levels.



In implementing the experimentations it became essential **to prevent forms of hostility to the projects** by involving as many people as possible. For example, in AU special care was taken to overcome forms of opposition, mostly implicit, from male employees. In ESA the managers decided to address the issue of acceptable behaviour in a gender perspective by adopting an integrated approach to diversity and an approach that was considered "gender discriminatory", to avoid excluding men from the debate and isolating the women (see also R7, chapter five). In Fraunhofer IAO the project took into account indications expressed by the staff on the intranet.

#### **Fraunhofer IAO: survey on line about the new intranet content**

One of the experimental activities of the Fraunhofer IAO project team was redesigning and updating the section of the Fraunhofer IAO intranet which deals with gender equality. (...) After assessing the current state, we started to brainstorm which categories, contents and information should be available on the intranet in the future. (...)

In December 2010 and January 2011, the questionnaire for the planned evaluation of the new intranet contents was developed. The already existing questionnaire about the baby present served as a model. (...)

Several of the suggestions made by the respondents in the online survey (...) are reasonable and a good addition to the current intranet offer. (...)

The changes are communicated via e-mail to all employees in order to inform them about the on-going activities and to call their attention to the fact that the intranet section "equal opportunities" is not a fixed system but is changed if needed.

*Source: Fraunhofer IAO Experimental initiative final report, June 2011*

It was also important **to diversify the membership of promotional committees** by including all levels and typologies of staff (both scientific and administrative), as in the case, for example, of AU.

The promoters of the three experimentations focused on **fostering closer internal relations** and more effective communication. For example, in ESA new modes of action for the corporate culture were adopted, to encourage the creation of networks, inter-departmental communication, horizontality and an esprit de corps (for example, promoting seminars and "lunch meetings" with groups of males and females at various levels in the organisation). Fraunhofer IAO tested in the experimentation a joint workshop on gender addressed to both women and men.



### **Fraunhofer IAO: a joint workshop between female and male researchers**

During the experimentation in Fraunhofer IAO, a joint workshop was organised between female and male researchers to use dialogue between women and men to create fruitful ideas on gender diversity. The workshop aims at four objectives:

- Introducing and reflecting basic ideas of gender diversity
- Introducing the existing offers at the IAO/IAT/Fraunhofer Gesellschaft
- Identifying personal positions and shared ideas concerning gender diversity
- Finding ideas for the improvement of gender diversity aspects at the IAO/IAT.

*Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011*

At the same time, specific efforts were made to increase the visibility of women in scientific organisations through specific activities aimed at gendering internal communication. To do this, it was necessary, as in the case of ESA, **to negotiate the style of communication** with senior management or, as in the case of IAO, to **adapt the language and make it more sensitive to gender differences**. For example, on the Fraunhofer IAO intranet, gender issues were re-defined as "Chancengleichheit" (equal opportunities) rather than "Gleichstellung" (equality), which in German sounds paternalistic and top-down, to highlight the role and potential that each person can play in achieving equality. The **tools to assess actions were also adjusted to facilitate ownership** by a larger number of people (in particular, in ESA it was decided not to use the planned online questionnaire on guidelines; instead a "wiki" document was used).

## **3. Results**

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The promoters of the WHIST project highlighted some of the effects of the implemented actions. These effects are manifested in different forms in the three institutes, but all have contributed in some way to an increase in the interpretative and motivational capacity of those involved, starting with the direct beneficiaries and including, more generally, the organisational culture and practices of the institution.

A first result was the creation of an awareness of gender issues within the organisation. In ESA, for example, there was a general increase in the awareness, to a lesser or greater extent, of gender related problems in the Agency. Some facts point



to this new tendency. Firstly, greater consideration was given by ESA staff and management to gender and diversity issues, which before were hardly mentioned. Secondly, members of the institutional committee became more aware of the issues which influence the quality of working life at ESA, particularly as regards women. Thirdly, there was a general increase in the awareness of the culture of prevention of risk situations. Finally, informal discussion networks were set up at the grass roots level of the organisation. Male and female mentors at the University of Aarhus reported a greater awareness of the problems of young female researchers.

Another specific result was an increased awareness among project beneficiaries. For example, the participants in the mentoring programme at the University of Aarhus, became more generally aware of the goals of scientific activity and the unwritten rules of the working environment. This awareness strengthened, in many of them, the determination to pursue a science career at the university (see box).

**Aarhus University: Results from the evaluation of the mentoring programme**

“The evaluation of the mentoring programme reveals very positive experiences as expressed by both mentees and mentors participating in the programme. During the interviews the mentors praised the idea of mentoring by declaring that through the programme they were able to give young female mentees help to navigate in the research environments and to keep their research careers on track. In addition, the mentors stated that they not only served as professional supervisors, but that they also helped to introduce the mentees to national and international contacts and networks, supported them in applying for research funding, expanding and strengthening their networks etc. The mentoring programme functioned as an instrument for the young female researchers to better understand the customs, norms and cultures within academia. Interviewed mentors stated that during the mentor-mentee sessions they were able to communicate ‘tacit knowledge’ to the young female researchers and to tone down potential frustrations and misunderstandings.

Also among the young mentees, the mentoring programme is perceived as a success. The statements about the mentoring programme were very positive from the beginning. According to the mentees, the sessions with the mentors did provide valuable skills for dealing with career-related issues. The mentors experience, knowledge and insight were made available to the mentees supporting their career development. Topics of mentoring interest included among others research and publishing, getting grants, professional exposure, teaching, the tenure process and work-life balance. All interviewed mentees stated that the programme was in general very helpful in dealing with the challenges faced by female junior researchers.”

*Source: Final Report of the Experimentation Activities at Aarhus University, June 2011*



In general, **new knowledge was produced and new demands for knowledge arose**. In Fraunhofer IAO a database was produced, and knowledge and experiences were shared even with others outside the project staff. In particular, Fraunhofer IAO information, materials and documents about returning to work were harmonised and made more directly accessible to project beneficiaries; new information was acquired on the problems of parents on leave; a storage and collaboration platform was set up on gender diversity and gender equity, begun under “Action 4 - Workshop on gender diversity” by the project staff. At ESA, the internal circulation of statistics on the gender gap produced, among other positive outcomes, an increased number of requests for such data from different departments of the institute.

In addition, the project beneficiaries were able to identify **new needs**. In Fraunhofer IAO, for example, the beneficiaries of Action 3 "Re-entry process after baby break" requested new communication tools for parents on leave, which was identified as a critical aspect for continuity in the working life of staff in the institute. In ESA, cognitive effects included managers being able to identify new staff **training needs**, as a result of an awareness of issues regarding standards of conduct to help remove obstacles encountered by women in their careers.

A **greater focus on work-life relations in scientific organisations** was also noted. The Fraunhofer IAO, for example, became aware of the need to reconcile work/life both among women and men. This is demonstrated by the fact that the main users of the specifically created intranet page on gender are staff members with families, who tend to see this page mainly as a tool to help establish work-life balance. Also additional family services were introduced and actions to support the re-entry of parents were launched. In addition, in ESA, those most at risk, particularly women, have shown a greater interest in issues related to working life. In Aarhus, some researchers who were consulted about drop out rates at the university made proposals to help reconcile young scientists with their young children, such as the activation of family-friendly services, the provision of better job opportunities for those requesting part-time, the planning of re-entries in the first six months; the chance for those with small children to have a greater number of hours of assistance for administrative tasks or help from students.

Another effect produced by the experimentations was a general **increase in transparency**. According to the project team, the publication of gendered data on the ESA intranet facilitated an **overall increase of transparency**. This would appear to be confirmed by the creation of a forum for dialogue on issues previously avoided, thanks to the opportunities for discussion provided by the guidelines. Aarhus has also seen increased transparency, with the activation of a monitoring system that continually highlights the gender gap in the university (making it possible to take concrete actions to address issues found).



### **Fraunhofer IAO: a systematic inventory on equal opportunities**

An important activity undertaken as part of the experimentation in Fraunhofer IAO was to take systematic inventory of the issues concerning equal opportunities that were already on the Fraunhofer Intranet, and which could serve as a model for the Fraunhofer IAO Intranet. The topic “equal opportunities” is presented quite comprehensively on the Fraunhofer-Intranet. However it appears somehow confusing as it is a little bit unstructured. There is some information which is only interesting for the woman in charge for equal opportunities (BfCs) of the Fraunhofer Institutes and not for the employees, like the list of appointments for the BfCs and information for the BfCs about their meetings. Moreover, a lot of the information is out dated and obsolete. For some topics, information can be found in different categories. For example the topic child care is found in three subcategories of the category “Job and Family”. Information about the Girls’ Day are not only in the subcategory “Girls and technology: Girls’ Day at Fraunhofer”, but also in the sub-category “Activities and projects”. Furthermore, some sub-categories have the same name, for example there are sub-categories called “tools” in category 1 “Players for equal opportunities” and in category 3 “Job and family”. This is confusing for the user because the overview of the navigation can easily be lost.

*Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011*

Another outcome was that **new priorities were put on the agenda**: for example, the ESA institutional committee for the promotion of quality of life prepared a paper for ESA’s Agenda 2015.

Another effect of the experimentation on organisational culture was the adoption of **new approaches and perspectives**. In Fraunhofer IAO, in particular, a new and broader perspective on gender and diversity has gained ground, also helped by the scientific and non administrative background of the new head of the equal opportunities. In ESA, as an indirect effect of the increased visibility of gender issues in the agency, the Communications Department introduced more initiatives involving women, thus setting a new course. Furthermore, in relation to the production of guidelines on behaviour, an early warning culture to prevent unacceptable behaviour seems to be taking root.

Other consequences of the actions taken include **new communication and interpersonal dynamics** in all three institutes. In ESA, for example, the emergence of new alliances between different departments for a human resources policy to change the work culture and the creation of new inclusive partnerships between key actors and institute management have been observed.

As regards **consensus**, specifically, there has been an **increase in the visibility** of women and gender issues in scientific research organisations. In the case of ESA,



there was positive feedback on various aspects of the communication campaign on gender issues (see box). Then, in the case of AU, **female role models were appreciated**: some beneficiaries reacted positively to female mentorship, a role model for which they felt the need. Again in AU, the **beneficiaries of mentoring programmes developed greater self-esteem**, and there was a general appreciation for these programmes.

#### **The presentation of successful female role models in science**

As part of a communication campaign carried out at ESA, “a new series called ‘Women at ESA’ was launched in March 2010 at the symbolic date of the 8 March. Four different women who are role models of career success in the Scientific and Technical field were published on the HR intranet and also on the ESA intranet. All staff have also received the news as an e-newsletter (...).”

The women interviewed “had to be convinced to participate as they feared too much exposure and also with the wish to be treated as any other staff and they did not want to be marginalised for being women and simply be praised for their professional success.

Staff feedbacks on the initiative have been extremely positive and successful as they felt it was the first time women were asked the right questions regarding their perspectives of career evolution and the difficulties they meet in their daily work life.”

*Source: Final Descriptive Report on ESA experimentation, 2011*

An interesting outcome, in terms of motivation, is the great **commitment** shown by the actors, even beyond what was expected. For example, at Fraunhofer IAO, the equal opportunity manager was directly involved in making sure the actions were sustainable beyond the duration of the WHIST project, and in AU mentors and mentees decided to continue the mentoring activities beyond the experimentation period. In AU, the mentors made a positive assessment of their voluntary participation, although, according to some, the institute could have recognised the importance of the programme and their commitment in terms of time by awarding a financial contribution.

In general, as well as numerous positive results within the institutes, there were also some **external successes**, such as arousing the interest of other parties. The experimental initiative carried out in the Fraunhofer IAO, and, in particular, the collection of data and information for the preparation of a gender report aroused the curiosity and interest of the IAT administration (University of Stuttgart). This interest, as stated by the parties concerned, represents an important first step in the realisation of further joint activities in the field of gender equality, which, while they are



perceived as necessary for the two organisations that work side by side, they cannot be considered as an automatic result of collaboration between organisations that are legally distinct in all respects.

The actions stimulated also a great **media interest** in the gender issue at the national level. Some initiatives implemented at Aarhus University started a public debate as to the necessity to introduce positive gender discrimination at the university in particular and in academia in Denmark in general, which involved the media and women in public life.





# Chapter Five

## SUGGESTIONS AND RECOMMENDATIONS

Based on the information presented, **5 areas of interpretative and motivational capacity** can be identified, all centred on negotiation:

- **demystification** of denials or reductive views of the problem of discrimination;
- the development of a **shared and consensual vision** of the problems and how to solve them;
- relevance and plurality of **communication**;
- **valorisation of competencies**;
- **continual monitoring** of the phenomena of discrimination in the organisation.

This classification, or **taxonomy**, can help identify **strategies and recommendations** for actors working against the discrimination of women in scientific research. These strategies and recommendations are analytically described below.

### **Area: demystification**

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The main obstacle to a correct interpretation of the condition of women in research organisations is the denial or minimisation of the existing situations of discrimination, their extent, visibility or seriousness.

A first, fundamental strategic area, therefore, involves removing the veil, once and for all, on phenomena of discrimination, identifying them, giving them a name,



identifying the factors that have occasioned it and those that can help to overcome them.

In this regard, a series of recommendations can be put forward. Some, of a general nature, and perhaps quite obvious, concern the importance of participating in national or transnational studies on discrimination against women, or the dissemination, within the one's own organisation, of the results of studies and research carried out elsewhere on this theme. Furthermore specific recommendations can be made, such as the following.

## R1. Collect and disseminate gender statistics

An important practice promoted by the institutes involved in WHIST experimentations is the collection and dissemination of gender statistics on their research organisations. This activity can have different functions, such as combating stereotypes about gender distribution in roles and responsibilities in research organisations and creating awareness in the personnel belonging to various sectors, as shown by the experiences of ESA and Aarhus University above.

## R2. Conduct an analysis of gender inequalities within the organisation

Experiences in WHIST, and other projects that preceded it, show the importance of conducting analytical studies on the condition of women within specific organisations in order to highlight the actual existence of the discrimination phenomena. This can be achieved by collecting documents and through interviews, brainstorming sessions and focus groups, and more. These activities may help, in general, to gain a further understanding of the phenomena so that it can be transmitted to those working in this field, and, in particular, to provide interpretation and analysis tools for actors who promote the role of female researchers within their institution. In this regard, previously adopted schemes and research methods can be used (for example methods used in the PRAGES project were included in WHIST: <http://www.retepariopportunita.it/defaultdesktop.aspx?page=2749>). Or a specific research methodology can be elaborated and adopted, possibly with the help of local researchers, or with the distance advice of scholars who have done similar research elsewhere.



### **R3. Identify and formalise the intangible and hidden aspects of discrimination**

WHIST research and analysis of the condition of women in scientific organisations showed that it is important to strengthen the vision of the gender discrimination phenomena. This can be done by highlighting all the less obvious but equally important aspects of this discrimination, such as those related to an unwelcoming atmosphere in the workplace, the presumed irrelevance of gender issues in research, the inadequate recognition of female leadership (see Cacace M. Guidelines for gender equality programmes in sciences, PRAGES, chapter 1). Another aspect to be highlighted is how this is translated into the daily life of the institute, for example through discriminating internal procedures, the application (even if unconscious) of gender stereotypes in the recruitment and evaluation of merit, the hostility to discussion of issues related to work-life relations, and more.

### **R4. Adopt a comparative approach to understand gender differences in the organisation**

To fully understand the dynamics of gender discrimination within a given organisation, a comparative gender approach can be adopted. In the case of ESA, for example, an internal study was carried out to compare the working conditions of expatriate men and women before the planning of support measures targeted at expatriate women. In the case of Aarhus, a study in a comparative gender perspective, of the reasons why researchers leave Aarhus University taking on positions in other organizations or leaving science in general was carried out. In this way, similarities and differences were highlighted and critically analysed to find concrete solutions.

### **R5. Highlight the link between gender equality and economic development/competitiveness/innovation**

Numerous projects carried out at European level have shown that a good way to promote gender balance initiatives in science and technology institutions is to highlight the relationship between gender equality and competitiveness/innovation/economic development. This is particularly true in situations where management is not particularly sensitive to gender issues. To this end, for example, success stories can be presented, the current political debate in European institutions about women's contribution to innovation can be illustrated, the benefits of using a gender perspective to test the functionality of new technologies can be shown. An example of this is the study conducted by Fraunhofer between 2008 and 2009 in some large



German companies, which aimed, among other things, to show the benefits of gender diversity management in times of crisis.

## R6. Highlight the link between gender issues management and life/work quality

Another way to promote greater awareness of the centrality of gender issues in research organisations is to highlight the link between effective management of gender issues and a substantial improvement in quality of life and work within organisations. This could be the focus of specific surveys and studies and subsequent internal and external communication campaigns, as was the case for the communication campaign launched by ESA and the establishment of the Gender Equality Task Force at Aarhus University.

## **Area: shared and consensual vision**

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A second strategic area involves building a shared and consensual vision within a scientific organisation of the situation of women in the institute and the possible ways of solving existing problems.

Not always, in fact, do the various components of an organisation show the same sensitivity and knowledge of this issue, and this can compromise, in the short, medium or long term, any initiative for change. It is important in this context, not only to intervene at the organisational level of an institution but also and especially to involve individuals.

To this regard, in the light of WHIST findings, some courses of action can be suggested.

## R7. Adopt a diversity approach that does not lose sight of the gender dimension

In some cases, the promotion of initiatives aimed at gender equality and the valorisation of diversity in science has benefited from the use of a concept of diversity



that goes beyond gender alone; namely it also includes aspects such as ethnicity, age, and disability. This broader concept has made it possible to identify different categories of people (as in the case of ESA) and generally has produced less dissent than traditional programmes aimed exclusively at women, often perceived as discriminating towards men, especially by those who consider themselves subject to other forms of discrimination (e.g. young people or ethnic minorities). However, this approach, as seen above, can also lead to a "watering down" of the gender perspective: in this regard, corrective or preventive measures can be implemented (such as making sure working groups include people with expertise in the field of gender, explicitly formalising the gender issue in the work programmes of teams involved in managing diversity, etc).

## R8. Promote dialogue between women and men

Another useful tool to build consensus around a new vision of discrimination, and new practices to combat it, is to promote a common awareness of the problems in female and male researchers by organising, for example, special seminars. During experimentation in ESA great care was taken not to exclude men from the debate and isolate women. These seminars can involve sessions with separate groups, also according to gender, and joint groups. The seminars, such in Fraunhofer IAO, can be used to develop a common view of problems and solutions. They can also help promote a sense of ownership with regard to anti-discrimination actions.

## R9. Create an awareness of gender issues among different types of actors

Based on WHIST findings, it is important to raise awareness of gender issues by taking into account the social and cultural characteristics of the people within an organisation (i.e. not only in terms of women or men, but also, for example, office staff, new recruits, social class, age, etc). These people, in fact, can understand and experience discrimination in ways that are very different from each other. Therefore it is particularly important to set up targeted initiatives, such as ad hoc seminars, informal meetings, online or in-house discussion groups, etc. Care should be taken in identifying communication strategies and actions. In addition, the involvement of staff at an early stage limits the risks of cynicism, scepticism and rejection, as has been seen at ESA.



## R10. Collect the views of potential beneficiaries

As has emerged in WHIST findings, to promote a shared interpretation of the problems of discrimination and above all the solutions to be adopted, it is essential to gather information on the experiences and views of potential beneficiaries, both women and men. This involves using tools such as studies, personal and group meetings, informal consultations. For example, ESA carried out a survey of all expatriate staff to fine tune initiatives for them (in particular, to identify the biggest problems faced by women). The University of Aarhus decided to verify, in a survey aimed at people who dropped out of university, the biggest obstacles in the way of an academic career (especially as regards women). In the case of Fraunhofer IAO, the restructuring of the "Equal opportunity" section of the institute's intranet took into account the views of the staff, on the basis of an online questionnaire asking for their opinions and suggestions.

## R11. Include gender issues as part of a broader public debate

A better understanding of the true extent of gender issues in a research organisation can be promoted by pointing out the widespread nature of the problems. In this sense, based on numerous experiences at European level, a useful approach is to promote a public debate on gender discrimination and experiences at local or national level. This can be done, typically, through meetings, publications and broadcasts, involving the actors concerned (promoters of equality projects, research institute managers, government representatives, etc). For example, in Aarhus University, to promote publicly the launch of the new women's recruitment policy, details were illustrated, among other things, of a positive initiative implemented by the University of Copenhagen.

## R12. Promote specific information on the relevance of gender to science, technology and engineering

To clarify the issue of gender in science and technology, and make the gender perspective more acceptable in corporate culture, especially in applied research institutions, a set of tools and procedures can be used such as, for example: collecting concrete examples of aspects in which gender is relevant for research and technology; questionnaires typical of the applied research environment (e.g. checklists) to identify gender aspects in research; the production of lists detailing the negative effects of not taking gender into account in scientific and technological research projects, etc.



### R13. Interpretation of gender issues and possible solutions supported by prestigious figures within the organisation

As has emerged from WHIST findings, a shared interpretation of gender issues and possible solutions can also be achieved by involving prestigious figures within a given organisation. Managers, esteemed researchers, office staff in key positions can all provide vital support in this regard, for example by participating in meetings and seminars to raise awareness and evaluate programmes, circulars presenting initiatives, formal and informal meetings of various kinds, blogs and messages on the intranet, and more. In the case of the University of Aarhus, interpretation of gender issues and solutions were supported among others by the university's director of human resources and an highly-esteemed professor.

### R14. Exploit existing tools, traditions and sensibilities in the institute or local area

WHIST findings show that an important factor in facilitating the realisation of gender equality projects is the existence of previous projects on this issue, both in the institute concerned and the local area. The concrete benefits achieved by these project can be exploited, such as their specific results (e.g. database of experts), strategic plans, concrete tools such as guidelines for staff recruitment and/or management, and more intangible factors such as a widespread awareness and proactive attitude of institute managers and staff, or a consolidated image in the media or local public opinion.

### R15. Set internal guidelines

Another tool to consolidate a shared interpretation of the gender issue in research organisations, and to promote better management of human resources, is to formulate staff guidelines, such as those set by ESA during the WHIST experimentation (see chapter four, paragraph 2). These guidelines could contain general information about the problem of discrimination against women in the world of research, specific information about how this problem arises within the organisation and operational guidance on how to deal with it.



## **Area: the relevance and plurality of communication**

The construction of a shared interpretation and a shared understanding of gender issues and the solution to problems requires a form of communication that meets existing needs, addresses those concerned, and uses effective methods and channels.

Moreover, it should involve the potential beneficiaries of the programmes to combat discrimination in developing the forms and content of communication.

In this regard, and based on WHIST findings, the following recommendations can be made.

### **R16. Conduct ad hoc information and communication campaigns within the organisation**

Having identified the problems of discrimination and/or the possible options to resolve them, a particularly useful tool, especially in very large organisations (e.g. ESA), is an information and communication campaign. A campaign of this kind can involve actions that are both "traditional" (such as assemblies, meetings, newsletters, brochures, etc), and more innovative, such as the creation of intranet pages (as in the case of Fraunhofer IAO and AU), blogs, wikis and more.

### **R17. Pre-testing of communication initiatives**

WHIST findings show the benefits of a pre-testing communication campaign, involving a selection of actors within the organisation, before the actual campaign begin. This is to verify if the proposed content is in line with the various sensibilities of the actors and whether the communication methods (especially in the case of the Internet) are compatible with the culture and capacities of the target.

### **R18. Exploit existing institutional communication mechanisms**

The implementation of actions to promote gender equality can be facilitated by using and exploiting existing internal communication channels within large scientific and technological research organisations, such as those involved in WHIST





experimentation. These communication channels are usually easy to use and, therefore, widely used by all staff. Examples are the intranet (which can easily and quickly convey information on issues, problems and measures to be adopted), or the various internal electronic communication platforms that allow for "horizontal" online discussion, directly between individuals.

## **Area: valorisation of competencies**

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The creation of a shared view of gender issues in the world of scientific research also involves the participation of researchers from different disciplines and actors with different skills and sensibilities. It is also important to build and exploit competences and capacity (where they exist already) for action in the fight against discrimination.

In this regard, some specific recommendations can be made.

### **R19. Identify and activate people with specific competencies on gender issues**

The three WHIST experimentations show that the implementation of measures for gender balance in the world of science will be facilitated if the institute staff includes people with specific competencies in the field of equality, both in terms of content (gender studies) and the design and implementation of policies. Hence the need to identify these people (through in-house scouting: announcements, interviews, etc) and assigning them a role within the offices or programmes tackling discrimination.

### **R20. Set up teams which include researchers that have different competencies and are from different scientific areas**

In projects to combat gender discrimination, working groups should be established that are made up of researchers from different disciplines and with different competencies, where possible. This can provide a greater wealth of ideas as well as theoretical and operational contributions for project implementation. Similarly, having the chance to choose experts from outside the institute, and whose competencies are complementary, enhances the chances of a successful implementation of projects.



## R21. Include motivated women in planning and monitoring groups

To ensure continuity in the fight against gender discrimination, it is important to look into the possibility of setting up long term planning and monitoring groups that include motivated and competent women. In one case of excellence, a group was appointed to launch and support the programme mission for more than 14 years. Groups of highly motivated women ensure programme relevance and effectiveness.

## R22. Allocate resources to researchers involved operationally in gender equality programmes

WHIST findings show that it is important, when possible, to give paid time to researchers who are operationally involved in the management or implementation of programmes for gender equality, such as mentoring programmes. Sometimes these researchers belong to organisations that are not the promoter's, and thus paid time can be included as part of the scientific exchange agreements between researchers from different institutions. The pros and cons of transforming the voluntary commitment of those involved in paid time, of course, must be carefully assessed on a case by case basis.

## **Area: observing and monitoring**

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Interpretative capacity cannot and should not be exercised only once within individual organisations. In fact, situations evolve (in part thanks to the changes promoted), attitudes can change, staff come and go, and new obstacles and new opportunities can arise. In any case, discrimination phenomena can occur in many everyday situations in the organisation, or they may be present in the mechanisms that give rise to them.

Therefore permanent monitoring of the conditions of female researchers within organisations is fundamental, as well as the collection and management of information. In this regard, some recommendations can be made.



## R23. Create a network of responsibilities

To build solid consensus on combating discrimination against women, it is important to identify and assign responsibilities to people even outside the offices or groups institutionally or informally responsible for this issue. For example, advisory or supervisory committees can be set up, with the participation of managers or department heads.

## R24. Create permanent observatories

Information on gender issues should be periodically collected in research organisations to constantly monitor the situation and identify intervention needs (see R1). The experience of various institutions (including those that participated in WHIST) involved setting up more or less structured observatories, creating ad hoc bodies, and involving in-house facilities or professionals. Thus periodic data collection can be promoted, for example by means of internal statistical questionnaires (paper or online), focus groups and ad hoc meetings.

## R25. Manage and share information

As regards permanently setting up an observatory of gender issues in an organisation, it is essential to manage and share information. For example, one of the actions taken in Fraunhofer IAO was to restructure the menu item called "Equal opportunity" in the institute intranet, so that useful information could be collected and disseminated to all staff.



# Summary

Below is the table summarising the obstacles and recommendations outlined in the previous pages.

<b>OBSTACLES</b>	
<b>Obstacles stemming from the hidden structure of discrimination</b>	
O1.	Explicit denial of the phenomena of discrimination
O2.	A purely organisational perception of problems
O3.	Women researchers' discomfort with visibility
<b>Unavailability of information and knowledge</b>	
O4.	Lack of gendered statistics in research institutes
O5.	Unavailable or inaccessible information on research institute staff
O6.	Lack of information on previous experience in other organisations
<b>In-house communication problems</b>	
O7.	"Stereotypical" gender communication by research institutions
O8.	Inadequate in-house communication methods
O9.	Difficulty in planning communication activities
O10.	Poorly publicised policies in research institutions
O11.	Absence of institutional communication channels with other promoters of gender equality actions
O12.	Lack of relations between science organisations and government offices
O13.	The isolation of scientific research institutions engaged in gender equality policies
<b>Forms of dissent</b>	
O14.	Resistance to gender-related interventions
O15.	Use of the argument of meritocracy to justify a lack of commitment on gender issues
O16.	Stigmatisation of women involved in positive action
O17.	Male hostility towards affirmative actions addressed to women in research institutions
O18.	Gender bias igniting conflicts among women
<b>Poorly motivated actors</b>	
O19.	Lack of interest in gender issues among research institution managers and leaders
O20.	Indifference of the staff in research institutions



O21.	Divergent visions and motivations in the different departments/faculties involved in programmes
O22.	Difficulties in getting beneficiaries to become involved in actions
O23.	Lack of motivation and specific expertise in managing projects related to gender
<b>Organisational and bureaucratic dynamics affecting the involvement of actors</b>	
O24.	Implementation of gender equality actions depending on other sectors of the research institute
O25.	Overworked staff in research institutes
O26.	Difficulties in maintaining post-project relations
O27.	Ineffective monitoring systems
O28.	Divergences between scientific organisations and project partners
O29.	Problems in solving difficulties in mentorship relations
O30.	Difficulties in designing and implementing appropriate initiatives for women with high level jobs
O31.	Tendency to delegate decisions to managers

<b>RECOMMENDATIONS</b>	
<b>Area: demystification</b>	
R1.	Collect and disseminate gender statistics
R2.	Conduct an analysis of gender inequalities within the organisation
R3.	Identify and formalise the intangible and hidden aspects of discrimination
R4.	Adopt a comparative approach to understand gender differences in the organisation
R5.	Highlight the link between gender equality and economic development/competitiveness/innovation
R6.	Highlight the link between gender issues management and life/work quality
<b>Area: shared and consensual vision</b>	
R7.	Adopt a diversity approach that does not lose sight of the gender dimension
R8.	Promote dialogue between women and men
R9.	Create an awareness of gender issues among different types of actors
R10.	Collect the views of potential beneficiaries
R11.	Include gender issues as part of a broader public debate
R12.	Promote specific information on the relevance of gender to science, technology and engineering
R13.	Interpretation of gender issues and possible solutions supported by prestigious figures within the organisation
R14.	Exploit existing tools, traditions and sensibilities in the institute or local area



R15.	Set internal guidelines
<b>Area: the relevance and plurality of communication</b>	
R16.	Conduct ad hoc information and communication campaigns within the organisation
R17.	Pre-testing of communication initiatives
R18.	Exploit existing institutional communication mechanisms
<b>Area: valorisation of competencies</b>	
R19.	Identify and activate people with specific competencies on gender issues
R20.	Set up teams which include researchers that have different competencies and are from different scientific areas
R21.	Include motivated women in planning and monitoring groups
R22.	Allocate resources to researchers involved operationally in gender equality programmes
<b>Area: observing and monitoring</b>	
R23.	Create a network of responsibilities
R24.	Create permanent observatories
R25.	Manage and share information



Part Three

**Institutional and Operational  
Capacity**



*Discrimination against women in the research world cannot be combated without changing, at some point, the regulations that produce and reproduce it over time. It is, therefore, necessary to exert institutional capacity: this involves negotiating, at various levels, changes to procedures and rules, creating new structures, and establishing responsibilities and distinct powers.*

*In addition, for the changes to take place, measures need to be introduced that involve practical solutions to transform the practice and work setting of research institutions.*





There are many obstacles to the fight against discrimination of women in research organisations, ranging from rules and regulations and the inner workings of a given institution to the daily practices of people at all levels.

First, **rules** and **regulations** are sometimes vague, contradictory, difficult to implement, or, in some cases non-existent. As is known, often these rules and regulations are not implemented, or are badly implemented, due to dynamics linked to people, their powers and actual behaviour, and big or small **organisational barriers**. Sometimes, as we shall see below, the size of an institution, or even its decentralisation policies and organisational autonomy can have **paradoxically negative effects** on the implementation of rules, the design of measures, and the introduction of new practices.

In this framework, we often see, inside research institutions, many conflicts in the management of gender **programmes**. These conflicts are sometimes explicit but more often they are invisible and widespread. However, they are no less important because of this, and it is not always easy to involve the different levels of management to deal with them.

There are also, as we shall see below, numerous problems in the relations between research institutions and government offices, or other **external bodies**, which may directly or indirectly affect the situation of women in research organisations. Then there is the international **economic crisis**, which also affects the design and implementation of strategies and policies.

What is called here **institutional and operational capacity** involves the negotiation of improvements in the gender dynamics of research institutions by looking at rules and regulations and the way they are implemented, changing them, even radically, or producing new rules. This can contribute greatly to a restructuring of the hierarchies and dynamics of existing powers and change ingrained habits and behaviour.

This capacity can be seen in **negotiating and implementing** actions that can help change, effectively and in a reasonable time, organisational operations and everyday behaviour relating to gender issues in a given research institution.



This capacity, in the light of the three experimental initiatives conducted within WHIST project, involves knowing how to manage a wide range of actions that can translate **good will** and **statements into reality**: from the design, coordination, development and application of rules to the establishment and maintenance of relations with key external actors, at local and national level. There is no guarantee, for example, that a new regulation, once approved, will be applied, if the promoters do not involve the management, do not activate monitoring procedures, do not solve problems as they emerge, do not complain when commitments are not met, do not draw the attention of political actors towards their activities.

Based on the findings of the experimentations, the pages that follow illustrate **examples and ideas** of how to improve institutional and operational capacity to implement gender equality policies in research institutions.

In particular, as in the previous part:

- first, the obstacles that emerged during the experimentation will be illustrated;
- then the contexts in which the experiments were conducted, the type of actions undertaken and the results of these actions will be presented;
- on this basis, operational suggestions and recommendations will be made.



# Chapter Six

## OBSTACLES

The experimentation initiatives which took place at Fraunhofer IAO, ESA and AU made it possible to identify various types of **obstacles** to institutional and operational capacity. Several of these obstacles, as we shall see, are not obvious or evident. To find out about them is an important first step in the design and implementation of measures to combat gender discrimination in the world of scientific research.

The obstacles identified were grouped into **4 categories**, which will be described analytically:

- presence of **regulatory conflicts or gaps**;
- presence of **organisational barriers**;
- forms of “**structural inertia**”;
- effects of the **economic crisis**.

The numbering follows on from the obstacles described in chapter three.

### 1. Regulatory conflicts or deficiencies

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The first category concerns regulations, and in particular the existence of **conflicts** and **overlaps** at different **regulatory** levels (between laws, between national regulations and the rules of individual institutions, etc), or specific regulatory deficiencies or inadequacies. These obstacles, as we shall see, can create formal difficulties in the design and implementation of programmes to combat gender discrimination.



### O32. “Positive discrimination” as a legal impossibility

One particular area of regulatory conflict arises from the constitutional principle that states (both in Europe and in the different EU member states) that citizens are equal before the law, which creates significant difficulties to implement positive discrimination towards women, or towards one group of citizens rather than another. This raises problems such as, for example, the fact that it is impossible to use explicitly the gender criterion in the choice of recruits (even in cases where the scientific institution/university has decided to take this into account) or that it is not formally admissible for research institutions to give benefits to employees (as in the case of the ban in Germany on benefits for public service employees, which would be interpreted as a way of making their salaries higher than federal standards). In some cases, therefore, to implement a policy to support a greater access of women to leadership roles specific formal exemptions must be sought.

### O33. Institutional confusion due to different regulations in different institutions

At times institutional confusion is created when staff from different institutions may be working side by side but are not in the same legal and contractual situation. This happens frequently when applied research staff work with researchers from technical universities, which can make it impossible to get homogeneous information on employees (as seen in chapter three), or provide information, training or other types of services which benefit all those who work in the same place or operational context.

### O34. Gender issues in scientific organisations are included in the fields of social policy and labour law

Another problem stems from the fact that in some countries gender issues in science are the responsibility of ministries for women's labour and/or family. This supports and strengthens the belief that gender equality in scientific research is an issue that concerns only women, or that it is a problem related merely to working conditions. Thus the importance of this issue in the attainment of institutional goals such as innovation in science and technology is overlooked.



## 2. Organisational barriers

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A second category of obstacles to the implementation of gender equality measures in research institutions are what can be termed organisational complications, in the broad sense of the expression. These barriers can include aspects such as timetabling, allocation of resources, everyday conflicts and hidden rivalries between departments of a same institution.

### O35. Timetable constraints and mandates of staff in charge of equal opportunities

Staff responsible for equal opportunities in research institutions, whether appointed or elected, often work under regulations that severely limit scope for action. Thus, they can, paradoxically, become a source of additional problems in the implementation of gender equality initiatives in research institutions. For example, people in charge of equal opportunities cannot, by statute, dedicate more than a certain number of working hours to their tasks, or are not entitled to speak in meetings of the governing bodies, or are appointed from the ranks of the administrative staff, and so do not have a full understanding of the problems of scientific staff, and so are not accepted by them.

### O36. Managers involved have too many commitments

When programmes to promote gender equality in research institutes are managed by senior executives, progress may be slow due to their many commitments. This means that such activity can come to a standstill unless there is highly motivated staff, who have the trust of senior management and endowed with the necessary powers to intervene.

### O37. “Expropriation” of project activities by other sectors of the research institution

Another possible obstacle to project activities is the fact that some initiatives may be taken over by other managers and/or sectors of the research institution. This may happen as a result of internal power struggles in the institution or dynamics that are



beyond the control of the promoters, to the extent that management and, sometimes, participation in the activity are taken away from them.

### O38. Unwillingness of personnel not directly involved to work/participate in projects

A recurring difficulty, especially in pilot projects, is the reluctance of staff not directly involved in these projects to devote part of their working time to activities which are perceived an addition to their workload. This difficulty is most common when staff have not been made fully aware of the issues at stake (see chapter three). This could mean that the majority of staff do not give their explicit support to initiatives, and decide to sit on the sidelines.

### O39. Intra-organisational conflicts in research organisations

Sometimes conflicts may arise between different sectors of the research institution, which play different roles in the planned actions, and have different working methods. It was observed, especially in large organisations, that this is especially true for communication departments, which often tend to be a little inflexible in their routines. This can result in the planned activities being reviewed and delayed, because of differences with other sectors involved in projects, regarding aspects such as: style of communication campaigns; institutional communication standards, methods and content; the image of the institution being conveyed in the communication campaign; the methods of collecting feedback on proposed content.

### O40. Administrative opposition to the implementation of specific project requirements

Some difficulties encountered by the promoters of gender equality actions, particularly in the early or pilot stage, were due to a kind of institutional opposition from the administration department, so that simple operations or obligations are not done on time or in the way required. The administration department may be reluctant to authorise planned actions, request more information before proceeding, or be reluctant to fulfil obligations involving, for instance, the use of European project logos.



#### O41. Insufficient administrative support to the project team

A common problem is the lack of administrative assistance to project teams promoting gender equality, which creates difficulties when it comes to implementing activities. These deficiencies make even relatively simple operations difficult (such as, for example, travel arrangements), and they may have any number of causes, including administrative staff turnover or staff shortages, partly as a result of staff cuts.

#### O42. Inadequate allocation of human, technical and logistical resources

Among the obstacles most frequently mentioned by the promoters of gender equality initiatives is the inadequate quality and quantity of the resources allocated for the implementation of the programmes. There are numerous mentions of logistical difficulties (no place to work in), the lack of technical tools and equipment, the failure to appoint or find staff for equal opportunities or for specific aspects of the programme. In some cases, the cause of this was due to the programme's inherent instability, since it must be renegotiated each year with management.

#### O43. Lack of economic coverage for the work-time spent on projects

Even successful programmes have difficulties in getting economic coverage to pay personnel involved in planned activities (e.g. payments for university teachers taking part in seminars).

### 3. Structural inertia

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Another category of obstacles deserves special attention, because until now it has not really been the focus of actions to combat gender discrimination. The obstacles are of the type one might call “**structural inertia**”, i.e. obstacles due not to errors, organisational difficulties or delays, but to the very structure and operation of institutions (especially those that are large and/or with branches in many different



parts of the country). As will be seen below, sometimes this “inertia” can produce unintended and paradoxical negative consequences, unless they are detected and prevented.

#### **O44. The negative effects of decentralisation and organisational autonomy**

Some the difficulties found in implementing positive action for female scientific staff sometimes stem, paradoxically, from a high degree of organisational and administrative decentralisation in research institutions or universities, which gives them decision-making autonomy. This situation can, on the one hand, make it difficult to circulate information about activities and their results in other institutions, and, on the other, it can prevent the team in charge of the actions from applying the same criteria in the choice of beneficiaries.

#### **O45. Negative effects of the geographical decentralisation of research institutions**

Geographical decentralisation can sometimes be a major obstacle when initiatives targeting a certain category of people (e.g. women returning after maternity leave) take place only in one branch of the institution, penalising personnel who are unable to move (for example, women with children), especially when the initiative is organised far from one’s own office.

#### **O46. Long, drawn-out activities due to bureaucracy in research institutes**

The implementation of programmes that are outside normal operations (such as gender equality initiatives) is subject to the bureaucratic delays typical of all large organisations, including scientific research institutions. This structural feature makes it necessary, for example, to go through long and complicated formal procedures, perhaps involving several different offices and decision-making bodies, with consequences such as protracted delays and the need to review implementation procedures.





#### O47. High turnover of staff in charge of equal opportunities

High turnover of staff appointed to key positions for the implementation of gender equality measures, for whatever reason (end of contract, contingent causes, personal motives, etc), can slow down activities or bring them to a halt, depending on the role (promotion or external support) played by the person who leaves.

#### O48. Change of priorities during restructuring processes in large academic/business institutions

Among the biggest factors that affect the implementation of gender equality programmes in large scientific research institutions are the restructuring processes, which often lead to the appointment of new managers to the areas affected by changes. This can produce a number of consequences, mainly due to a change in priorities, such as: the redefinition of affirmative action targets (for example, goals in terms of the percentage of women at different levels); a reduction in the already limited availability of principals and managers to participate in the programmes; the establishment of a situation of widespread uncertainty that blocks decisions and produces delays in scheduled activities; redefinition and/or cancelation of actions initially planned.

#### O49. Need to redefine the projects on the basis of funding rules

One source of difficulty is the need to periodically adjust gender equality initiatives in research organisations to funding regulations, which are often established at the national and/or European level and can also change significantly from one year to the next. Besides taking up a lot of the promoters' time, this produces discontinuity in promoted activities, allocated resources and the work of the team itself.

#### O50. Bureaucratic problems linked to financial management and reporting procedures

Often, gender equality programmes are made possible by European funding, or the funds of the member states concerned, which are regulated by complex financial management procedures that are subject to minute and often complex financial reporting, which, in many cases, require special skills, and which the promoters do not often have. This can hinder good performance, especially where there is no provision for regular interaction between the team of promoters and the institution's administration department.



## **4. Effects of the economic crisis**

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Another category of obstacles, which must inevitably be addressed nowadays, stem from the effects of the global economic crisis in research organisations. Such crises often greatly impact projects such as those dedicated to gender issues, since they can cause a change of direction or even a reduction in their significance.

### **O51. Changes in corporate priorities due to the economic crisis**

The ongoing global economic crisis has led several European research institutions to reorganise and change their academic and/or business priorities, reducing the importance of initiatives aimed at promoting gender equality in their agendas.

### **O52. Cutting/downsizing activities already budgeted**

The general economic situation has resulted in several European universities and research organisations having to undergo a comprehensive process of transformation (the merging of faculties, staff cuts, etc), which has led to the cancellation or slowdown of previously planned initiatives.

### **O53. Cognitive effects of the economic crisis**

The general economic situation also affects the cognitive climate of research institutions, forcing management to adopt a restrained communication style, emphasising the need to avoid unnecessary expenses, or those presumed to be unnecessary, such as communication campaigns for issues that are not apparently vital to the institution's core business.



# Chapter Seven

## THE EXPERIENCE OF THE THREE INSTITUTIONS

The obstacles described in chapter six show how important it is to take action on **institutional and operational capacity**. But what can be done, concretely? In this regard, too, the three experiments carried out within the WHIST framework at Fraunhofer IAO, ESA and AU can provide important information and recommendations.

As previously suggested, these experiments can be seen as **on-going “social laboratories”**, experiences in which theory, design, practice and observation merges into one. More generally, the experimentation demonstrated the capacity of the project promoters to **negotiate and implement changes** in the management of gender issues in institutional and operational terms.

The following pages contain information on these aspects, illustrating what the promoters themselves wished to highlight during the course of their work and the final assessments made by them.

As in chapter four, mention will be made of the **context** in which the actors said they worked, the **specific procedures** they used to address the problems encountered and the initial **results** of the actions taken.

Based on this, and the information detailed in the previous chapter, some recommendations have been formulated, which will be presented in chapter eight.



# 1. The importance of context

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The WHIST experimentation took place in a **rapidly evolving environment**. The most important aspects of this environment, as regards the development and application of institutional and operational capacity, are described below.

A first important element, common to all three institutions, was the existence, even before the experimentation, of **institutional mechanisms** for gender balance and the problems of discrimination in the work environment. In two of the three institutions these processes have been active for over a decade (see boxes below).

In the University of Aarhus, operational measures to promote gender equality were introduced relatively recently, but that is not to say they have been ineffective (see box below).

## **Aarhus University: the Task Force for Gender Equality**

In May 2008, Aarhus University appointed a task force to formulate the new gender equality policy for the university. The task force concluded its work by preparing activity and action plans for gender equality at the university in the frame of a new human resources strategy. The task force consists of the managing director, the deputy director for HR, the deputy director for communication, representatives from the faculties, vice chancellor's secretariat, professors, FRAU representatives (female researchers at Aarhus University, (...)) and other staff. (...)

The task force formulated the following overall principles as a basis for its further work:

- A plan for more women in leadership positions
- Development of targets for gender equality
- Development of assessment tools
- Ensuring of a personnel policy that promotes gender equality – gender mainstreaming
- Recruitment contributing to gender equality
- Headhunting – both gender should be represented among the candidates for positions
- Emphasis on career development through – mentoring and other actions.



The task force for gender equality, aiming to improve the research and working environment for both male and female scientists, is working to implement its strategy at university level.

*Source: The Danish Centre for Studies in Research and Research Policy, Aarhus University, Final Report of the Experimentation Activities at Aarhus University E. Kalpazidou Schmidt, June 2011*

The Fraunhofer Gesellschaft's policy to increase the number of women in the institute, on the other hand, began more than twelve years ago (see box).

### Women at Fraunhofer-Gesellschaft

The percentage of female scientific staff has grown steadily since 1989.



Percentage of Women in the Scientific Staff (1989 to 2009)

An increasing in the number of female employees, especially in scientific and management positions, is a corporate objective that has been actively pursued by the Executive Board of the Fraunhofer-Gesellschaft for 12 years. Institutes with similar competencies act jointly in R&D markets

*Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011*

ESA began a similar process, as can be seen in the box below, over fourteen years ago.



### ESA policy on Equal Opportunities and Diversity

The 1997/8 Staff Survey carried out by the Human Resources Department brought to light the observation that there were “not enough women working at ESA”. Born out of that survey was the Women @ ESA Working Group, which was to make an initial attempt to identify needs and propose the way forward for equal opportunities at ESA. (...)

In November 2001, the Edinburgh Ministerial Council adopted a Resolution in which the Member States endorsed, inter alia, implementation by the Director General of a comprehensive policy aimed at improving the representation of women at the Agency, particularly at directorate and management levels, and more particularly in scientific and engineering functions. In June 2002, the post of Senior Advisor on Equal Opportunities and Diversity has been created with the mandate to implement this policy.

At the same time, attention was drawn to the sharp contrast between the situation at the Agency and the measures taken by other international organisations. And yet the Agency’s ability to adapt to a rapidly evolving space environment in Europe will depend to a very great extent on its staff. Gender equality is today recognised not only as a basic principle of democracy and respect for the individual but also as an essential factor in the creation of a balanced professional environment. Significant progress at ESA has been made in increasing female representation at management position. In 2002, women professionals at ESA accounted only for 8% compared to 17% in 2009. (...)

In October 2002, the Council endorsed project management mechanisms including an Equal Opportunities Action Plan, and the Equal Opportunities Follow-Up Committee which has convened for the first time in November 2003. The Follow-Up Committee plays a central role in implementing ESA’s Equal Opportunities and Diversity Policy, monitoring progress to date and defining new ways forward, including Specific Action Plans for Directorates introduced in 2004. (...)

In 2007, the annual Follow Up Committee has clearly shown the successes of the gender policy and decided to drive new initiatives from a broader view: Diversity. Enriched by this inherent diversity in languages and cultures, the challenge for ESA is to realise the full benefit of it to create a supportive work environment that enables people from diverse backgrounds to perform at highest levels, contribute fully to the organisation and feel professionally satisfied. To maximise diversity ESA has to design and implement internal processes to value everybody’s viewpoints and to develop for everyone the opportunity to develop skills and talents.

*Source: Final Descriptive Report on ESA experimentations, 2011*

As previously mentioned, the **economic and political situation** over the last two years has influenced institution policies. In particular, the fact that the experimentation



was carried out in a moment of general reorganisation (to tackle the crisis) led to a slowdown in activities or a review of their aims, in the light of new political and institutional agendas.

Crucial, in this sense, was the role of the research institutions' organisational and social culture. What emerges from the practices and reflections of the WHIST experimentation promoters is that the processes of institutional transformation, **despite the advances** made in recent years (see above), may slow down or come to a halt unless there is a common approach and vision, especially at times of high stress (for example, during the aforementioned corporate reorganisation).

**Effects of the restructuring of the Aarhus University on the experimentation**

Due to the re-organisation of the University and mergers of faculties during 2010-2011, the human resources department and the Task Force on gender equality eased their engagement in the implementation of the experimentation, prioritising the academic restructuring of the university. In addition the deans of the faculties, although involved from the beginning in the designing and implementation of action-plans for gender equality, being committed to the process of reorganisation canalised all their efforts to smoothen this process. Some pace problems due to re-structuring and mergers of faculties were therefore unavoidable.

*Source: The Danish Centre for Studies in Research and Research Policy, Aarhus University, Final Report of the Experimentation Activities at Aarhus University E. Kalpazidou Schmidt, June 2011*

It was found that in the organisational culture of the Fraunhofer Institute, as a technological-engineering institute, issues affecting personnel management and gender equality still seem to be sidelined, and many do not think they should be given much attention. Meanwhile, many young Fraunhofer researchers with a family, especially women, are forced to find their own solutions to reconcile family and work. This does not help female personnel to access or remain in the organisation.

Even the University of Aarhus is lacking in supporting young female researchers with families, since one reason for dropping out of an academic career, mentioned by female researchers, was overwork and lack of support in coping with it (see box).



### **Aarhus: mapping the reasons why researchers leave University**

The mapping (...) of the reasons why researchers leave Aarhus University taking on positions in other organisations or leaving science in general was carried out from June 2010 to September 2010. (...) Both male and female researchers state the reason for their choice with reference to the academic work conditions (long work hours, stress, lacking time to do research, etc), the conditions in the academic work environment (competitiveness, loneliness, lack of recognition, etc.) and the insecurity when it comes to job opportunities and career development. However, the study also confirms that the female researchers seem to suffer more due to these conditions. At the same time the study reveals a lack of workplace support to overcome the problems forcing the female researchers with young families to leave the workforce in a higher rate than their male colleagues.

*Source: The Danish Centre for Studies in Research and Research Policy, Aarhus University, Final Report of the Experimentation Activities at Aarhus University E. Kalpazidou Schmidt, June 2011*

In ESA, too, there is still a need to reinforce gender equality in the agency's organisational culture, although efforts and results to remedy the situation are being made, with initiatives to exploit differences.

## **2. The path to concreteness**

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The three promoters of the WHIST experimentation showed their operational and institutional capacity through various negotiation activities, designed to remove or circumvent the obstacles described above, to trigger new institutional dynamics and produce material changes within the institutions.

An important course of action taken during the experimentation was to conduct different forms of high-level institutional negotiation. For example, as regards the University of Aarhus, one action in the experimentation was to try and get the Danish government involved. In particular, the Human Resources department and Task Force on gender equality asked the Ministry of Science to make an **exception to the national law** and give permission to hire 20 female professors and associate professors (see box below).





**Incentives for women to follow a career at Aarhus University by establishing 10 new positions at associate professor level and 10 new positions at professor level**

In July 2010 the task force for gender equality decided to apply to the Ministry of Science, Technology and Innovation for a waiver from the national anti-discrimination law in order to establish 10 new positions as associate professor and 10 new positions as professor with special responsibilities. It is a prerequisite that the positions must be advertised in public and any applicants will have to be submitted to the usual procedures of an assessment committee like all other applicants for scientific positions at the university. If the best applicant turns out to be a woman, the university will pay a part of the salary to the faculty for a specific period of time.

*Source: The Danish Centre for Studies in Research and Research Policy, Aarhus University, Final Report of the Experimentation Activities at Aarhus University E. Kalpazidou Schmidt, June 2011*

To overcome legal obstacles and the privacy policies in the institutions, the full cooperation of the administrative staff was needed. In the case of Fraunhofer IAO, for example, administration is the only department in the institute that has legitimate access to data on staff families and that, therefore, can play an operational role in actions to support the institution as regards the families of employees. The administration, therefore, played a key role in the distribution of gift packs for babies newly born to Fraunhofer IAO staff as envisaged in the project, - i.e. action 3: "Raising awareness on re-entry process of Fraunhofer IAO employees in parental leave after baby-break" (see box below).



### Baby welcome package at the Fraunhofer IAO – Responsibility and process

There is great approval for the idea of the baby welcome package among the institute's human resources administration staff and they gladly take the responsibility for sending the presents. The process is initiated by the parents' notice to administration on the birth of a child. Then the responsible human resources administration officer forwards a greeting card to the director of the institute for his signature. In order to allow for a personal address of the employee, the name of the recipient is being provided. The director of the institute personalises the card with the correct title and name of the employee, attaches his signature, and sends it to the deputy director. After having signed the greeting card he/she sends it back to the administration. The human resources administration officer sends the romper suit along with a gift box and the signed greeting card to the private address of the employee. Afterwards she makes notice of the delivery to the person in charge of equal opportunities. The process is depicted in the following table. During the testing phase, notice of delivery is also made to the WHIST-team.

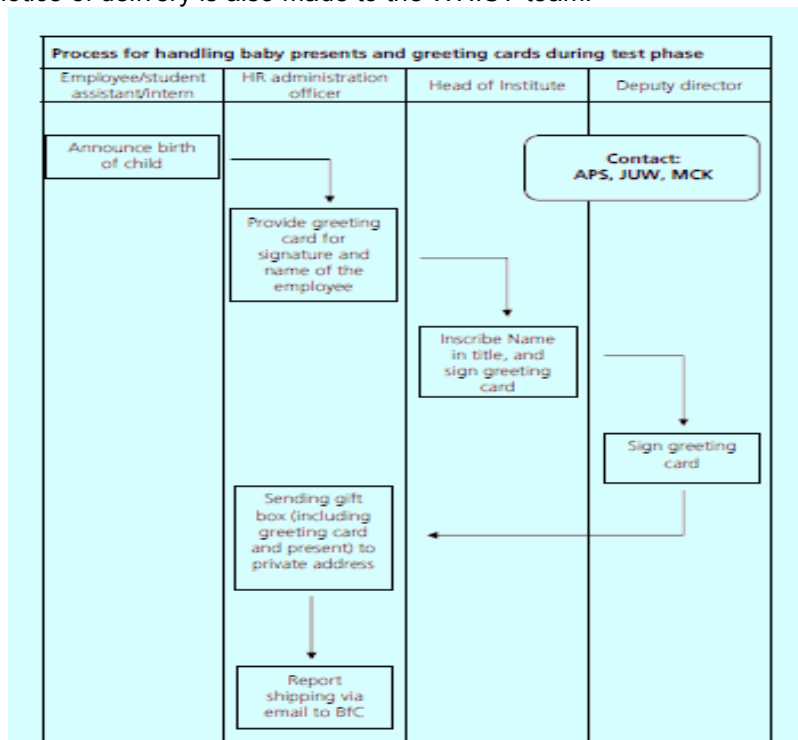
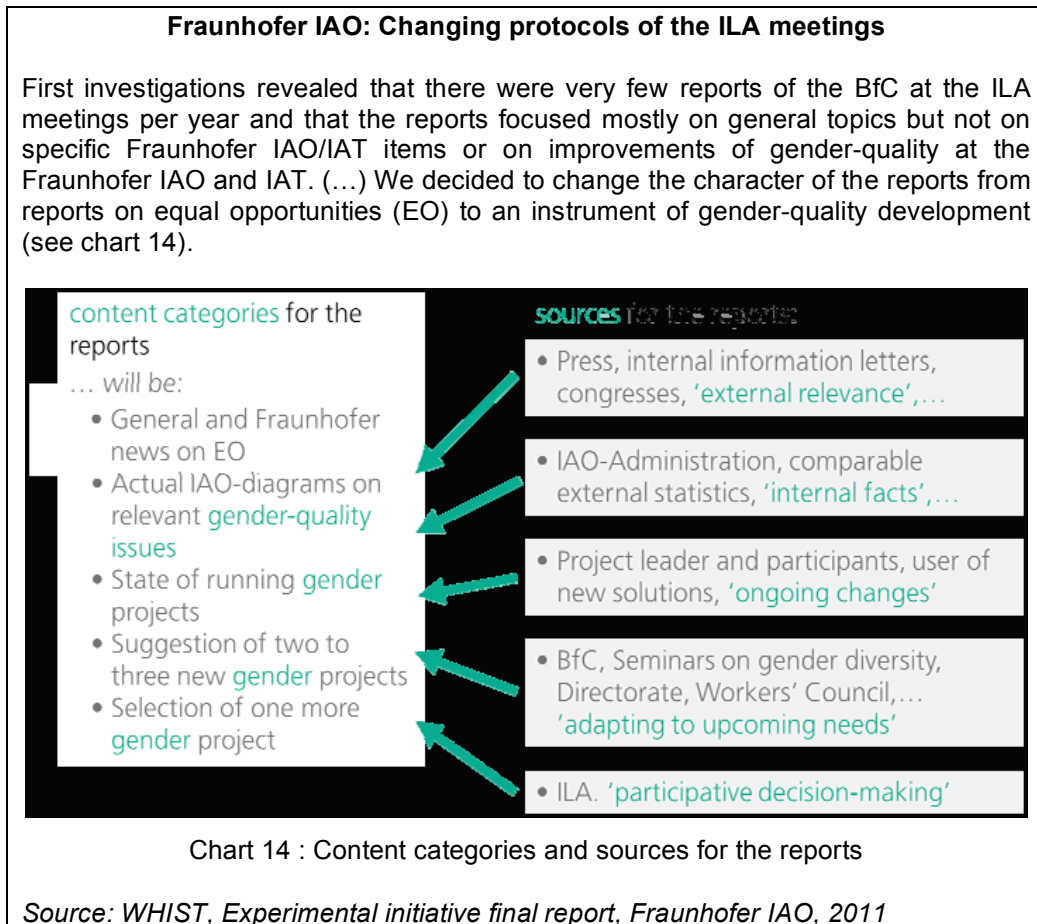


Chart 20: Process of distributing the baby welcome package

Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011



Another way of influencing the institutional and operational dynamics of the organisations was to **propose new ways of using existing institutional tools**, such as periodic reports (see box below).



The **opposition or skepticism of key stakeholders inside and outside the organisations** (e.g. those responsible for communication, equal opportunities, etc), as well as other problems (such as staff turnover), were continuously discussed and negotiated, involving and listening to all the parties involved.

In the case of ESA, for example, this type of action involved regular meetings, going over procedures and giving detailed explanations, also in writing, redefining the activities envisaged and, in extreme cases, referring to higher levels within the



agency. In Fraunhofer IAO it was also necessary to gain the trust of the employees association, specifically to carry out on-line surveys (see box below).

**Information regarding gender and diversity at the Fraunhofer IAO intranet -  
Online survey**

Right after the start of the online-survey, a member of the staff association informed the project team that a permission from the staff association is always required for conducting a survey among employees. (...) Thanks to (...) one of the members of the staff association, the problem could be solved without stopping or disturbing the on-going survey. He accepted a belated written explanation covering our motivation to collect the data and a declaration that we would not abuse any data to draw conclusions about individual employees.

*Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011*

The active and constant involvement of **different interlocutors** (scientific and non-scientific personnel from different fields), in the **management** and **monitoring** of actions, was, according to the promoters, a winning move (see box below).

**Aarhus University: involvement of organisational actors**

The facilitating factors related to the actions implemented at Aarhus University can be summarised as follows:

- The involvement of senior managers and university leaders in the process has been vital for the experimentations. The direct and visible commitment of the university leadership, the Task Force and the department of human resources has been decisive for the implementation, effectiveness, outcome and impact of the actions. In addition, the network of female researchers at Aarhus University (frAU) has actively supported the start up and implementation of the actions.
- The composition of the task force for gender equality involving (among others the managing director, the deputy director for human resources, the deputy director for communication, professors, representatives from the network of female researchers, human resources managers, personnel from the secretariat of the vice chancellors office, administrative officers and union representative) men and women with different experiences was a significant factor for the success of the experimentations.
- The establishment of an Experimentation Promoting Committee composed by personnel from the secretariat of the vice chancellors office and WHIST Danish partners supported the experimentation, translated good will and declarations to actions, smoothening thus the process through informal contacts and meetings.

*Source: The Danish Centre for Studies in Research and Research Policy, Aarhus University, Final Report of the Experimentation Activities at Aarhus University E. Kalpazidou Schmidt, June 2011*



In some cases, concrete support to the planned actions was achieved by **involving the personnel managers of partner institutions**. This is what the Fraunhofer Institute did to find participants in the seminar on gender differences (see box below).

#### **Finding external help to convene beneficiaries**

*We decided to address the five other Fraunhofer-Institutes on the campus in Stuttgart via the five PEKO (German acronym for the person in charge for the coordination of personal development at an institute). They were informed about the seminar via e-mail (...). They were asked to offer the workshop to their employees. At least two of them offered the workshop at their institutes.*

*Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011*

Sometimes, **in the absence of external relations**, the promoters used informal channels and **their own social capital** to find the practical information which was otherwise difficult to obtain.

#### **Social capital to solve practical problems**

First of all successful practical exemplars were collected and analysed. The search was partly very difficult. There are indeed organisations where employees receive a present upon the birth of a child. Unfortunately this is rarely made public. Therefore the best and easiest way to collect practical examples was by means of personal contacts. These discussions were very helpful for further planning the present. Among the discussed issues were “What should a present consist of?”, “How is the present given to the parents?”, “How much should such a present cost?”, and “What does the corresponding process in the organisation look like?”.

*Source: WHIST, Experimental initiative final report, Fraunhofer IAO, 2011*

**Difficulties in identifying and attracting beneficiaries**, due in part to the lack of specific information, led, in some cases, to a rethinking of the contents and types of activity. For example, in ESA, the assistance programme for spouses of expatriate staff was replaced by a survey on this type of personnel and their families.



**Pilot work assistance programme for expatriated staff.  
Synchronic description**

The initial plan of this action was to test the implementation of a work support programmes to help spouses/partners of ESA expat assignees to overcome the challenges that they face in searching for a job in the host country.

The first pilot has started in March 2010 with one staff partner in ESTEC, in the Netherlands. This coaching has permitted to the coachee that she found a job within the next 6 month. (...)

The spouse support programme tested at ESA was supposed to be proposed to other pre-identified women but as it was impossible to find enough representative candidates in the different establishments, the action has been rethought.

The action has therefore been reoriented to an earlier stage as it has been realised that there was a lack of information and internal data on the female expatriation "status quo".

An online questionnaire was designed and was sent to all ESA expatriates both men and women, i.e. more than 1500 employees.

*Source: Final Descriptive Report on ESA experimentations, 2011*

### 3. Outcomes

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In their final evaluations, the WHIST experimentation promoters pointed out a number of results that could be indicative of improved institutional and operational capacity. First, the effects reported by the people who benefited from the programmes will be illustrated, and then the changes that affected the whole organisation.

Regarding the direct beneficiaries, a series of outcomes should be highlighted, some of which were mentioned by the beneficiaries themselves. As regards the evaluation of the mentoring programme at the University of Aarhus, the mentees said:

- they received short and medium term **career planning information**;



- they were included in quality **professional networks** or, their networking capacity was strengthened;
- they became more aware of the actual **working conditions in the university**, which enabled them to manage their effects;
- they noted an **increase in their personal capacity and professional skills**;
- they became **more acquainted with the research environment**;
- they received advice on **balancing work and family life** and became more competent in this regard.

**Some final comments from the beneficiaries of the mentoring programme at Aarhus**

*"It is due to programmes like this that you feel confident about yourself - that you start to believe that you can navigate within academia. And you start believing that it's possible to get an academic career."*

*"I definitely believe that this mentoring programme has helped raise my independence and given me some totally different perspectives on career choices."*

*"I believe it has been good for me insofar that it has helped me develop a little bit of a "give 'em hell"- attitude and I believe a bit more in myself. Sometimes when I think: "No, I do not want do this", I think about my mentor, who says, "pull yourself together and get it done."*

*"I can feel the effect right away after every meeting with my mentor – I get a kind of support and an endorsement that enables me to put any anxieties behind me. Our conversations simply eliminate possible insecurities and it helps me become more dedicated."*

*Source: Ex-post evaluation of a mentoring programme for young female scientists at Aarhus University - Experiences and results from a one-year pilot project. Danish Centre for Studies in Research and Research Policy, Aarhus University, June 2011*

The positive effects of the actions undertaken involved other actors within the research institutes that promoted the experimentation. For example, **new relations were created between departments** within the same institution and **new communicative dynamics were triggered** in the organisation.

In particular, a "bottom-up" institutional communication process was activated in the Fraunhofer IAO involving staff at different levels. In ESA new alliances were made between departments.



Perhaps the most evident result in institutional and operational terms of the experimentation in the three institutions was the **continuation, confirmation or replication** of some of the **programmes implemented on an experimental basis**.

In particular, the University of Aarhus decided to continue mentoring activities and extend them to all faculties. ESA decided to continue all the actions undertaken. Finally, the Fraunhofer presidency decided to replicate the baby welcome package initiative on a larger scale.

The positive effects of the experimentation on the institutional dynamics of the organisations include the launch of **new policies and procedures** - some of which were introduced during the experimentation.

At Aarhus the request made by the Human Resources Task Force to make an exception to the national law has been accepted by the Ministry of Science and allowed the hiring of 20 new women professors and associate professors (see paragraph 2.), making it possible to implement an important measure for gender balance in teaching staff.

**New positions at associate professor level and at professor level  
for women at Aarhus University**

The application was approved by the Ministry in July 2010. The university management decided to implement the action as of February 2011. Also the university management decided the procedure as follows:

- It concerns new positions as associate professor and professor with special responsibilities. The positions must be advertised in public. The procedure for assessment of candidates is the same as with all other scientific positions at the university. The central HR department is coordinator and monitor of the action. However, the recruitment itself is delegated to the faculties offices. The faculties/schools are in charge of the recruitment process, and as mentioned before the procedure does not deviate in any way from the usual procedure for recruitment of scientific personnel - including public advertisement and assessment committees.

The number of new professors for each faculty has been decided by the actual size of the faculties .... The operation will run as long as there are positions allocated for the four faculties/schools that have not been filled with a female applicant.

*Source: The Danish Centre for Studies in Research and Research Policy, Aarhus University, Final Report of the Experimentation Activities at Aarhus University E. Kalpazidou Schmidt, June 2011*





In Fraunhofer IAO, the Governing Council (ILA) agreed to introduce an item on equal opportunities in the standard monthly meeting agendas.

#### Fraunhofer IAO - Change of the standard agenda for ILA-meetings

In the past, the contributions of the BfC to the ILA-Meetings were hidden under the agenda item 'Personal, BR' (which stands for: Staff and workers' council). The WHIST-teams' suggestion to list BfC as an explicit agenda item and thus to make the BfC concerns more visible at ILA meetings was picked up by the director in charge for personal affairs. The suggestion was introduced by him at a recent ILA meeting and was accepted by the body.

Agenda	<b>Tagesordnung:</b> <ol style="list-style-type: none"><li>1. Protokoll der letzten Sitzung; Report der vereinbarten Maßnahmen</li><li>2. Neues aus dem Direktorium</li><li>3. Koordination Projektanträge zu Ausschreibungen</li><li>4. Institutionelles</li><li>5. <b>Personal, BR, BfC</b></li><li>6. Bericht zu ausgewählten internen Projekten</li><li>7. Verschiedenes</li></ol>
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Source: WHIST, *Experimental initiative final report*, Fraunhofer IAO, 2011

As regards acceptable behaviour guidelines, in ESA a **review of current policies** for the prevention of harassment is currently being carried out.

#### ESA– Preventing gender discrimination and harassment

The guidelines do integrate a strong statement from the Director General and give instructions and practical advices for staff when facing critical situations, with a particular focus on preventing from the roots gender discrimination and harassment in the workplace. The guidelines contains also:

- A section explaining why the guide has been developed;
- A section describing what is expected from each individual working for ESA;
- The 4 principles at ESA;
- Best practices and examples of misbehaviour;
- A section highlighting top and middle management commitment in monitoring progress made and improving the quality of the working environment with a particular stress on women.

Source: *Final Descriptive Report on ESA experimentations*, 2011



The experimentation also provided an opportunity to design **new initiatives** and to adopt **new modus operandi**.

For example, ESA managers took important operational decisions during the experimentation, such as:

- stressing out behaviours deemed unacceptable;
- using the guidelines on acceptable behaviour to assess management capacity to handle diversity in the workforce;
- developing ESA "champions", using the guidelines on acceptable behaviour, to represent the agency in fields relating to gender and diversity;
- launching a new programme of activities starting with the institutional committee workshop on the management of diversity in all European offices, setting up a series of training activities (19 seminars to be held in the different ESA offices all around Europe) on the topic of gender and diversity.

In Aarhus, as a result of the mentoring programme, new interdisciplinary studies involving the departments of mentors and mentees were also started.

Last but not least, mention should be made of some effects produced by the experimentation on **external relations and joint initiatives with other similar organisations or partners**.

These included Fraunhofer IAO discussions with IAT on the management of personnel. This dialogue also involved consultation on initiatives aimed at gender equality and the gradual dissemination of information on initiatives of this type (with WHIST and otherwise), both in Fraunhofer IAO and other Fraunhofer institutes. This led to the adoption of the gender perspective and the start of negotiations to activate new initiatives in other institutes<sup>27</sup>.

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<sup>27</sup> Mention should be made, in this regard, of the information and awareness raising activities undertaken by the WHIST team, both inside and outside the Fraunhofer IAO, on the STAGES project proposal for structural change (SiS FP7-2011).



# Chapter Eight

## SUGGESTIONS AND RECOMMENDATIONS

It may be argued, in light of the WHIST experimentation, that to trigger new institutional dynamics and concrete changes, a number of **different forms of negotiation** need to be activated, involving different types of actors, both within and outside research institutions and at different levels.

Based on the work done and the phenomena described above, at least 5 areas of institutional and operational capacity can be identified, which require different modes of negotiation:

- elaboration and/or implementation of **rules and regulations**;
- active involvement of **institutional management**;
- production of **benefits for everyone**;
- establishment of **political relations** and **synergies with outside institutions**;
- **design and coordination**.

Within these areas, a set of strategic indications and recommendations have been identified, which are described in detail in the following pages. The numbering of the recommendations continues from where they left off in the previous chapter.



## Area: rules and regulations

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As we saw earlier, a series of obstacles to the effectiveness of interventions to combat gender discrimination in the research institutes can be found in National legislation (sometimes laws are contradictory) or in the regulations of specific organisations, which are sometimes poorly formulated or difficult to apply. It is therefore essential to identify and overcome these obstacles, at whatever level they may arise.

In this regard, some specific recommendations can be formulated.

### R26. Take advantage of favourable national legislative frameworks

Although anti-discrimination laws at the national level may make it difficult to opt for positive discrimination, there are also regulations aimed at creating a gender balance in the workplace which can be used to facilitate gender equality actions in universities and research institutes. In the University of Aarhus, the need to comply with legislation in efforts to promote women's access to academic management meant that, despite the reorganisation that the university was undergoing, this priority was maintained in the planning of activities and allocation of funds.

### R27. Results should be incorporated in new guidelines and regulations

To make lasting progress in the field of gender equality in science, it is necessary to elaborate, adopt and implement new sets of rules, which may concern one or more research organisations or institutions. In 2010, after the completion of the PRAGES project and during the WHIST project, to promote concerted action in the field of gender equality in scientific organisations at the national level, two Italian government ministries<sup>28</sup> signed a memorandum of understanding to pursue joint and coordinated actions, which are now being carried out.

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<sup>28</sup> Ministry for Equal Opportunities and Ministry for Education, University and Research.



## R28. Establish mandatory gender quotas in staff selection and promotion committees

As stated in the previous chapter, having motivated women in key roles (such as human resources management in two of three institutions involved in the experimentation), can make a big difference. In several gender equality programmes, compulsory gender parity in the scientific personnel selection and promotion committees was seen as a key success factor by the promoters.

## **Area: involvement of institutional leadership**

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No action against the discrimination of women, both in general and specifically in the research world, can succeed without the full involvement of the leadership of individual organisations. Therefore the direct and constant participation of managers and key players should be encouraged in the various project phases, providing also, if necessary, technical support.

In this regard, some recommendations can be identified.

## R29. Facilitate the direct involvement of the organisation's managers and other key players

A key factor for the success of measures to promote gender equality in science is the direct engagement of the research institution's leadership and key players (e.g. equal opportunities managers, women researchers' associations etc). The experimentations showed that the active participation of these actors must be constantly encouraged by including them in management and advisory committees and/or by transmitting updated information, holding meetings, requesting opinions and, when necessary, reviewing programmes on the basis of the information received.



### R30. Ensure technical and political support to the administrative staff involved in gender programmes

One of the most important commitments of complex and well-managed programmes is, according to the promoters of the WHIST experimentation, to support the administrative staff involved in the project. If the programme is to remain viable, it is important to carefully design and conduct support activities, for example by giving prompt information on the progress of the activities, collaborating operationally to solve any problems that may arise.

### R31. Involve decision-makers in working groups

One way to promote the engagement of decision-makers inside and outside research organisations in gender equality policies and measures is the creation of working groups. An example of this is the launch of thematic working groups involving the participation of all public bodies concerned, promoted by the Italian government after the agreement between the two key ministers for gender equality in science, namely the Minister of Education, University and Research and the Minister for Equal Opportunities, following the conclusion of the PRAGES project and during the WHIST project.

## **Area: production of benefits for all**

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An important action for the implementation of a project to combat discrimination against women in research institutes, which should not be taken for granted, is to produce and present clear and incontrovertible advantages for all the components of such institutions. In short, a project has to produce benefits not only for a group of beneficiaries (women and men too) but also the entire organisation, for example by helping to access new funds, acquiring greater visibility, improving the living and working conditions of different categories of employees.

In this regard, the following recommendations can be made.



## R32. Facilitate access to external funding

It is important to develop an organisation's capacity to establish a partnership and access government, private or European funds to carry out gender projects.

This really helps to facilitate the implementation of programmes of this type because it concerns an aspect of great importance to management, and which, moreover, confers visibility and prestige onto the promoters. In the case of the WHIST project, two of the promoters successfully implemented this strategy. In particular, as part of the structural change strategy, Fraunhofer IAO and the University of Aarhus proposed the continuation and extension of the WHIST experimentation to the entire organisation.

## R33. Promote the participation of men in committees and working groups for the promotion of gender equality programmes

As we saw in the previous chapter a key to the success of gender equality programmes is the involvement of men at various levels, both in promotion committees, and in implementation teams (for example, in the capacity of mentors). The adoption of this strategy has resulted in successful programmes, positive effects ranging from the softening of opposition to the progressive awareness of the existence of the gender issue among all research institution stakeholders (this can be seen in the final evaluations of the mentorship programme at the University of Aarhus), a prelude to further steps towards a cultural change within the organisation.

## R34. Consider the needs of beneficiaries from a “holistic” perspective

The experimentation also highlighted the importance of bearing in mind all the needs of beneficiaries: professional aspects, organisational considerations and the relationship between work and private life. Taking care of someone in an “holistic” perspective, for example, was considered by some Aarhus mentees as crucial to the success of the programme. In the case of new parents returning to the Fraunhofer IAO, some of the needs identified by the beneficiaries included providing more complete information on services offered by the institute (such as seminars for women returning to work) and on possible family-friendly measures inside and outside the institute, meeting the needs of their departments for updated information, taking into account the demand for more flexible working hours to take advantage of the baby care services.



### **R35. Implement visible and measurable arrangements to support the working life**

The adoption of measures to promote gender equality in science which produce visible improvements to working life and are widely disseminated, and which are given the right amount of publicity inside the institute, is an important enabler for projects to support women in the world of research. At the same time, it is important that these effects are measurable in some way, through specific indicators.

## **Area: political relations and external synergies**

A project or a series of structured and ongoing interventions for women in the world of research cannot but derive benefit from the establishment of political relations, networks, and synergies with outside actors. These actors include government agencies, local governments, project partners, entrepreneurs, supporters and sponsors, and other local players. As regards the launch, maintenance and development of these relations a number of recommendations can be made.

### **R36. Negotiate strategies and programmes with government agencies**

A key to the success of gender equality programmes, according to some experimentation promoters, is for strategies and programmes to fight discrimination against women to be regularly negotiated with government bodies (e.g. ministries for scientific research or national research agencies). This requires creating opportunities for contact and meetings to discuss issues and proposals, evaluate the feasibility and practicability of projects, jointly identify the needs of women researchers, and more.

### **R37. Get the support of regional and local governments in promoting gender equality policies**

An important factor in the success of gender equality initiatives is the support and the active role of regional and local governments in fostering relations with other agencies and offices by facilitating programme launch and operation, and contributing





management services and coordination. In this regard, it is important to establish permanent communication channels and provide regular specific opportunities for interaction and dialogue.

### **R38. Create synergies with advocates and partners at the local level**

The success of programmes to promote gender equality in science often depends on the establishment and maintenance of effective relations with and among public or private partners. Partners can help to communicate ongoing initiatives, give academic legitimacy, satisfy the supply and demand of services needed for the project (e.g. mentors and mentees), and organise programme events. Another group of actors that can facilitate the implementation of projects is civil society (women's groups, lobbies, non-profit organisations, citizens' networks and associations, professional associations, local media, etc). These actors can provide a useful contribution in terms of knowledge and experience, and foster the dissemination of results and reports. For this purpose, some project promoters took part in festivals and social gatherings to disseminate information and expand contacts. A number of successful projects established coordinating bodies to manage these relations, which helped to disseminate information and strengthen the project inside the institute and locally.

### **R39. Foster a sense of ownership in partnership programmes**

It is important to foster a sense of ownership among the various organisations taking part in a programme. In the most successful cases, the partners are often part of a consolidated group of organisations operating in the same sector or in the same area in different programmes or different editions of the same programme (this is partly true for the consortium that promoted and implemented the WHIST project). The sense of ownership needs to be built and developed over time, for example by formalising and sharing the project mission (through documents, "manifestos", public messages, etc), assigning roles and responsibilities among the various partners and fostering constant communication between them.

### **R40. Highlight how relations with the business world can be mutually beneficial**

Effective relations between gender equality programmes and the business world can be mutually beneficial for companies and research bodies (for example, the stable relations between the Fraunhofer IAO and Bosch). It is therefore necessary to



identify, formalise and communicate these benefits as much as possible, so as to facilitate collaboration between the two types of organisation. For example, it can be shown that programmes can access new funds and give greater visibility at local level through networking; or the programmes can be a source of new ideas and skilled human resources for companies and their associations.

#### **R41. Promote participation in research organisation networks**

To strengthen gender equality programmes in scientific organisations, efforts should be made to get researchers, as individuals and institutionally, to join national and international gender equality networks. WHIST partners, for example, include organisations that are part of the European Platform of Women Scientists (EPWS) and the League of European Research Universities (LERU).

#### **R42. Activate exchange strategies with institutions and programmes that have similar goals**

In some cases (including WHIST), partnerships or other forms of exchange are activated with similar programmes in the same area or elsewhere, even in other European countries. This enables information on respective initiatives to be shared, best practices and services (e.g. mentorship) exchanged, and overall quality improved, using a benchmarking approach. This would also make it possible to activate common fund raising strategies to continue the programmes (creating, for example, mentoring programme federations in different European countries).

#### **R43. Use the social capital of key people to solve problems**

Exploiting to the full the social capital of the people involved, using informal communication strategies and relations to acquire information, activate contacts and solve problems, has, in several cases, turned out to be the trump card for the teams promoting gender equality measures in large research organisations (such as Fraunhofer IAO), in which often the amount of bureaucracy and procedures is an obstacle to action. This requires producing a map of the project promoters' connections that can be exploited to the advantage of the same project.



## **Area: planning and coordination**

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To give a solid foundation to gender equality initiatives in the world of research, here as elsewhere, intelligent and intense planning activities, as well as coordination are needed at various levels. This involves constant monitoring of problems and situations, continuous exchange of information and ideas with the actors involved, networking and much more.

In this regard, some specific recommendations may be formulated.

### **R44. Clearly define the organisational structures responsible for equality**

The design and implementation of gender equality programmes is facilitated if the research institution has an institutional body with clear responsibilities in the field of rights and equality, as well as the design and implementation of activities and events. For this reason, in the WHIST experimentation, whenever this was lacking, working groups were set up with specific roles to design, implement and monitor activities.

### **R45. Personalised programming of interventions**

WHIST experience, as a whole, shows that personalised programming, which meets the needs of individual beneficiaries, is a factor that facilitates the smooth running of activities. It is important, especially in multi-year projects, that this programming is developed and calibrated at least once a year.

### **R46. Promote “cohort” planning to help groups and networks**

It is vital, in the design of programmes for gender balance in science, to use a cohort approach, namely to conceive the activities for a group of people (for example, young female researchers who have just completed a PhD) as opposed to the “smorgasbord programme” approach, where women choose to participate in individual events or workshops, but do not become part of a group. This design produces greater group identification and creates the foundation for the development and construction of networks.



## R47. Promote “multi-level” design

The best institutional transformation projects to set research institutions on the path to gender equality usually include the possibility of addressing the problems of discrimination against women in science from different points of view (institute, sector, disciplinary, individual, etc). Multi-level design, therefore, should be implemented in cases of integrated and complex projects, such as the WHIST project.

## R48. Adopt effective monitoring systems

Actions for gender equality in scientific organisations, like in any complex project, are more likely to succeed if there is careful planning, which includes monitoring and evaluation of the work in progress (see also chapter five). This may facilitate, where necessary, the early adoption of corrective measures (as frequently happened in the Fraunhofer IAO experimentation), including the redesign of planned actions (as in ESA), or the design and implementation of new activities (as in Aarhus University).

## R49. Creation of new legal entities for the implementation of programmes

A factor that fosters the sustainability of gender equality programmes, in some cases, is the establishment of new legal entities to manage the effects of the activities undertaken. There are, for example, recent cases of international programmes to support women's access to the governing boards of public and private bodies, which set up a profit making company to provide the programmes with the stability that otherwise is difficult to attain.

## R50. Select target beneficiaries that are homogeneous in terms of career paths

In some gender equality programmes that involved implementing similar actions in different contexts (e.g. mentoring programme federations), positive results have been observed when beneficiaries are selected on the basis of the procedures required to access scientific careers in their respective institutions and countries. This makes it possible to focus on a target that, at least in principle, has the same kind of problems.



## R51. Ensure the cultural matching of programme operators and beneficiaries

Ensuring that there are correspondences in the bilateral relations between operators and beneficiaries (e.g. mentees and coaches) is a factor for the success of a programme. If online interactions are planned, in the experience of some experimentation promoters a personalised approach is best. This means that instead of the correspondences being selected by computer software (as sometimes happens), all the factors that may affect the relationship between assistant and beneficiary must be taken into account (on the subject of which a lot of literature is available), such as information on personality types and a discussion and assessment of applicants.

## R52. Establish committees of experts to supervise and follow up the programmes

As confirmed by the positive results of the WHIST experimentation, committees should be set up to supervise and follow up the programmes; members should have the same disciplinary and/or geographical background as the beneficiaries. Committee members should provide advice, share experiences and, among other things, participate in informal discussions with the beneficiaries themselves.

## R53. Involve researchers from different disciplines in the programmes

The variety of disciplinary skills inside research organisations is a resource to be exploited, by establishing, for example, multidisciplinary teams to carry out gender balance project activities. Similarly, if an outside expert with complementary skills is called in, this increases the chances of project success.

## R54. Prevent problems in accessing data related to privacy

As noted in the WHIST experimentation, programmes for the collection of data on gender discrimination are often blocked over data access issues related to privacy. Since European legislation on privacy is, as it should be, rather restrictive, programmes in this field need to be equipped, from the start, with appropriate instruments, such as waivers to be distributed and signed well in advance of the programme implementation.



## **R55. Choose the right moment to propose the identification and discussion of gender issues**

To avoid promoting the right initiatives at the wrong time, it is essential for gender issue promoters to identify the best time to carry them out, taking into account the needs and deadlines of the organisation or the offices concerned. This involves continuous contact and exchange of views with the management, and specific monitoring activities to ensure things run according to schedule (for example, starting initiatives at the right time and not extend them beyond certain deadlines). The ESA experimentation team, for example, decided to postpone a fact-finding survey on expatriate staff which coincided with the end of the agency's restructuring phase, which concerned many managers and employees for several months, between 2010 and 2011.

## **R56. Facilitate networking within the organisation**

In order to increase the number of inside actors and advocates of gender equality programmes, creating the conditions for success, it is useful to design and set up formal and informal networks for discussion and exchange of ideas on the topics covered by the programmes. Such was the case with ESA, where the use of formal-informal communication, such as lunch meetings or the use of interactive media like wikis to disseminate guidelines on acceptable behaviour (a new experience for the agency), initiated an internal debate and the development of new kinds of relations.

## **R57. Promote and streamline the exchange of ideas and decisions concerning equality inside the organisation**

To promote the exchange of ideas and speed up decision making, it is essential to avoid excessive bureaucratisation, promoting an open and effective flow of information. ESA, for example, addressed this aspect by introducing new ways of circulating information and providing feedback, using the corporate intranet or setting up special wikis.

## **R58. Adopt mixed and flexible approaches to implement support programmes**

In the implementation of programmes to support female researchers, it is essential to adopt flexible approaches in which plans can be changed and adapted over time. This is in line with the culture of decentralisation that characterises many



universities and research institutions (see for example the case of different approaches to mentorship programme in two Aarhus University faculties). Greater flexibility can also attract new actors to the programmes (as was the case in ESA).

### R59. Avoid “conflicts of interest”

To encourage young female researchers to take part in programmes explicitly aimed at them, it is important for the programmes to be explicitly directed at the beneficiaries, and only indirectly aimed at other persons and the institution as a whole, to avoid the risk of them being seen as having hidden motives. For example, young female researchers participating in mentoring programmes at the University of Aarhus preferred the mentorship to be carried out by senior staff not employed in their own work and research environment. The reasons were to avoid the stigma attached to apprentices in universities and the risk that the programme, in reality, was a hidden way of co-opting research staff to the almost exclusive advantage of the institution where the programme was taking place.

### R60. Have a clear idea of the goals of the actions

One of the most important tasks, especially in situations where the actions can become protracted, beyond the control of promoters, is to always have clear final and intermediate goals. As stated by the Fraunhofer IAO team, it is possible to accept a postponement of the final goals, but the aims must remain the same. This, according to the findings, also applies to beneficiaries who should always be aware, during the experimentation, of the aims of the actions in which they are involved. In some cases, this may involve focusing specific attention on this aspect in the management of activities, resulting in the creation of specific tools such as manuals for conducting seminars, discussion guidelines, checklists etc.

### R61. Calculate accurately the time needed for negotiation activities

A fundamental lesson learnt (e.g. in the Fraunhofer IAO experimentation) regards the importance, also in terms of workload, of negotiation activities at all levels for the implementation of programmes. For a programme to operate, therefore, it is essential to accurately calculate the amount of time required for these activities, which can sometimes be quite long. In large organisations with a complex bureaucracy, this can result in long delays to the initial schedule. In this regard, it is useful to introduce periodic controls to verify progress.



# Summary

The table below summarises the obstacles and recommendations outlined in the previous pages.

<b>OBSTACLES</b>	
<b>Regulatory conflicts or deficiencies</b>	
O32.	“Positive discrimination” as a legal impossibility
O33.	Institutional confusion due to different regulations in different institutions
O34.	Gender issues in scientific organisations are included in the fields of social policy and labour law
<b>Organisational barriers</b>	
O35.	Timetable constraints and mandates of staff in charge of equal opportunities
O36.	Managers involved have too many commitments
O37.	“Expropriation” of project activities by other sectors of the research institution
O38.	Unwillingness of personnel not directly involved to work/participate in projects
O39.	Intra-organisational conflicts in research organisations
O40.	Administrative opposition to the implementation of specific project requirements
O41.	Insufficient administrative support to the project team
O42.	Inadequate allocation of human, technical and logistical resources
O43.	Lack of economic coverage for the work-time spent on projects
<b>Structural inertia</b>	
O44.	The negative effects of decentralisation and organisational autonomy
O45.	Negative effects of the geographical decentralisation of research institutions
O46.	Long, drawn-out activities due to bureaucracy in research institutes
O47.	High turnover of staff in charge of equal opportunities
O48.	Change of priorities during restructuring processes in large academic/business institutions
O49.	Need to redefine the projects on the basis of funding rules
O50.	Bureaucratic problems linked to financial management and reporting procedures
<b>Effects of the economic crisis</b>	
O51.	Changes in corporate priorities due to the economic crisis
O52.	Cutting/downsizing activities already budgeted
O53.	Cognitive effects of the economic crisis





<b>RECOMMENDATIONS</b>	
<b>Area: rules and regulations</b>	
R26.	Take advantage of favourable national legislative frameworks
R27.	Results should be incorporated in new guidelines and regulations
R28.	Establish mandatory gender quotas in staff selection and promotion committees
<b>Area: involvement of institutional leadership</b>	
R29.	Facilitate the direct involvement of the organisation's managers and other key players
R30.	Ensure technical and political support to the administrative staff involved in gender programmes
R31.	Involve decision-makers in working groups
<b>Area: production of benefits for all</b>	
R32.	Facilitate access to external funding
R33.	Promote the participation of men in committees and working groups for the promotion of gender equality programmes
R34.	Consider the needs of beneficiaries from a "holistic" perspective
R35.	Implement visible and measurable arrangements to support the working life
<b>Area: political relations and external synergies</b>	
R36.	Negotiate strategies and programmes with government agencies
R37.	Get the support of regional and local governments in promoting gender equality policies
R38.	Create synergies with advocates and partners at the local level
R39.	Foster a sense of ownership in partnership programmes
R40.	Highlight how relations with the business world can be mutually beneficial
R41.	Promote participation in research organisation networks
R42.	Activate exchange strategies with institutions and programmes that have similar goals
R43.	Use the social capital of key people to solve problems
<b>Area: planning and coordination</b>	
R44.	Clearly define the organisational structures responsible for equality
R45.	Personalised programming of interventions
R46.	Promote "cohort" planning to help groups and networks
R47.	Promote "multi-level" design
R48.	Adopt effective monitoring systems
R49.	Creation of new legal entities for the implementation of programmes
R50.	Select target beneficiaries that are homogeneous in terms of career paths
R51.	Ensure the cultural matching of programme operators and beneficiaries
R52.	Establish committees of experts to supervise and follow up the programmes



R53.	Involve researchers from different disciplines in the programmes
R54.	Prevent problems in accessing data related to privacy
R55.	Choose the right moment to propose the identification and discussion of gender issues
R56.	Facilitate networking within the organisation
R57.	Promote and streamline the exchange of ideas and decisions concerning equality inside the organisation
R58.	Adopt mixed and flexible approaches to implement support programmes
R59.	Avoid "conflicts of interest"
R60.	Have a clear idea of the goals of the actions
R61.	Calculate accurately the time needed for negotiation activities



## Part Four

# **Developing and deploying a capacity for social innovation**



*Besides the capacity to interpret reality, motivate actors and have a positive effect on regulations and the actual functioning of organisations, it is also important to develop a capacity for social innovation.*

*In fact, the arena for finding solutions to gender issues in the research world is vast and requires the adoption of a strategic perspective and interventions that go beyond specific organisational contexts and address a wider range of problems. The capacity for social innovation, in this sense, involves being able to negotiate and promote profound changes in the relationship between science, technology and society, producing a positive effect on the situation of female researchers.*



## Chapter Nine

# THE CAPACITY TO TRIGGER SOCIAL INNOVATION

As we said at the beginning of these guidelines, and as we have tried to show in previous chapters, the **arena** of the fight against gender discrimination in research is **vast**. In fact, WHIST findings showed that many obstacles faced by the promoters (and the solutions) are not unique to gender issues in the strict sense but to science and technology in general, in their relationship with society. In addition, while several issues that emerged in the experimentation can be addressed by interventions within individual organisations, many others, perhaps most, can only be solved by actions on a **larger scale**, involving various types of public, private, and non-profit actors, at local, national and even trans-national level.

This means that if we really want to change the condition of researchers (at local level or in specific institutions), not only do we need to effect real change in individual research organisations but we also need to have the courage to **think big** and **think for everyone**. This means trying to produce structural, profound and somewhat irreversible effects, which to a certain extent are, in the world of science and technology and in the relationship between science and society as a whole. In essence, we must endeavour to promote **social innovation**, in collaboration with all actors concerned with these issues.

This is a **third type of capacity**, which leaders (at all levels) committed to gender equality in research must be able to effectively develop and implement. In addition to the capacity to interpret reality and motivate the actors, and the capacity to change the rules of the game and the actual functioning of organisations, it is necessary to develop a specific **capacity for social innovation**.

Without going into the broad debate on the notion of social innovation, in this particular case we refer to the capacity to **negotiate and promote**, as far as possible and within different contexts, **radical and lasting changes** in the relationship between science, technology and society, which can impact the condition of female researchers.



Of course, it is a capacity that may have **different degrees of intensity and different forms of application**, but it must still have at least one essential feature: the **adoption of a strategic perspective that is broader** than the one required to operate in a single organisation, where only specific issues are concerned and a relatively small number of interlocutors are involved.

This should be done in the knowledge that a quantitative and qualitative improvement in the situation of women in research will **contribute** to the expertise, intelligence, sensitivity, and vision required for the development of science and technology, creating a closer link between science and society, critical to human, social and economic growth.

On the basis of the WHIST findings, we can say that this particular **capacity for social innovation** must **meet certain requirements**:

- action against the discrimination of women in scientific research should be linked to **collective action and movements** through which women have over time produced important public policies and general social change;
- **political and cultural institutions must be involved**, at every level – local and (if necessary) national – in the elaboration and implementation of policies to support women in scientific research;
- the **media** should be used to raise awareness among the general public of the crucial importance of science and technology and its organisational structure in contemporary society, of the gender issues in the world of research and the interventions undertaken, or that can be undertaken in this field;
- **citizens should be encouraged to participate** (locally and in Internet networks) in the management of the current problems of science and technology, and specifically gender issues in research.

All this calls for actors promoting gender equality-oriented interventions in research to acquire a new kind of **political savvy**, in the sense of a moral and behavioural attitude that stimulates and follows up actions to promote social innovation in this field.

Each of these aspects is briefly described and illustrated in the following paragraphs, together with some examples of possible actions.



# 1. Collective action on gender issues

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First, the capacity for social innovation to tackle gender issues in research means being able to link projects in this field with broader **collective action**, typically undertaken by **movements** that have promoted new general policies in support of women.

Female researchers realising they are being discriminated against and trying to react often feel isolated. Isolation does not only exist within research organisations but also in the general public sphere, where often there are only sporadic or no interventions aimed specifically at gender issues in science.

In recent decades, it has become clear that **collective action** by women and for women has played a vital role in enhancing the condition of women in all spheres of social life. This action, which involves **constant work** by movements, associations, lobbyists, and committees, has managed to promote and implement important gender equality policies (regarding, for example, access to professions, support for family life, protection from discrimination and violence, etc.). Collective action has therefore effectively produced **social innovation**, since it has fostered general changes, benefiting individual women in their living and working environments.

It would therefore be important to find ways of **linking individual projects** against the discrimination of women in research to **the broader dimension of collective action**, by creating or strengthening, for example, bridges between these projects and more extensive networks, as happened in significant experiences in this field, such as the European Platform for Women in Science.

As we saw in previous chapters, WHIST projects included a number of in-house networking activities, but also involved, in several cases, external actors (to resolve, for example, similar problems in conjunction with other research organisations, or create real partnership programmes).

However, social innovation, in the sense referred to above, requires that those intent on producing profound and lasting effects have a broad and systematic capacity for networking, linking experiences, promoting (or strengthening) visible and public collective action, and influencing political agendas.

This involves **large scale negotiation interventions**, which may involve, for example, **actions** such as: mapping women's organisations (including those specifically dealing with the research community, and at local, national or trans-



national level); raising financial resources and finding organisational solutions to participate in meetings, seminars and events organised by these organisations; participate in (or promote) training programmes for leaders; participate in the development of joint strategies; participating in the drafting of announcements and manifestos; participating in networks to share resources and information; creating or supporting structures that provide female researchers with advice on gender issues; lobbying decision makers, and more.

## 2. Involvement of political and cultural institutions

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A second requirement of the capacity for innovation is the need to **involve political and cultural institutions** in the elaboration and implementation of policies to support women in scientific research. This involvement should be as broad as possible.

These institutions include **not only those officially responsible** for dealing with gender issues, but also other national, state or local governments actors, which can or may be able to determine, directly or indirectly, **strategies and policies** in this field or direct the impact they have (e.g. creating a conducive environment for the interventions, facilitating the implementation of policies through the provision of resources, etc).

In addition, it is important to liaise with **cultural institutions** at various levels, such as national research institutions and agencies, science museums and academies.

In this light, dialogue and collaboration should be established with **international or trans-national bodies**, such as European Community institutions, public and private European institutions, and more.

WHIST experimentation, illustrated in previous chapters, clearly shows the importance of involving these institutions in the design and implementation of interventions to support single women in science and technology research organisations. These can provide financial, legal, and consulting support, and also scientific, moral and symbolic legitimacy.





This support usually facilitates the success of a project, and may help to make it sustainable over time. However, in the medium and long-term, new and unforeseen obstacles may arise, which, in the absence of an enabling environment, may undermine even positive experiences. In this case, therefore, it is important to adopt a negotiation approach which considers the *whole*, going beyond individual projects.

In this regard, and purely by way of example, **actions** can be taken such as: providing decision makers with the results of studies on gender issues in research; setting up committees and working groups with government offices and local authorities; setting up ad hoc structures and offices for dialogue with institutions; meetings and seminars with parliamentarians (at national and EU level); lobbying; joint monitoring of policy implementation; training and capacity building activities with the joint participation of female researchers and decision makers, and more.

### 3. Mass Communication

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A third requirement that needs to be addressed in the perspective of social innovation is a widespread and knowledgeable use of the **"traditional" means of mass communication**, i.e. the press, television and radio (the Internet will be discussed in the next section). This is another possible example of the "think big" approach that characterises all forms of social innovation, and that is particularly important when extremely sensitive issues are being addressed, like gender in the world of science and technology. WHIST experimentation also included activities of this kind, involving local and national media.

Those willing to take on a leadership role to support the careers of women in science can interact with the media in various ways and at different levels, **negotiating the approaches, methods and content** produced and distributed.

One way, for example, is to raise **awareness** among the general public. This activity should also focus on the often taken for granted but little discussed importance of scientific and technological research in contemporary society, and the consequent importance of addressing gender issues in research.

Of course, the types of activities can vary depending on different situations and opportunities: from participation in discussions to the production of specific publications or broadcasts, from the preparation of dossiers and reports to "lighter",



but no less effective, activities offering advice on screenplays for films, TV series, and more. The involvement of institutions such as local science centres and science museums can also provide greater relevance and effectiveness to these communication activities, as also the promotion of new initiatives (for example, communication campaigns on science and women in science).

Another approach, which is quite commonly used, is to use the media as a sounding board to **disseminate the results of** completed or ongoing **projects**, or to promote new projects (such as publicising debates on these issues). Obviously, any action taken from the perspective of innovation requires specific and continuous commitment in this direction.

## 4. Participation

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A fourth requirement for social innovation in the relationship between gender and science is the need to promote **full and informed participation of citizens** at all levels.

Generally speaking, science and technology **are part of us all**. Of course, to carry out research, highly specialised and sophisticated knowledge is needed. But when, in today's knowledge society, science and technology become a factor for development and a tool to resolve economic and social problems of various kinds, then it is essential that the debate on scientific and technological research strategies, policies, and agendas involve all stakeholders, without exception.

The relationship between science, technology and society is so important, delicate and complex that the distinction between scientists and laymen, experts and non experts tends to lose its meaning, at least as concerns the definition of priorities, direction and relevance of research.

It has been suggested<sup>29</sup> on the basis of experiences and reflections conducted throughout the world, that a new form of citizenship is emerging, i.e. "**scientific citizenship**": science and technology are increasingly thought of as a public good,

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<sup>29</sup> See Quaranta G. (2007). Knowledge, Responsibility and Culture. Food for Thoughts on Science Communication. *JCOM*, 6(4).



bringing with it new rights, duties and responsibilities for all citizens, without distinction. In this sense, it is important that the public as a whole, and not only experts (scientists or politicians), take charge of promoting a new relationship between gender and science.

To do this, it is important to develop and implement new forms of **relationships and negotiation between research and citizens**, locally and at a wider level. For example, links should be created with the networks where today citizens communicate directly (as distinct from the media, and often in contrast to it), debate issues, learn together, exert a certain degree of **power** in terms of pressure, knowledge, information, legitimacy, and concrete actions.

In this regard, contact should be made both with networks and **local civil society** organisations (cultural and voluntary associations, NGOs, professional associations and networks, etc.), and actors and networks on the **Internet**, where knowledge, visions and proposals are increasingly developed and shared, and where there is **intense direct contact** between people, often on a large scale.

An important precedent in this field, to give an example, is the experience of many science museums around the world, which have experimented innovative **outreach programmes**, promoting partnerships with local actors, organising youth-oriented or specifically women-oriented initiatives on science, especially in schools, and initiatives with a strong public impact such as exhibitions or prizes<sup>30</sup>.

## 5. Political savvy

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This fifth point is not so much about another specific competence, but rather focuses on a moral and behavioural attitude, which may be difficult to formalise but which might give a soul to what has been written in these guidelines. In essence, to promote any kind of social innovation, including those involving the relationship between gender and science, it is essential for promoters of projects in this field to build up a specific kind of **political savvy**.

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<sup>30</sup> See the TWIST project (Towards Women in Science & technology), conducted under the Community's 7<sup>th</sup> Framework Programme: <http://www.the-twist-project.eu/it/>



As mentioned above, the experimentation clearly showed how a project cannot, by itself, find the resources to have a lasting and significant effect over time. The point of this chapter is to stress how essential it is for promoters to acquire a capacity for social innovation, and its specific components (engaging in collective action, involving institutions, etc).

To this a further element should be added, what we have termed an **attitude**, which is probably at the very heart of innovation capacity, and represents a sort of hidden and cross-cutting catalyst: **adopt a wide-ranging, strategic and operational vision** of the fight against gender discrimination in scientific research.

This capacity, which we call political savvy, **takes many different forms**, and is utterly impossible to identify in advance. However, we can say that this attitude emerges whenever a project is, for example: **developed in conjunction with key actors and stakeholders**, who may be from outside the organisation; devised and implemented meaningfully by taking into account the needs and situations of **local and national contexts**; linked with others and produces mutual benefits; planned and implemented with **flexibility**, to respond to problems and opportunities inside and outside the institution; capable of formalising **transferable lessons and guidelines**.

Needless to say, all this may often require **additional resources**, both human and financial. The ability to find these resources is an integral part of the orientation to social innovation as described so far. It is the responsibility of the promoters of gender equality-oriented programmes in science, but it is also the task of institutions and organisations willing to effectively support the development and implementation of strategies and policies to overcome gender discrimination in the field.

Obviously, social innovation implies a qualitative and quantitative leap, as compared to more isolated interventions, or those regarding specific organisational or at most inter-organisational contexts. Building, developing, and experimenting with political savvy, in the sense referred to above, is the prerequisite for **transforming an innovative idea into a fact**, or moving from the realm of visions and projects into that of concrete, everyday, and profound **long lasting social processes**.



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