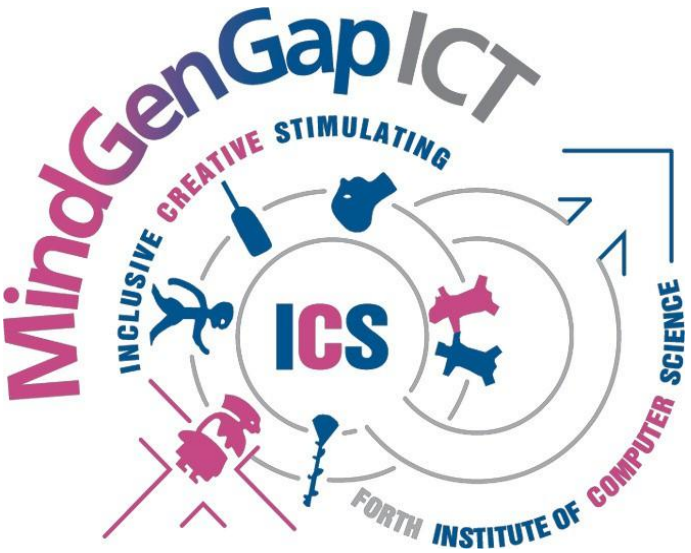
FORTH

INSTITUTE OF COMPUTER SCIENCE



Deliverable 1

Baseline Assessment and Reform Planning

Funded by the European Union

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1. Executive Summary

This deliverable D1 presents the baseline assessment and institutional reform planning developed within the framework of the 25-CoARA-055 -Mind the Gender Gap in Computer Science (MindGenGapICT) project, funded through the cascade scheme of the CoARA Boost project (Grant Agreement No. 101131826) funded by the Horizon Europe Programme. The report establishes the evidence base required to support the long-term advancement of gender equality, diversity, and inclusion within the Institute of Computer Science of the Foundation for Research and Technology – Hellas (FORTH-ICS).

The work combines quantitative and qualitative analyses of the Institute's organisational structure, workforce composition, leadership representation, and research environment with an extensive review of European policy frameworks, international benchmarking, study visits, and stakeholder engagement activities. The analysis examined gender representation across personnel categories, research laboratories, career stages, leadership positions, governance structures, and talent development pathways in order to identify structural barriers, institutional strengths, and opportunities for improvement.

The baseline assessment confirms that although women are well represented in administrative positions and show encouraging participation at early career stages, significant gender imbalances persist across scientific, technical, and leadership roles. The analysis also reveals considerable variation among research laboratories, with several technical domains exhibiting particularly low female representation. Furthermore, the absence of women from senior leadership and decision-making bodies highlights the need for targeted interventions supporting career progression, leadership development, recruitment, retention, and institutional governance.

Building upon these findings, the deliverable presents a comprehensive benchmarking exercise drawing upon European policy frameworks, including Horizon Europe Gender Equality Plan requirements, the European Institute for Gender Equality (EIGE) GEAR framework, the Human Resources Strategy for Researchers (HRS4R), the European Charter for Researchers, the Athena Swan Charter, and the Informatics Europe Minerva Good Practice Repository. Additional evidence was obtained through study visits to the Norwegian University of Science and Technology (NTNU) and Johannes Kepler University Linz (JKU), as well as analysis of good practices implemented by leading European universities and research organisations. The benchmarking exercise identifies governance structures, mentoring programmes, inclusive recruitment practices, monitoring systems, leadership initiatives, outreach activities, and organisational culture interventions that have successfully supported institutional transformation elsewhere and can be adapted to the FORTH-ICS context.

Based on the baseline assessment and benchmarking analysis, the report proposes a structured institutional intervention framework comprising actions across eight strategic areas, including recruitment and outreach, career progression and mentoring, leadership and governance, workplace culture and wellbeing, gender-sensitive research and innovation, education and capacity building, monitoring and accountability, and community engagement. These interventions are accompanied by a comprehensive implementation plan that assigns responsibilities, implementation timelines, and measurable outcomes.

A major outcome of the deliverable is the development of a multidimensional monitoring and evaluation framework consisting of Key Performance Indicators (KPIs), the introduction of a Gender Balance Index

(GBI), adaptation of selected She Figures indicators to the FORTH-ICS environment, governance arrangements, reporting mechanisms, and a three-year institutional implementation roadmap. Together, these elements provide FORTH-ICS with a practical mechanism for continuously monitoring progress, evaluating institutional performance, supporting evidence-based decision-making, and ensuring accountability.

2. Introduction

Deliverable D1 constitutes a key output of Work Package 1 (WP1): **Baseline Assessment and Reform Planning**, and its primary objective is to develop a comprehensive roadmap for institutional transformation at FORTH-ICS. This roadmap is grounded in a systematic assessment of the current state of gender representation, organizational structures, and institutional practices, and is designed to guide the implementation of targeted, evidence-based interventions.

Although the MindGenGapICT project is embedded within the broader principles of Inclusion, Diversity and Equality (IDE), the baseline assessment and analyses presented in this deliverable deliberately focus on gender representation, specifically the participation of women and men within FORTH-ICS. Other dimensions of diversity and inclusion, such as ethnicity, disability, age, sexual orientation, religion, or other protected characteristics, were not investigated as part of the present study.

This methodological decision was made because the significant gender imbalance observed within the Institute currently represents the most pressing institutional challenge. Furthermore, at the outset of the project, FORTH-ICS did not have dedicated mechanisms, policies, or monitoring processes specifically addressing gender equality at the Institute level. Consequently, establishing a robust evidence base on gender representation was considered the necessary first step towards developing effective institutional policies and targeted interventions.

It should also be noted that FORTH has established the Gender Equality and Anti-Discrimination Committee since 2018, which has developed the Foundation's first institutional Gender Equality Plan. While this constitutes an important milestone at the Foundation level, the MindGenGapICT project focuses specifically on the particularities, organisational culture, workforce composition, and operational realities of FORTH-ICS. The objective is to provide the Institute's leadership with evidence-based recommendations and practical measures that address its specific challenges and support the development of a more balanced, inclusive, and sustainable research ecosystem.

The work presented in this deliverable should therefore be viewed as the first stage of a broader institutional transformation process. Future activities will progressively expand the analytical framework beyond gender to incorporate additional dimensions of Inclusion, Diversity and Equality, enabling FORTH-ICS to develop a more comprehensive institutional approach aligned with evolving European Research Area priorities and best practices.

The deliverable contributes directly to the overall project objectives, which include:

(a) identifying structural and cultural barriers affecting gender equality in research and innovation;

(b) promoting fair and inclusive research environments in line with CoARA principles; and

(c) strengthening institutional capacity for monitoring, evaluation, and continuous improvement.

To achieve these objectives, D1 follows a mixed-methods approach, combining:

- quantitative analysis of gender-disaggregated institutional data (e.g. personnel composition, career stages, leadership roles);
- qualitative assessment of organisational dynamics and structural challenges;
- benchmarking against European best practices and policy frameworks; and
- stakeholder engagement with institutional leadership and research units.

The structure of this deliverable reflects this integrated approach. It begins with an analysis of the current institutional landscape at FORTH-ICS, followed by a review of relevant best practices and benchmarking exercises. Building on this evidence base, it proposes a set of targeted institutional interventions, supported by a comprehensive framework of Key Performance Indicators (KPIs) and monitoring mechanisms. Finally, the deliverable presents a roadmap linking the baseline findings to concrete actions, timelines, governance structures, and monitoring mechanisms, thereby establishing a coherent pathway towards sustainable institutional reform.

Deliverable D1 therefore serves as both an analytical and strategic document, providing the evidence base for the implementation of gender equality measures within the MindGenGapICT project while laying the foundations for a broader Inclusion, Diversity and Equality strategy that can be progressively expanded in future institutional initiatives.

3. Current State of Gender Representation and Institutional Dynamics

3.1 FORTH-ICS

The objective of this section is to present a comprehensive assessment of gender representation across FORTH-ICS. The analysis establishes the baseline evidence required to identify existing gender imbalances, understand institutional dynamics, and support the development of targeted interventions, monitoring mechanisms, and policy recommendations under the MindGenGapICT project.

FORTH is one of the largest and most internationally recognised research centres in Greece, operating under the supervision of the General Secretariat for Research and Innovation. FORTH comprises ten research institutes covering a broad spectrum of scientific disciplines, including computer science, engineering, molecular biology, laser science, applied mathematics, chemical engineering, and the humanities. Through its research, innovation, and participation in European programmes, FORTH has established itself as a leading contributor to the European Research Area.

Within this ecosystem, the Institute of Computer Science is one of the leading ICT research organisations in Greece, conducting internationally recognised research in Computer Science and Information and Communication Technologies. The Institute comprises several specialised research laboratories addressing complementary scientific domains.

3.2 Overall workforce composition

The following analysis presents the composition of the FORTH-ICS workforce as recorded in October 2025, providing a comprehensive overview of gender representation across the Institute's principal personnel categories. The analysis covers six groups representing the full research and career pipeline**: Researchers,**

Postdoctoral Researchers (including Marie Skłodowska-Curie Fellows), Scientific and Technical Staff, Administrative Staff, Scholarship Holders, and Undergraduate Award Holders.

Examining both the absolute number of personnel and the proportional distribution of women and men provides valuable insights into workforce composition, identifies areas where gender imbalances are most pronounced, and establishes the baseline against which future progress can be monitored. **Figure 1** presents the absolute numbers of male and female personnel across the six staff categories.

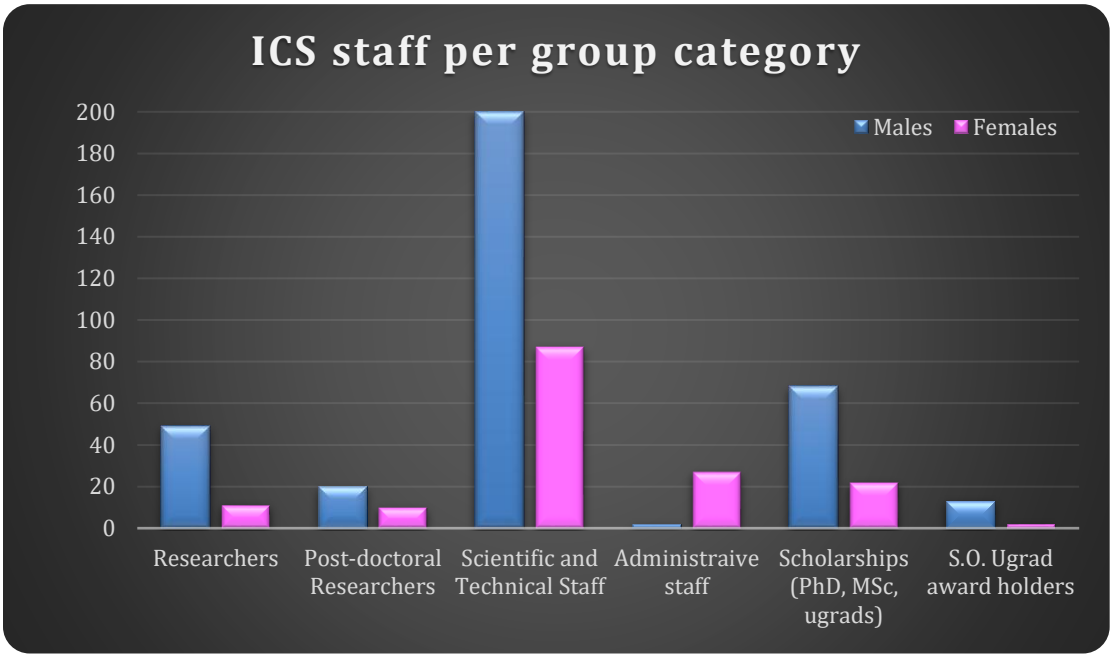
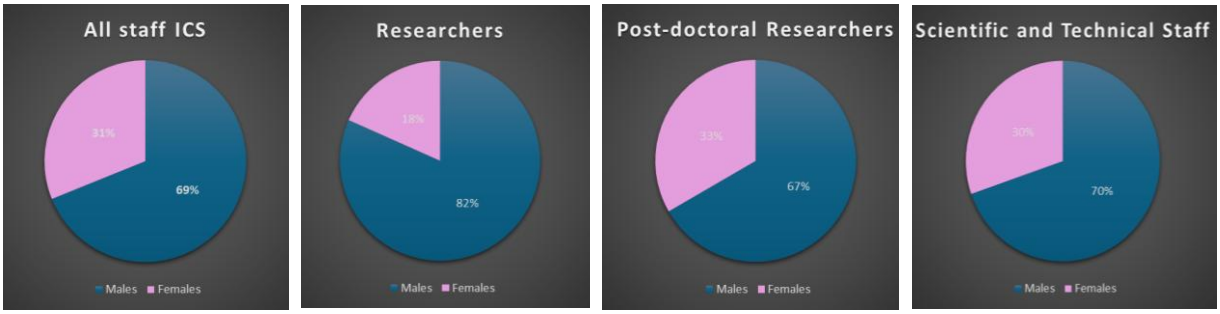


Figure 1: Gender distribution of FORTH-ICS personnel across the main employment categories (October 2025).

To facilitate comparison between categories of different sizes, **Figure 2** illustrates the percentage distribution of women and men within each personnel category.



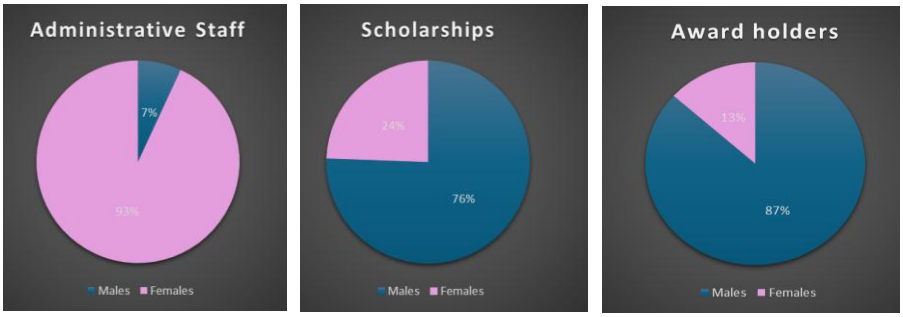


Figure 2: Percentage distribution of male and female personnel across the main personnel categories of FORTH-ICS (October 2025).

The workforce analysis reveals a consistent pattern of gender imbalance across most scientific, technical, and research-related categories within FORTH-ICS. Men constitute the majority of personnel in research, postdoctoral, scientific, technical, scholarship, and undergraduate award categories, whereas women are predominantly represented within administrative positions.

The largest personnel group comprises the Scientific and Technical Staff, which also exhibits a substantial gender imbalance, demonstrating that disparities extend beyond academic research positions and affect the wider scientific workforce of the Institute. Similarly, Researchers and Postdoctoral Researchers remain predominantly male, although the gender gap is less pronounced at the postdoctoral level, suggesting stronger female participation during the early stages of research careers.

The Scholarship Holder category indicates that gender disparities are already present at the beginning of the research pipeline. Likewise, the marked predominance of male Undergraduate Award Holders suggests that these imbalances originate before entry into research careers, reflecting broader patterns observed within Computer Science and ICT education.

A contrasting pattern is observed among Administrative Staff, where women represent the majority of personnel. While this contributes positively to the overall female workforce, it also reflects occupational segregation, with women concentrated primarily in administrative and support functions rather than scientific, technical, and leadership roles.

The analysis demonstrates that female participation decreases as responsibilities and scientific seniority increase. These findings are consistent with broader European trends reported in She Figures 2024[1], which highlight the persistent underrepresentation of women in STEM and ICT research careers and leadership positions. The results from this analysis provide clear evidence supporting the need for targeted institutional measures addressing recruitment, career progression, leadership development, retention, and organisational culture.

The baseline workforce analysis shows that although women are well represented in administrative roles and participate in the early stages of the research pipeline, they remain substantially underrepresented

[1] https://projects.research-and-innovation.ec.europa.eu/en/knowledge-publications-tools-and-data/interactive-reports/she-figures-2024

across research, technical, and senior scientific positions. These findings provide the baseline evidence for the Gender Balance Index analysis and the institutional interventions proposed in subsequent chapters.

3.3 Gender Balance Index (GBI) analysis by Staff Category

To complement the descriptive workforce analysis, a GBI was calculated for each personnel category. While absolute numbers and percentages illustrate workforce composition, the GBI provides a standardised measure of how closely each category approaches an ideal gender-balanced distribution.

The GBI ranges from 0 to 1, where:

- 1.0 indicates perfect gender balance (50% women – 50% men)
- 0.0 indicates complete gender imbalance, with representation by only one gender

The GBI was calculated using the following formula: $GBI = 1 - \left|0.5 - \frac{N_{female}}{N_{total}}\right| x2$

where N_{female} represents the number of women in a given category and N_{total} represents the total number of individuals in that category.

Unlike simple percentages, the GBI allows direct comparison between personnel categories of different sizes and provides an intuitive measure of institutional gender balance. Similar composite indicators are increasingly used within gender equality monitoring frameworks to support evidence-based policy development and organisational decision-making.[2].

To facilitate interpretation, the following classification scheme is adopted throughout this report.

GBI Value	Interpretation	Colour	
0.00 – 0.49	Heavily unbalanced	Red (males)	Purple (Females)
0.50 – 0.79	Moderate unblanaced	Yellow	
0.80 – 1.00	Good balance	Green	

The overall Gender Balance Index of **0.62** indicates a **moderate level of gender balance** across ICS-FORTH. While the Institute remains male-dominated overall, the index suggests that the workforce composition is not characterized by extreme imbalance. Nevertheless, the value remains significantly below the ideal balance score of 1.0, indicating substantial room for improvement in achieving more equitable gender representation across scientific, technical, and leadership positions.

Table 1:Interpretation of the Gender Balance Index by Personnel Category

Personnel Category	GBI	Interpretation	Key Observation
All	**0.62**	Fairly good balance	Overall workforce is closer to parity than individual personnel categories, although important gender disparities remain.

[2] European Institute for Gender Equality (EIGE). (2023). *Gender Equality Index 2023*. Luxembourg: Publications Office of the European Union.

Researchers	**0.37**	Heavily unbalanced (male majority)	Women remain substantially underrepresented in senior research positions.
Postdoctoral Researchers	**0.67**	Fairly good balance	Better gender representation at early research career stages, but balance has not yet been achieved.
Scientific & Technical Staff	**0.61**	Fairly good balance	Largest personnel group; moderate gender imbalance remains.
Administrative Staff	**0.14**	High imbalance (female-dominated)	Strong occupational segregation, with women concentrated in support roles.
Scholarship Holders	**0.49**	Unbalanced	Relatively balanced participation at entry-level research positions.
Undergraduate Award Holders	**0.27**	Heavily imbalance	Gender disparities emerge before entry into research careers.

The GBI analysis confirms that gender representation varies considerably across personnel categories within FORTH-ICS. The most balanced scientific categories are **Postdoctoral Researchers** and **Scientific and Technical Staff**, indicating that women are increasingly entering advanced research and technical careers. However, this improved representation does not translate into equivalent participation at senior career stages.

The **Researchers** category exhibits one of the lowest GBI values, demonstrating that women remain substantially underrepresented in permanent research positions. This pattern is consistent with the well-documented **"leaky pipeline"** phenomenon[3], whereby female participation progressively declines as academic and research careers advance. Similar trends have been widely reported across European STEM and ICT disciplines, where structural, organisational, and cultural barriers continue to affect women's progression into senior scientific and leadership roles.

A different form of imbalance is observed among **Administrative Staff**, where women constitute the overwhelming majority. Although this increases overall female participation within the Institute, it also reflects occupational segregation, with women concentrated primarily in administrative and support functions rather than scientific, technical, or strategic positions. Consequently, high female representation within administrative roles does not translate into comparable influence in research leadership or institutional decision-making.

The analysis further indicates that gender disparities emerge early in the talent pipeline. The low GBI observed **among Undergraduate Award Holders**, together with the imbalance among **Scholarship Holders**, suggests that unequal participation begins before entry into research careers and continues throughout subsequent career stages. These findings highlight the importance of interventions that address gender inequalities from the earliest stages of the research and innovation pathway.

3.4 Laboratory-Level Analysis

While the overall workforce analysis provides a comprehensive overview of gender representation across FORTH-ICS, it does not capture potential differences between individual research units. Given that FORTH-

[3] **Blickenstaff, J. C. (2005).** *Women and Science Careers: Leaky Pipeline or Gender Filter?* Gender and Education, 17(4), 369–386.

ICS comprises laboratories operating in diverse scientific and technological domains, analysing gender representation at laboratory level provides a more detailed understanding of how disciplinary orientation, research culture, team composition, and recruitment patterns influence workforce diversity.

The objective of this analysis is to identify laboratory-specific gender profiles, highlight variations across scientific domains, and determine whether particular research areas exhibit stronger or weaker levels of gender balance. Such evidence is particularly valuable for designing targeted interventions, as institutional averages may conceal important differences between research groups.

FORTH-ICS comprises the following research laboratories and scientific units:

- **CARV** – Computer Architecture and VLSI Systems Laboratory
- **CBML** – Computational BioMedicine Laboratory
- **CVRL** – Computational Vision and Robotics Laboratory
- **DiCS** – Distributed Computing Systems Laboratory
- **DSN** – Department of Systems and Networks
- **HCI** – Human–Computer Interaction Laboratory
- **ISL** – Information Systems Laboratory
- **SPL** – Signal Processing Laboratory
- **TNL** – Telecommunications and Networks Laboratory

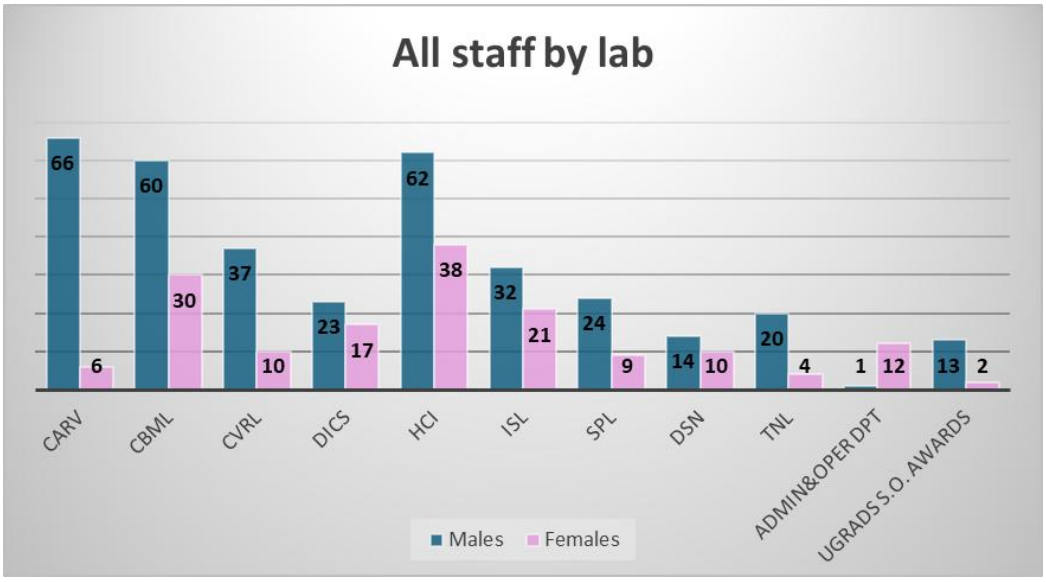


Figure 3: Total number of male and female staff members in FORTH-ICS laboratories. The data reveal distinct patterns across research units, reflecting differences in disciplinary orientation, team size, and research focus.

As illustrated in Figure 3, gender representation varies considerably across the research laboratories of FORTH-ICS. Although the Institute is predominantly male overall, important differences emerge between individual scientific domains.

Larger laboratories, including CARV, CBML, and HCI, account for a substantial proportion of the Institute's workforce but exhibit different gender profiles. Technical and engineering-oriented laboratories such as CARV, CVRL, and TNL display the lowest participation of women, whereas laboratories with stronger interdisciplinary, biomedical, or human-centred research activities, including DiCS, HCI, ISL, and DSN, show considerably higher female representation.

These findings suggest that laboratory size alone does not explain gender balance. Rather, **disciplinary orientation, research focus, and the characteristics of the scientific community** appear to play a more important role in shaping workforce composition. Similar patterns have been reported internationally, where women tend to be better represented in interdisciplinary and application-oriented computing domains than in hardware, systems, and engineering-intensive fields[4].

Gender Balance Index by Laboratory

To complement the descriptive laboratory analysis, the GBI was calculated for each research laboratory.

Table 2: Gender Balance Index (GBI), interpretation, and key observations for each FORTH-ICS laboratory.

Laboratory	GBI	Interpretation	Main Observation
CARV	**0.17**	Heavily unbalanced	Very low female participation
CVRL	**0.43**	Unblanaced	Engineering-intensive domain
TNL	**0.33**	Heavily unbalanced	Persistent male dominance
CBML	**0.67**	Moderate imbalance	Improving representation
SPL	**0.55**	Moderate imbalance	Male-dominated
HCI	**0.76**	Moderate imbalance	Comparatively strong female participation
ISL	**0.79**	Moderate imbalance	Near parity
DiCS	**0.85**	Good balance	Highest balance among laboratories
DSN	**0.83**	Good balance	Strong representation of women

The analysis reveals considerable variation in gender representation across the laboratories of FORTH-ICS, with an average **GBI of approximately 0.60**, indicating a **moderate level of gender balance across the Institute's research units**.

Nevertheless, substantial differences emerge between individual laboratories. DiCS (GBI = 0.85) and DSN (GBI = 0.83) achieve the highest levels of gender balance and fall within the Good Balance category. ISL (0.79) and HCI (0.76) also demonstrate comparatively strong female representation, although they remain just below the threshold for full gender balance. In contrast, CARV (0.17), CVRL (0.43) and TNL (0.33) exhibit the lowest GBI values, reflecting persistent male dominance in engineering-intensive research areas. CBML (0.67) and SPL (0.55) occupy an intermediate position, indicating moderate gender imbalance despite comparatively stronger female participation than the engineering laboratories.

[4] Beyer, Sylvia. (2014). Why are women underrepresented in Computer Science? Gender differences in stereotypes, self-efficacy, values, and interests and predictors of future CS course-taking and grades. Computer Science Education. 24. 10.1080/08993408.2014.963363.

These differences reflect broader disciplinary patterns that have been widely documented across Europe, where women tend to be better represented in interdisciplinary, biomedical, and human-centred computing than in computer architecture, robotics, telecommunications, and systems engineering. The findings highlight the influence of disciplinary culture, educational pathways, and recruitment pools on workforce composition and underline the importance of implementing targeted measures to support female participation, inclusive recruitment, and gender-sensitive career development.

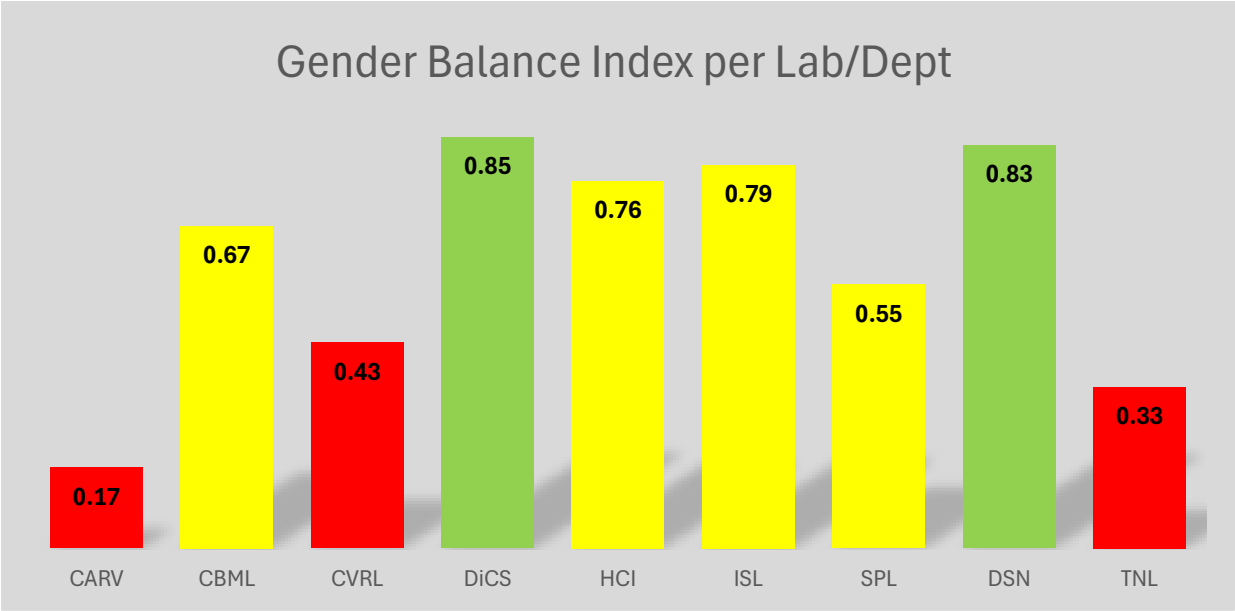


Figure 4: Gender Balance Index (GBI) across the research laboratories of FORTH-ICS. The GBI ranges from 0 (complete gender imbalance) to 1 (perfect gender balance). **Green bars indicate laboratories with** good gender balance **(GBI ≥ 0.80), yellow bars represent** moderate gender imbalance **(GBI = 0.50–0.79), and red bars indicate** heavily unbalanced **laboratories (GBI < 0.50)**

The strongest gender imbalances within FORTH-ICS are observed in laboratories specialising in computer architecture, robotics, telecommunications, and systems engineering, whereas laboratories engaged in distributed computing, networking, information systems, and human-centred research exhibit considerably stronger gender balance.

These findings suggest that gender disparities are shaped not only by institutional practices but also by broader disciplinary characteristics that influence educational choices, recruitment patterns, and career progression. At the same time, the existence of laboratories with high GBI values demonstrates that more balanced workforce composition is achievable within the Institute and provides evidence that organisational and cultural factors can contribute to improving gender representation.

The abovementioned findings support the adoption of a differentiated institutional strategy. Institute-wide policies should establish a common framework for promoting gender equality across FORTH-ICS, while laboratories exhibiting the lowest GBI values may require additional targeted measures. Conversely, laboratories demonstrating stronger gender balance may serve as internal examples of good practice, facilitating organisational learning and the dissemination of successful approaches across the Institute.

Such a combined strategy will enable FORTH-ICS to address both institution-wide challenges and the specific barriers affecting individual scientific domains.

3.5 Leadership, Governance and the Research Talent Pipeline

Leadership representation constitutes one of the most important indicators of institutional gender equality, as it reflects not only career progression but also participation in strategic decision-making, research governance and the overall direction of the Institute. Examining leadership structures alongside the early stages of the research pipeline provides a comprehensive understanding of how gender representation evolves throughout the academic and research career lifecycle.

The analysis of leadership positions within FORTH-ICS, including the Institute Director, Vice Director, and the Heads of all Laboratories, Centres, and Departments, reveals a complete gender imbalance in institutional leadership. At the time of the assessment, all thirteen identified leadership positions were occupied by men, resulting in **100% male and 0% female representation across the Institute's senior management structure.** This pattern is consistent across both institutional management and the leadership of individual laboratories and research units, indicating that women are currently absent from the highest levels of scientific and organisational governance.

A similar pattern is observed in the composition of the FORTH-ICS Scientific Council. Between 2016 and 2020, women accounted for between 16.7% and 33.3% of Council members, suggesting some degree of female participation in institutional governance. However, in the 2022 and 2024 terms, female representation declined to 0%, resulting in an entirely male Scientific Council. **Rather than demonstrating gradual progress towards balanced governance, the data indicate a regression in female participation within the Institute's principal scientific advisory and decision-making body.**

The absence of women from leadership and governance positions represents one of the most significant gender equality challenges identified by the baseline assessment. Beyond issues of representation, it limits the diversity of perspectives and reduces the visibility of female role models and limits mentoring opportunities for early-career researchers. These findings reinforce the need for targeted measures aimed at strengthening women's participation in leadership and encouraging qualified women to assume leadership responsibilities.

The analysis of the research talent pipeline further demonstrates that gender imbalances originate well before researchers enter the Institute. Undergraduate excellence awards, granted to outstanding students from the Department of Computer Science at the University of Crete, reveal a pronounced gender disparity, **with 87% of award recipients being male and only 13% female**. As these awards recognise high-performing students who constitute a potential recruitment pool for scholarships, internships, postgraduate studies, and research careers, they provide an important indicator of gender dynamics at the earliest stage of the scientific pipeline.

This imbalance suggests that FORTH-ICS inherits a talent pipeline that is already gender-skewed before recruitment into research positions begins. Consequently, although institutional recruitment and promotion policies remain essential, they alone cannot fully address the observed disparities in scientific and leadership positions. Achieving sustainable gender balance requires interventions that begin much earlier in the educational pathway, recognising that inequalities are shaped by broader societal and educational factors influencing participation in Computer Science and ICT.

These findings highlight the importance of strengthening the early STEM pipeline through outreach activities, collaboration with schools and universities, mentoring programmes, increased visibility of female role models, targeted scholarships, and initiatives that encourage girls and young women to pursue studies and research careers in ICT. Such actions are fully aligned with Horizon Europe priorities promoting gender-transformative approaches and the development of inclusive research careers. By expanding the pool of talented female students entering the research pathway, FORTH-ICS can progressively strengthen female representation across all career stages, including future research and leadership positions.

3.6 Key Findings of the Baseline Assessment

The baseline assessment provides a comprehensive overview of gender representation across FORTH-ICS and reveals several structural patterns that have direct implications for institutional policy and future planning.

As illustrated from the workforce data analysis, men remain the majority across most scientific, technical, and research-related positions within the Institute, while women are predominantly represented in administrative and support roles. Although female participation is more balanced at the postdoctoral level and among scientific and technical staff, this does not translate into equivalent representation in senior research positions or institutional leadership.

The GBI analysis further demonstrates that gender disparities vary across personnel categories and research laboratories. While some laboratories exhibit comparatively balanced gender representation, others, particularly those operating in engineering-intensive and systems-oriented domains, remain heavily male-dominated. These findings indicate that gender imbalance is influenced not only by institutional practices but also by disciplinary characteristics and broader trends within the ICT sector.

The analysis also highlights the existence of a "leaky pipeline", whereby female participation decreases progressively as academic and research careers advance. Gender imbalances are already evident at the earliest stages of the talent pipeline, as demonstrated by the low proportion of female undergraduate award recipients and scholarship holders. As a result, FORTH-ICS inherits a recruitment pool that is already gender-skewed, reinforcing the need for interventions that extend beyond the Institute itself and engage earlier stages of the educational pathway.

One of the most significant findings concerns institutional leadership and governance. Women are currently absent from all senior leadership positions within FORTH-ICS, and their representation in the Scientific Council has declined over the past decade, resulting in an entirely male governing body in recent years.

Taken together, the findings demonstrate that gender inequality within FORTH-ICS is a multifaceted issue affecting recruitment, career progression, leadership, organisational culture, and talent development. Addressing these challenges requires coordinated, evidence-based interventions supported by effective governance structures, systematic monitoring, and sustained institutional commitment.

The baseline assessment presented in this chapter therefore provides the empirical foundation for the benchmarking analysis, institutional intervention framework, KPI system, and transformation roadmap developed in the following chapters. By combining organisational evidence with European policy priorities

and international good practices, the MindGenGapICT project aims to support the long-term institutionalisation of gender equality, diversity, and inclusion within FORTH-ICS.

4. Best Practices and Benchmarking

Building on the analysis performed within chapter 3, this section presents a benchmarking analysis of best practices from leading European research organisations, policy frameworks, targeted study visits, and university-based inclusion initiatives. The objective is to ensure that the proposed measures, governance structures and KPIs developed within this deliverable are aligned with recognised European standards, evidence-based approaches and successful institutional practices.

The benchmarking exercise draws particularly on the **Informatics Europe Minerva Informatics Equality Award**[5], which brings together European good practices for supporting women in informatics research and education across the full career pipeline, including school outreach, student recruitment and retention, PhD and postdoctoral transition, academic recruitment, career progression, leadership and institutional culture change. The Minerva Informatics Equality Award recognises outstanding European initiatives that encourage and support women's careers in informatics research and education.

The analysis also draws on European Union policy guidance[6], the European Institute for Gender Equality (EIGE) GEAR tool[7], the Athena Swan Charter[8], the European Commission's *She Figures* reporting[9], study visits to NTNU and JKU Linz, the mentoring model of the University of Düsseldorf[10], and selected initiatives from universities and research centres addressing inclusion, internationalisation, mentoring, and support for underrepresented groups.

4.1 Benchmarking Rationale

The baseline assessment of MindGenderGapICT does not only identify internal gender gaps at FORTH-ICS, but also compare them with tested institutional responses from other European informatics departments, laboratories, universities and research organisations. The benchmarked examples show that effective reform is multi-level: it combines data monitoring, early outreach, mentoring, role models, inclusive recruitment, career-development support, anti-harassment structures and long-term governance.

A key lesson is that **isolated activities are less effective than structured programmes embedded in institutional strategy**. For example, NTNU's long-term gender diversity work combines outreach, mentoring, academic career support, student networks and visibility initiatives, while Chalmers/Gothenburg's GENIE initiative[11] set explicit targets for women's representation and addressed

[5] https://www.informatics-europe.org/society/minerva-informatics-equality-award.html
[6] https://ec.europa.eu/commission/presscorner/detail/en/ip_26_526
[7] https://eige.europa.eu/gender-mainstreaming/toolkits/gear?language_content_entity=en
[8] https://www.advance-he.ac.uk/equality-charters/transformed-uk-athena-swan-charter
[9] https://projects.research-and-innovation.ec.europa.eu/en/knowledge-publications-tools-and-data/interactive-reports/she-figures-2024
[10] https://www.mentoring.hhu.de/en/translate-to-english-mentorinnen
[11] https://www.chalmers.se/en/about-chalmers/organisation-and-governance/equality-at-chalmers/genie-gender-initiative-for-excellence/

hiring, leadership, work environment and structural barriers. These examples demonstrate that successful reform requires both targeted measures and institutional accountability.

For FORTH-ICS, benchmarking was therefore essential for translating the baseline findings into a practical roadmap by providing comparative evidence for selecting measures that are realistic, measurable and aligned with European research and innovation policy.

4.2 European Policy Framework and Emerging Trends in Equality and Inclusion

At the European level, gender equality in research and innovation is recognised not only as a matter of fairness and equal opportunities, but also as a key driver of research quality, institutional excellence, innovation performance, and societal impact. This recognition has become increasingly embedded within European research and innovation policies, with gender equality now considered a fundamental component of responsible and excellent research systems.

Under Horizon Europe, the existence of a Gender Equality Plan (GEP) constitutes an eligibility requirement for specific categories of legal entities, including public bodies, higher education institutions, and research organisations[12]. The European Commission identifies five key thematic areas that should be addressed through institutional Gender Equality Plans:

- Work-life balance and organisational culture;
- Gender balance in leadership and decision-making;
- Gender equality in recruitment and career progression;
- Integration of the gender dimension into research and teaching;
- Measures against gender-based violence, including sexual harassment.

These pillars provide an important conceptual foundation for both the KPI framework and the institutional roadmap proposed for FORTH-ICS.

Further guidance is provided by the European Institute for Gender Equality (EIGE) through the GEAR (Gender Equality in Academia and Research) Tool, which frames gender equality as a process of institutional transformation rather than a collection of isolated actions. The GEAR approach emphasises a continuous cycle of diagnosis, planning, implementation, monitoring, evaluation, and institutional embedding, closely mirroring the methodology adopted within the MindGenderGapICT initiative.

Recent European evidence further demonstrates that substantial challenges remain. The She Figures 2024 report confirms that progress towards gender equality in research and innovation continues to be slow, particularly with regard to leadership representation, career progression, and participation in STEM and ICT disciplines.

Beyond gender equality policies, broader European social and employment frameworks increasingly influence the management of research careers and working environments. The European Pillar of Social Rights[13] promotes principles related to equal opportunities, fair working conditions, work-life balance,

[12]https://eige.europa.eu/gender-mainstreaming/toolkits/gear/horizon-europe-gep-criterion?language_content_entity=en

[13]https://employment-social-affairs.ec.europa.eu/policies-and-activities/european-pillar-social-rights-building-fairer-and-more-inclusive-european-union_en

social protection, wellbeing, and inclusive labour markets. Similarly, the Council Recommendation on a European Framework to Attract and Retain Research, Innovation and Entrepreneurial Talents in Europe[14], together with the revised European Charter for Researchers[15], emphasises fair and transparent recruitment, merit-based career progression, inclusive and non-discriminatory working environments, gender equality and diversity, work-life balance, wellbeing, recognition of diverse career paths, and sustainable research careers. These principles are closely linked to the Human Resources Strategy for Researchers (HRS4R)[16], which promotes excellence in human resource management through openness, transparency, fairness, inclusion, and continuous professional development.

In this context, it is particularly important to recognise that FORTH has been awarded the HR Excellence in Research (HR Logo) by the European Commission. Maintaining this recognition requires continuous institutional commitment to transparent recruitment procedures, equal opportunities, ethical and professional working environments, career-development support, diversity and inclusion, and systematic monitoring and improvement of HR practices. The implementation of the MindGenderGapICT roadmap can therefore contribute directly to strengthening FORTH's alignment with HRS4R principles while simultaneously addressing Horizon Europe Gender Equality Plan requirements.

The broader policy and benchmarking analysis also reveals several emerging trends shaping contemporary European approaches to equality, diversity, and inclusion.

First, equality frameworks are becoming increasingly intersectional, recognising that barriers and inequalities often arise through the interaction of multiple factors, including gender, nationality, migration background, disability, socioeconomic status, age, caring responsibilities, and career stage. Consequently, leading institutions are gradually moving beyond single-indicator approaches towards more holistic diversity and inclusion frameworks.

Second, inclusion is increasingly linked to wellbeing, organisational culture, and quality of working life. Supportive work environments, psychological safety, mentoring opportunities, networking activities, work-life balance measures, career-development support, and a sense of belonging are now widely recognised as essential components of sustainable and attractive research careers.

Third, diversity and inclusion are increasingly viewed as drivers of research excellence, innovation, and institutional competitiveness, rather than solely as compliance requirements. Institutions such as NTNU, CERN, CNRS, HHU, KU Leuven, and Oxford demonstrate that inclusive environments contribute positively to creativity, research quality, diversity of perspectives, innovation capacity, talent attraction, and international visibility.

Fourth, European institutions are increasingly adopting evidence-based and data-driven approaches to equality governance. Systematic monitoring, KPI frameworks, annual reporting, institutional accountability mechanisms, and continuous evaluation are becoming standard components of institutional equality strategies. This trend reinforces the importance of establishing a robust monitoring

[14] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023DC0436
[15] https://euraxess.ec.europa.eu/hrexcellenceaward/european-charter-researchers
[16] https://www.euraxess.es/spain/services/human-resources-strategy-researchers-hrs4r

and reporting framework within FORTH-ICS capable of supporting evidence-based decision-making and long-term institutional learning.

Finally, there is a growing emphasis on the institutionalisation of gender equality, whereby responsibility is embedded within governance structures, leadership processes, human resources management, and strategic planning rather than being treated as a stand-alone project or temporary initiative. This trend strongly supports the proposed approach for FORTH-ICS, which seeks to integrate gender equality considerations into the Institute's long-term organisational development.

European policy increasingly links equality and inclusion to broader objectives such as Responsible Research and Innovation (RRI), research integrity, sustainability, innovation capacity, international competitiveness, talent attraction and retention, and social cohesion. Consequently, research organisations are encouraged not only to improve representation statistics but also to foster inclusive organisational cultures, transparent governance systems, safe working environments, equitable career-development opportunities, and supportive conditions for diverse talent.

For FORTH-ICS, these developments provide both a strategic framework and a strong justification for institutional reform. The proposed roadmap, governance mechanisms, monitoring framework, and KPIs are fully aligned with evolving European priorities concerning gender equality, diversity and inclusion, fair working conditions, career sustainability, institutional accountability, research excellence, and innovation performance. As such, the MindGenderGapICT initiative represents not only a response to identified institutional challenges but also a proactive contribution to the broader European agenda for inclusive and excellent research organisations.

4.3 Structural Approaches to Gender Equality

A major lesson from European frameworks and institutional practice is that effective gender equality interventions must be structural rather than symbolic. Awareness-raising activities are important, but they are insufficient if they are not accompanied by governance mechanisms, accountability structures, measurable objectives and changes in institutional procedures.

The Athena Swan Charter[17] provides one of the most established international frameworks for advancing gender equality in higher education and research. It is used to support and transform gender equality in research and higher education institutions, originally with a strong focus on advancing the careers of women in STEMM disciplines.

The value of the Athena Swan model lies in its evidence-based and action-oriented logic. Institutions are expected to collect and analyse internal data, identify structural barriers, set targeted actions and periodically review progress. This approach is directly relevant to FORTH-ICS, where the baseline assessment has identified uneven gender representation across the pipeline, strong male dominance in several technical laboratories and complete male dominance in top leadership roles.

Similarly, EU-funded institutional change projects such as MINDtheGEPs[18] demonstrate the importance of using organisational data to reveal hidden biases in policies, recruitment systems, promotion procedures and workplace cultures. This is highly relevant for FORTH-ICS, where one of the central findings of the

[17] https://www.advance-he.ac.uk/equality-charters/athena-swan-charter
[18] https://www.mindthegeps.eu/w/home/

baseline assessment is the absence, until now, of a structured internal mechanism for recording, monitoring and acting upon gender-related indicators.

4.4 Benchmarking with Leading Research Organisations

Benchmarking activities and study visits conducted within the MindGenGapICT project provided valuable insights into institutional approaches for promoting gender equality, diversity, inclusion, and career development in research and innovation environments. The analysis focused on leading European research organisations and universities, including Fraunhofer-Gesellschaft, CNRS, CERN, the Norwegian University of Science and Technology (NTNU), Johannes Kepler University Linz (JKU), and Heinrich Heine University Düsseldorf (HHU), with the aim of identifying transferable practices relevant to the context of FORTH-ICS.

Large research organisations such as Fraunhofer-Gesellschaft, CNRS and CERN demonstrate the importance of structured governance, transparent procedures, formal accountability mechanisms, and systematic monitoring. For example, CNRS has implemented a comprehensive Gender Equality Action Plan involving human resources services, gender parity structures, regional offices, and research laboratories, while also introducing gender advisors to reduce bias in recruitment and promotion processes. Similarly, CERN adopts a data-driven approach through its Diversity and Inclusion Programme, which emphasises diversity monitoring, institutional reporting, competency-based recruitment, bias-awareness training, inclusive organisational policies, and clear procedures for preventing exclusion, bullying, and harassment.

The study visit to the Norwegian University of Science and Technology (NTNU) highlighted the importance of strong institutional commitment and the long-term strategic integration of gender equality into organisational development. NTNU's approach demonstrates how equality objectives can be embedded across multiple organisational levels through governance structures, human resources policies, monitoring mechanisms, outreach programmes, and career-support measures. Particularly relevant elements included the integration of gender equality into institutional strategy, dedicated implementation structures, alignment between HR policies and equality objectives, systematic monitoring and reporting, leadership accountability, outreach activities targeting girls and young women, mentoring and networking opportunities, visibility initiatives for female researchers, and targeted support for women's academic careers. NTNU provides a valuable benchmark for FORTH-ICS by demonstrating that gender equality is most effective when treated not as a stand-alone initiative but as an integral component of institutional planning, leadership responsibility, and human capital development.

The study visit to Johannes Kepler University Linz (JKU) provided additional insights into structured equality planning, awareness-raising initiatives, dedicated equality offices, and the operational use of indicators and monitoring tools. Particular emphasis was placed on the role of equality officers, committees, and formal governance structures in ensuring continuity, accountability, implementation, and follow-up of gender equality actions. The JKU experience supports several elements of the proposed governance model for FORTH-ICS, including the establishment of a Gender Equality Office, the assignment of designated equality responsibilities, annual reporting mechanisms, the systematic use of KPIs, and the integration of equality monitoring into institutional decision-making processes.

Aiming to gain more insight from the JKU, MindGenGapICT project organised a specialised Diversity, Equity and Inclusion (DEI) workshop delivered by Dr Anna Szlávi from JKU at the FORTH premises in

Heraklion. The workshop provided practical insights into intervention-oriented approaches for improving participation, inclusion, and sense of belonging within STEM and ICT environments.

Particular emphasis was placed on the role of mentoring programmes, visible female role models, peer-support networks, outreach activities, confidence-building initiatives, and inclusive organisational cultures as mechanisms for improving the participation and retention of women in STEM and ICT careers. The workshop also highlighted the importance of addressing unconscious bias, fostering equitable participation in decision-making processes, and creating supportive environments that promote professional development and career progression.

Another key lesson concerned the value of participatory approaches to institutional change, whereby researchers, staff, and students actively contribute to the design and implementation of equality and inclusion initiatives. Such approaches strengthen institutional ownership, engagement, and long-term sustainability.

The insights gained through the workshop complement the findings of the benchmarking exercise and study visits and have directly informed the development of the intervention framework and institutional roadmap proposed for FORTH-ICS.

Particularly relevant for FORTH-ICS was also the example of the Heinrich Heine University Düsseldorf (HHU), which provides examples of both structured mentoring and broader inclusion initiatives. HHU has developed mentoring schemes aimed at supporting early-career female researchers through career planning, leadership development, professional networking, confidence-building, capacity development, and access to leadership opportunities. These practices directly informed the proposed measures concerning mentoring programmes, women researchers' networks, leadership training, coaching activities, and career-development support mechanisms.

In addition, HHU's Open Campus Summer School and Her Tech Future initiative illustrate how gender equality can be combined with broader inclusion objectives. These programmes support women, refugees, international students, and other underrepresented groups through activities focused on academic integration, career orientation, mentoring, networking, intercultural exchange, language preparation, and familiarisation with university life. The HHU model demonstrates how institutional strategies can address multiple dimensions of diversity simultaneously, including gender, nationality, migration background, internationalisation, and social inclusion.

The benchmarking exercise identified several transferable practices relevant to FORTH-ICS, including transparent recruitment and promotion procedures, gender-balanced evaluation committees, dedicated equality governance structures, mentoring and leadership-development programmes, diversity monitoring and reporting mechanisms, systematic use of KPIs, bias-awareness training, networking opportunities, inclusive organisational policies, outreach activities targeting future generations of researchers, and targeted interventions supporting both gender equality and broader inclusion objectives. These practices informed the development of the proposed roadmap and provide a strong evidence base for future institutional actions.

4.5 Best Practices

The **Informatics Europe Minerva Good Practice Repository**[19] is particularly relevant to the objectives of MindGenGapICT because it focuses specifically on Computer Science and ICT, disciplines where gender imbalances remain persistent despite ongoing policy efforts. The repository brings together successful initiatives implemented by universities, research institutions, and computing organisations across Europe.

A key lesson emerging from the repository is that successful institutional transformation is built upon a combination of governance, monitoring, outreach, mentoring, inclusive recruitment, career-development support, leadership initiatives, and organisational culture measures rather than isolated actions. Several institutions emphasise the importance of data-driven diagnosis and monitoring as a prerequisite for reform. Examples such as the Equality Observatory established by the **LIS Laboratory at Aix-Marseille University** and the structured equality planning approach adopted by **the West University of Timisoara** demonstrate how evidence-based assessment can guide institutional change and support continuous monitoring of gender representation, recruitment, promotion, leadership participation, and organisational culture.

The repository further highlights the importance of strengthening the ICT talent pipeline through early outreach activities targeting girls and young women. Initiatives such as **NTNU's coding activities for school students**, **Chalmers University and the University of Gothenburg's Girls Code Club**, and **the University of Passau's computer science summer camps** demonstrate how targeted interventions can increase interest and participation in computing-related disciplines. These examples support the development of similar outreach activities within FORTH-ICS, including coding workshops, AI demonstrations, laboratory visits, summer schools, and awareness campaigns featuring female researchers as role models.

Another recurring theme concerns the close relationship between recruitment, retention, and career progression. Successful initiatives combine recruitment efforts with mentoring, networking, coaching, leadership development, and visible role models. Programmes such as the **University of Coimbra's INSPIRA initiative**[20], **Utrecht University's Women in Computing Science (WICS) network**[21], **TU Delft's F+Cube programme**[22], and **UCL's ADVANCE initiative** demonstrate the value of structured support mechanisms in addressing the "leaky pipeline" phenomenon and improving the progression of women into senior and leadership positions.

The repository also demonstrates the importance of inclusive recruitment and promotion procedures. Examples from the University of Limerick, Lero, and Radboud University show how gender-balanced recruitment committees, bias-awareness training, transparent evaluation procedures, and active encouragement of female applicants can contribute to reducing structural barriers and improving representation. Similarly, organisations such as IRISA/Inria Rennes and LIS Aix-Marseille highlight the importance of formal equality structures, anti-harassment mechanisms, confidential reporting channels, and awareness-raising activities in fostering safe and inclusive research environments.

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[19] https://www.informatics-europe.org/society/minerva-informatics-equality-award/best-practices-in-supporting-women.html

[20] https://inspira.dei.uc.pt/index.html

[21] https://www.uu.nl/en/organisation/department-of-information-and-computing-sciences/organisation/initiatives-within-the-department

[22] https://www.tudelft.nl/ewi/over-de-faculteit/afdelingen/software-technology/f-cube

Finally, several initiatives focus on increasing the visibility of women in ICT and challenging persistent stereotypes. Examples such as the **Dutch Alice & Eve initiative**[23] demonstrate how communication, public engagement, and role-model initiatives can contribute to cultural change and improve perceptions regarding careers in computing and technology. For FORTH-ICS, these examples support the development of dedicated visibility actions showcasing female researchers, promoting women's achievements in ICT, and encouraging greater participation of girls and young women in STEM-related pathways.

Beyond the Minerva repository, additional examples from institutions such as KU Leuven, the University of Oxford, and Newcastle University further highlight the importance of family-friendly policies, flexible working arrangements, dual-career support, leadership development, and return-to-work measures following parental or caring leave. These practices are particularly relevant given the evidence of a leaky pipeline identified in the FORTH-ICS baseline assessment and reinforce the importance of addressing work-life balance and career sustainability as part of a broader equality strategy.

4.6 NTNU Toolbox for Improving Faculty Gender Balance

Another highly relevant benchmark is the NTNU Toolbox for Improving Faculty Gender Balance[24], developed as part of NTNU's long-term institutional efforts to improve gender equality. Unlike broader policy frameworks, the toolbox provides operational guidance for departments and research groups seeking to implement practical gender equality measures.

Its main contribution is the emphasis on locally adapted interventions, leadership responsibility, evidence-based planning, and continuous monitoring. The toolbox identifies three interconnected dimensions for action: recruitment, career advancement support, and organisational culture. The NTNU toolbox reinforces a central finding of the benchmarking exercise: sustainable progress requires coordinated action combining governance structures, monitoring mechanisms, career-development support, inclusive recruitment practices, and organisational culture interventions rather than isolated initiatives.

4.7 Key Lessons and Implications for FORTH-ICS

The benchmarking exercise, study visits, policy review, and analysis of international good practices reveal several consistent lessons directly applicable to FORTH-ICS. Although the institutional contexts examined differ in size, governance structures, disciplinary focus, and national settings, successful approaches share a number of common characteristics that can inform the development of a sustainable gender equality strategy within the Institute.

First, **successful institutional transformation requires strong leadership commitment and dedicated governance structures**. Equality objectives are most effective when embedded within institutional strategy, decision-making processes, human resource management systems, and organisational planning.

Second, **systematic monitoring and evidence-based decision-making are essential for identifying inequalities**, evaluating progress, and supporting institutional accountability. Effective organisations increasingly rely on KPI frameworks, annual reporting mechanisms, gender-disaggregated indicators, and continuous evaluation processes to guide policy development and assess the effectiveness of interventions.

[23] https://www.aliceandeve.nl/information
[24] https://www.gendim.no/en

Third, **mentoring, networking, leadership development, and career-support mechanisms** consistently emerge as effective tools for improving the retention, progression, and leadership participation of women in STEM and ICT environments.

Fourth, **interventions should address the entire talent pipeline**. Successful institutions combine outreach activities targeting girls and young women, inclusive recruitment practices, career-development support, leadership opportunities, and visibility initiatives.

Fifth, **organisational culture, wellbeing, and inclusion are increasingly recognised as critical factors** influencing recruitment, retention, productivity, and career satisfaction. Inclusive working environments, mentoring opportunities, work-life balance measures, anti-harassment procedures, and a strong sense of belonging contribute significantly to attracting and retaining diverse talent.

Finally, the benchmarking analysis demonstrates that **successful interventions are rarely implemented in isolation**. Sustainable progress requires coordinated action combining governance mechanisms, monitoring systems, mentoring activities, inclusive recruitment procedures, visibility initiatives, outreach programmes, and continuous institutional learning.

Collectively, these findings provide a strong evidence base for the reform roadmap proposed for FORTH-ICS. Importantly, international experience demonstrates that institutional change is most successful when accompanied by measurable targets, assigned responsibilities, dedicated resources, and regular review mechanisms. Therefore, this project has developed a KPI framework and institutional roadmap aiming to translate European good practices into a coherent and operational strategy adapted to the specific context of FORTH-ICS.

5. Proposed Institutional Interventions

5.1 Introduction

Having recognised the existing gender imbalances, structural barriers, and disparities identified through the baseline assessment, a targeted set of measures can be introduced to strengthen the participation, retention, progression, visibility, and leadership representation of women in research and ICT within FORTH-ICS.

The proposed interventions are derived from the baseline assessment, the working framework at FORTH, European policy review, benchmarking exercise, study visits, stakeholder consultations, and analysis of international good practices. They have been adapted to the specific organisational context of FORTH-ICS and aim to support long-term institutional transformation.

The measures address multiple dimensions including governance and leadership, recruitment and career progression, mentoring and networking, organisational culture and inclusion, work-life balance, integration of the gender dimension into research and innovation, and monitoring and accountability.

Collectively, these interventions form a roadmap for strengthening gender equality and inclusiveness within FORTH-ICS while simultaneously contributing to research excellence, talent development, organisational resilience, and alignment with European policy priorities.

5.2 Proposed Intervention Framework

Through the work performed under WP1 of the MindGenGapICT project, we have identified a number of structural challenges affecting gender equality, inclusiveness, career progression, leadership participation, and organisational culture within FORTH-ICS. At the same time, the analysis highlighted significant opportunities for institutional development and alignment with emerging European standards concerning diversity, inclusion, responsible research environments, and research excellence.

In response to these findings, a comprehensive intervention framework has been developed to support the gradual implementation of institutional change. The framework adopts a holistic and long-term perspective, recognising that gender equality cannot be achieved through isolated actions but requires coordinated interventions across multiple organisational dimensions. The proposed measures aim to address both the symptoms and underlying causes of gender disparities by targeting the entire research and innovation ecosystem, from recruitment and talent attraction to career progression, leadership representation, organisational culture, governance, and accountability.

The intervention framework is structured around eight interrelated areas of action:

1	Recruitment, Outreach and Talent Pipeline focuses on attracting more women and girls into ICT and research careers through outreach activities, visibility actions, targeted scholarships and awards, school engagement activities, laboratory visits, mentoring opportunities, and collaboration with higher education institutions. Particular emphasis is placed on encouraging female participation in undergraduate and postgraduate research activities and increasing applications from women to institutional recognition schemes and awards.
2	Career Progression, Mentoring and Retention aims to support the advancement of women through mentoring schemes, sponsorship, career-development opportunities, leadership preparation, grant-writing support, networking activities, and soft-skills training. Special attention should be placed to early-career researchers and female students in order to address barriers associated with the “leaky pipeline” phenomenon and strengthen long-term retention within research careers.
3	Leadership, Governance and Decision-Making seeks to improve the representation of women within institutional leadership structures, scientific committees, evaluation panels, and decision-making bodies. Proposed actions include increasing female participation in the Scientific Council and evaluation committees, introducing dedicated leadership-development opportunities, and exploring the creation of middle-management positions that can provide additional career-development pathways and leadership experience for younger researchers and staff members.
4	Workplace Culture, Inclusion and Wellbeing promotes an inclusive, respectful, and supportive organisational environment through awareness-raising activities, diversity and inclusion training, anti-harassment measures, work-life balance initiatives, childcare support mechanisms, and activities that strengthen community engagement and belonging. Particular emphasis is placed on fostering a culture where diversity, inclusion, and equal opportunities are viewed as integral components of organisational excellence.
5	Gender, Inclusion, Diversity and Techno-Ethics in Research and Innovation focuses on integrating Inclusion, Diversity and Equity (IDE) principles into research practice and innovation activities. A flagship action within this area is the development of a dedicated research strand on Inclusion, Diversity, Equity and Techno-Ethics, building upon existing initiatives such as the ERCIM Working

	Group on Inclusion, Diversity and Equity. This activity aims to establish a cross-cutting research and policy-development framework that combines technological innovation with societal, ethical, and policy considerations.
6	Education, Training and Capacity Building seeks to strengthen institutional competencies through the development of specialised training modules tailored to different target groups, including leadership, researchers, administrative staff, university students, and secondary education students. These activities will address topics such as gender equality, unconscious bias, diversity and inclusion, leadership, mentoring, responsible research and innovation, and inclusive organisational practices.
7	Monitoring, Evaluation and Accountability ensures that progress is systematically assessed through clearly defined indicators, reporting mechanisms, assigned responsibilities, and continuous evaluation processes. Particular emphasis is placed on the development of innovative monitoring tools, including the introduction of a Gender Balance Index (GBI) for personnel categories and laboratories, the adaptation of selected SHE Figures indicators to the FORTH-ICS environment, and the development of a digital monitoring platform supporting data collection, KPI calculation, visualisation, reporting, and evidence-based decision-making.
8	Visibility, Recognition and Community Engagement aims to strengthen awareness, participation, and institutional ownership through communication and recognition activities. Proposed actions include the establishment of a permanent Inclusion, Diversity and Equity column within the FORTH-ICS newsletter, regular IDE Coffee Hour events for informal discussion and exchange of ideas, structured feedback mechanisms between leadership and the FORTH-ICS community, and the introduction of new recognition schemes such as the “Equal Minds, Equal Code” Award. This award would recognise research groups, teams, or laboratories that actively integrate Inclusion, Diversity and Equity principles into their activities and demonstrate measurable progress towards balanced and inclusive research environments.

Collectively, the proposed measures constitute a practical roadmap for strengthening gender equality, diversity, inclusion, and institutional excellence within FORTH-ICS. The following intervention framework translates these strategic priorities into concrete actions, implementation timelines, responsible actors, and measurable indicators, providing a structured basis for implementation, monitoring, evaluation, and continuous improvement.

5.3 Proposed Institutional Intervention Plan

Building upon the intervention framework described above, a set of concrete institutional actions has been identified to support the gradual implementation of gender equality, diversity, inclusion, and organisational development objectives within FORTH-ICS. The proposed actions have been designed to address the key challenges identified through the baseline assessment while simultaneously incorporating lessons learned from European policies, benchmarking activities, study visits, and international good practices.

The intervention plan combines short-, medium-, and long-term actions covering recruitment, career development, leadership, organisational culture, research and innovation, monitoring, education, awareness raising, and institutional governance. Particular emphasis has been placed on interventions

that are realistic, measurable, and compatible with the organisational structure and operational environment of FORTH-ICS.

To facilitate implementation and monitoring, each intervention is linked to specific KPIs, implementation timelines, and responsible actors. This approach supports evidence-based decision-making, institutional accountability, and continuous assessment of progress. The proposed actions should not be viewed as isolated initiatives but rather as complementary components of a broader institutional transformation process aimed at fostering a more inclusive, equitable, innovative, and sustainable research environment.

The following table presents the proposed intervention plan and associated implementation framework.

Table 3: Proposed Institutional Intervention Plan for FORTH-ICS

Intervention Area	Action	Key KPI(s)	Timeline	Responsible Actors
Recruitment, Outreach & Talent Pipeline	Develop outreach programmes targeting female pupils and university students (schools, summer schools, lab visits, Girls in ICT events)	% increase in female applicants; number of outreach participants; number of schools engaged	Short–Medium term (6–24 months)	Gender Equality Officer, HR, Laboratories
	Increase visibility of female researchers as role models through public events and communication activities	Number of visibility actions; % female speakers in outreach events	Short term (6–12 months)	Communication Office, Labs
	Increase applications by female students to the Stelios Orphanoudakis Undergraduate Award	% female applicants; % female award recipients	Medium term (12–24 months)	Scientific Council, Award Committee
	Promote internships, MSc and PhD opportunities targeting female students	% female participants in internships and theses	Medium term (12–24 months)	Labs, HR
Career Progression, Mentoring & Retention	Establish mentoring programme for female students and early-career researchers	Number of mentor-mentee pairs; satisfaction rate; retention rate	Short term (6–12 months)	Gender Equality Officer, Senior Researchers
	Create Women in ICT / Women in Research Network	Number of participants; number of networking events	Medium term (12–24 months)	Gender Equality Committee

	Leadership and grant-writing coaching for women researchers	Number of participants; number of grant applications submitted	Medium term (12–36 months)	Research Support Office
	Develop career-development and soft-skills training programmes	Number of trainings; participant satisfaction	Ongoing	HR, Training Unit
Leadership, Governance & Decision-Making	Increase female representation in the Scientific Council and institutional committees	% women in governance bodies	Medium–Long term (12–36 months)	Institute Director
	Promote gender-balanced evaluation and recruitment committees	% balanced committees	Short term (6–12 months)	HR, Director
	Introduce middle-management positions to strengthen leadership pathways	Number of middle-management positions established; % women participating	Medium term (12–36 months)	Director, Scientific Council
	Establish Gender Equality Committee and designate Gender Equality Officer	Committee established; annual meetings conducted	Short term (6–12 months)	Institute Leadership
Workplace Culture, Inclusion & Wellbeing	Implement Diversity, Equity and Inclusion (DEI) awareness training	Number of participants; satisfaction rate	Short term and ongoing	HR, Gender Equality Committee
	Establish anti-harassment awareness and reporting mechanisms	Number of trainings; reporting procedures established	Short term (6–12 months)	HR
	Introduce childcare and family-support measures where feasible	Employee satisfaction; uptake of support measures	Medium term (12–36 months)	Institute Leadership
	Conduct periodic inclusion and workplace climate surveys	Inclusion Index; staff satisfaction	Annual	Gender Equality Committee
Gender, Inclusion, Diversity &	Establish a research strand on Inclusion,	Number of projects;	Medium term (12–36 months)	Research Groups

Techno-Ethics in Research and Innovation	Diversity, Equity and Techno-Ethics	publications; collaborations		
	Promote integration of gender and IDE dimensions into research proposals and projects	% proposals including gender/IDE dimension	Ongoing	Research Support Office
	Organise annual seminar/workshop on IDE and Responsible Research & Innovation	Number of events; participants	Annual	ERCIM IDE WG, FORTH-ICS
Education, Training & Capacity Building	Develop specialised training modules for leadership	Number of leaders trained	Annual	HR, Gender Equality Officer
	Develop training modules for researchers and administrative staff	Number of trainings; attendance	Annual	HR
	Develop educational activities for university and secondary-school students	Number of participants; satisfaction	Ongoing	Laboratories
Monitoring, Evaluation & Accountability	Introduce Gender Balance Index (GBI) across personnel categories and laboratories	GBI values by category and laboratory	Annual	Gender Equality Committee
	Develop FORTH-ICS Gender Equality Dashboard and KPI Monitoring Platform	Platform operational; number of KPIs monitored	Medium term (12–24 months)	IT Unit, Gender Equality Committee
	Adapt selected SHE Figures indicators to the FORTH-ICS environment	Number of indicators monitored	Annual	Gender Equality Committee
	Publish Annual Gender Equality and Inclusion Report	Report produced annually	Annual	Gender Equality Officer
Visibility, Recognition & Community Engagement	Establish the "Equal Minds, Equal Code" Award	Number of participating teams; annual award presented	Annual	Director, Scientific Council
	Ensure gender balance in institutional recognition schemes (e.g. MVP awards)	Gender balance among award recipients	Annual	Award Committees
	Introduce a permanent Inclusion, Diversity and	Number of articles published	Quarterly	Communication Office

	Equity column in the FORTH-ICS newsletter			
	Organise monthly IDE Coffee Hour events	Number of participants; number of events	Ongoing	Gender Equality Committee
	Establish structured feedback loops between leadership and staff	Number of consultations; participation rates	Annual	Director, Scientific Council

5.4 Strategic Priorities and Expected Outcomes

The proposed intervention plan aims to support a gradual process of institutional transformation within FORTH-ICS by addressing the key challenges identified through the baseline assessment and benchmarking activities. Although individual actions target specific aspects of gender equality and inclusion, they are intended to function as complementary and mutually reinforcing components of a broader institutional strategy.

Collectively, the proposed interventions are expected to:

- increase the participation of women across the research and innovation pipeline;
- strengthen retention and career progression opportunities for female researchers;
- improve gender balance in leadership and decision-making structures;
- enhance mentoring, networking, and professional development opportunities;
- foster a more inclusive, supportive, and equitable organisational culture;
- strengthen the integration of gender, inclusion, diversity, and techno-ethics dimensions into research and innovation activities;
- increase awareness and engagement across the FORTH-ICS community;
- establish sustainable governance, monitoring, and accountability mechanisms;
- support alignment with Horizon Europe Gender Equality Plan requirements, HRS4R principles, and European Research Area priorities.

The successful implementation of these interventions requires systematic monitoring, measurable indicators, clearly assigned responsibilities, and periodic evaluation. For this reason, the intervention framework is complemented by a comprehensive KPI and monitoring system designed to assess progress, identify areas requiring additional attention, and support evidence-based decision-making. The following section presents the proposed KPIs, indicators, governance mechanisms, and monitoring framework developed to support the implementation and long-term sustainability of the proposed roadmap.

6. KPIs, Indicators and Monitoring Framework

6.1 Introduction

The successful implementation of the proposed intervention framework requires a structured mechanism for monitoring progress, evaluating outcomes, and supporting evidence-based decision-making. While the baseline assessment presented in this deliverable provides an initial snapshot of gender representation,

participation, leadership, and organisational dynamics within FORTH-ICS, long-term institutional transformation can only be achieved through systematic monitoring and continuous evaluation.

To address this need, a comprehensive KPI and monitoring framework has been developed within the context of the MindGenderGapICT initiative. The framework is designed to support the collection, analysis, interpretation, and reporting of data related to gender equality, diversity, inclusion, career progression, leadership participation, organisational culture, and institutional development.

The framework moves beyond simple gender-disaggregated statistics and adopts a multidimensional approach aligned with Horizon Europe Gender Equality Plan requirements, European Research Area priorities, HRS4R principles, and international good practices identified through the benchmarking exercise. By establishing measurable indicators, defined responsibilities, reporting mechanisms, and review procedures, the framework provides FORTH-ICS with a practical tool for assessing progress, identifying emerging challenges, evaluating the effectiveness of interventions, and supporting continuous institutional improvement.

6.2 Objectives of the Monitoring Framework

The proposed monitoring framework has been designed to support both operational management and strategic decision-making. Its primary objectives are to:

- systematically assess progress towards gender equality and inclusion objectives;
- identify structural gaps, barriers, and emerging challenges;
- support evidence-based policy development and institutional planning;
- evaluate the effectiveness and impact of implemented interventions;
- strengthen transparency, accountability, and institutional learning;
- facilitate compliance with Horizon Europe Gender Equality Plan requirements and HRS4R principles;
- provide reliable data for internal reporting and external assessments;
- support long-term organisational development and institutional transformation.

Ultimately, the framework aims to create a sustainable mechanism through which FORTH-ICS can continuously monitor, evaluate, and improve its performance across multiple dimensions related to equality, diversity, inclusion, and organisational excellence.

6.3 Monitoring Dimensions

The proposed monitoring framework adopts a multidimensional approach to assessing gender equality, diversity, inclusion, and institutional development within FORTH-ICS. Drawing upon the baseline assessment, European policy frameworks, benchmarking activities, study visits, and international good practices, the framework extends beyond basic gender-disaggregated statistics and seeks to capture multiple aspects of institutional performance and organisational change.

To support systematic monitoring and evaluation, the framework is structured around eight interrelated dimensions that reflect both the priorities identified through the MindGenderGapICT initiative and the requirements of contemporary European research and innovation policies.

1. Representation and Participation

This dimension examines the overall participation of women and men across the Institute and its laboratories. It focuses on gender representation across personnel categories, research groups, employment types, and career stages, enabling the identification of disparities and trends over time.

2. Leadership and Decision-Making

This dimension evaluates the participation of women and men in governance structures, leadership positions, committees, advisory bodies, and decision-making processes. Particular attention is given to representation within the Scientific Council, laboratory leadership, evaluation committees, and institutional management structures.

3. Recruitment, Retention and Career Progression

This dimension assesses gender-related patterns in recruitment, promotions, career advancement, contract renewals, awards, scholarships, and retention. It aims to identify potential barriers affecting career development and progression throughout the research pipeline.

4. Workplace Culture, Inclusion and Wellbeing

This dimension focuses on organisational climate, inclusiveness, sense of belonging, work-life balance, employee wellbeing, perceptions of fairness, and experiences related to diversity and inclusion. It also encompasses awareness-raising activities, training programmes, and measures addressing discrimination and harassment.

5. Work-Life Balance and Family Support

This dimension monitors the availability and effectiveness of measures supporting the reconciliation of professional and personal responsibilities. It includes flexible working arrangements, parental support measures, childcare-related initiatives, and perceptions regarding work-life balance.

6. Gender, Inclusion, Diversity and Techno-Ethics in Research and Innovation

This dimension assesses the extent to which gender, inclusion, diversity, and techno-ethics considerations are integrated into research activities, project proposals, scientific outputs, innovation initiatives, and interdisciplinary collaborations. It also monitors activities related to the proposed Inclusion, Diversity, Equity and Techno-Ethics research strand.

7. Mentoring, Education and Capacity Building

This dimension evaluates participation in mentoring programmes, leadership-development activities, training initiatives, awareness-raising actions, outreach programmes, and educational activities targeting researchers, staff, students, and external stakeholders.

8. Governance, Monitoring and Accountability

This dimension assesses the effectiveness of institutional governance structures, reporting mechanisms, monitoring procedures, KPI implementation, and accountability systems supporting equality, diversity, and inclusion objectives. It includes the operation of the proposed Gender Equality Committee, reporting processes, annual reviews, and implementation of the institutional roadmap.

Together, these eight dimensions provide a comprehensive framework for monitoring institutional progress and evaluating the effectiveness of the interventions proposed in this deliverable. They form the

foundation upon which the KPI system, reporting mechanisms, and evaluation procedures presented in the following sections are built.

6.4 KPI Framework

The proposed Key Performance Indicator (KPI) framework has been developed as the central monitoring and evaluation mechanism supporting the implementation of the FORTH-ICS institutional transformation roadmap. The framework translates the strategic objectives and intervention areas identified through the baseline assessment into measurable indicators that can be systematically monitored over time.

The KPI framework serves multiple purposes. It provides an evidence-based mechanism for assessing progress towards gender equality and inclusion objectives, supports institutional accountability, facilitates data-driven decision-making, and enables the evaluation of implemented measures. Furthermore, it creates a common reference framework through which leadership, researchers, administrative staff, and governance bodies can monitor institutional performance and identify areas requiring corrective action or additional support.

The proposed indicators have been selected based on four principal criteria:

- **Relevance**, ensuring that each indicator addresses a specific institutional objective or challenge identified through the baseline assessment;
- **Measurability**, ensuring that reliable data can be collected and monitored over time;
- **Comparability**, allowing trends to be assessed longitudinally and, where appropriate, benchmarked against external references;
- **Actionability**, ensuring that indicator outcomes can inform institutional decision-making and policy development.

The framework combines quantitative and qualitative indicators. Quantitative indicators focus on measurable outcomes such as representation rates, recruitment statistics, promotion patterns, leadership participation, training attendance, and participation in mentoring programmes. Qualitative indicators complement these measures by capturing perceptions of organisational culture, inclusiveness, workplace climate, career satisfaction, and the effectiveness of institutional support mechanisms.

To facilitate implementation and interpretation, the indicators are organised according to the eight monitoring dimensions presented in the previous section. For each dimension, a set of core indicators is proposed together with baseline values, monitoring frequency, responsible actors, and, where appropriate, medium- and long-term targets.

In addition to conventional gender-disaggregated indicators, the framework incorporates several innovative monitoring instruments developed within the context of MindGenderGapICT. These include the GBI, which provides a standardised measure of gender balance across personnel categories and laboratories, the adaptation of selected indicators from the European Commission's *She Figures* framework to the FORTH-ICS environment, and the development of a digital monitoring platform to support automated KPI calculation, visualisation, reporting, and longitudinal analysis.

Although the present framework focuses primarily on gender equality, it has been designed to progressively incorporate additional diversity dimensions, including nationality, age, career stage, and, where feasible and ethically appropriate, disability, in line with emerging European approaches to

intersectional equality and inclusion. The KPI framework is intended to be dynamic and scalable. As institutional priorities evolve and additional data become available, new indicators may be introduced, existing indicators refined, and targets adjusted to reflect changing organisational needs and strategic objectives. Consequently, the framework should be viewed not as a static reporting tool but as a continuous learning and improvement mechanism supporting long-term institutional development.

Table 4: Propose Monitoring KPI Framework

Monitoring Dimension	KPI	Baseline (2025)	Target (2028)	Monitoring Frequency	Responsible Actor
Representation & Participation	% Women Researchers	Current baseline	+20% increase	Annual	HR Office
	% Women Postdoctoral Researchers	Current baseline	+15% increase	Annual	HR Office
	% Women Scientific & Technical Staff	Current baseline	+15% increase	Annual	HR Office
	Gender Balance Index (GBI) per personnel category	Current baseline	Improvement in all categories	Annual	Gender Equality Committee
	Gender Balance Index (GBI) per laboratory	Current baseline	Improvement in all laboratories	Annual	Gender Equality Committee
Leadership & Decision-Making	% Women in Scientific Council	Current baseline	Minimum 30%	Annual	Institute Director
	% Women in Evaluation Committees	Current baseline	Minimum 40%	Annual	HR Office
	% Women in Laboratory Leadership Positions	Current baseline	Increase over baseline	Annual	Institute Director
	% Women in Middle-Management Roles	0 (new measure)	Minimum 30%	Annual	Institute Director
Recruitment, Retention & Career Progression	% Female Applicants for Research Positions	Current baseline	+20% increase	Annual	HR Office
	% Female Recruits	Current baseline	Increase over baseline	Annual	HR Office

	Retention Rate of Female Researchers	Current baseline	+10% increase	Annual	HR Office
	% Women Receiving Internal Awards	Current baseline	Gender-balanced distribution	Annual	Award Committees
	% Female Applicants for Stelios Orphanoudakis Award	Current baseline	+30% increase	Annual	Award Committee
Workplace Culture, Inclusion & Wellbeing	Inclusion Survey Score	To be established	+15% improvement	Biennial	Gender Equality Committee
	Employee Satisfaction Score	To be established	+15% improvement	Biennial	HR Office
	Participation in DEI Training Activities	0	>70% of personnel	Annual	Gender Equality Officer
	Number of DEI Awareness Activities	Current baseline	Minimum 4/year	Annual	Gender Equality Committee
Work-Life Balance & Family Support	Participation in Family Support Measures	Current baseline	Increase over baseline	Annual	HR Office
	Satisfaction with Work-Life Balance	To be established	+15% improvement	Biennial	HR Office
	Number of Childcare Support Initiatives Implemented	0	Minimum 1 initiative	Annual	Institute Leadership
Gender, Inclusion, Diversity & Techno-Ethics in Research & Innovation	Number of Projects Incorporating Gender/IDE Dimensions	Current baseline	+50% increase	Annual	Research Support Office
	Number of Publications Addressing IDE or Techno-Ethics Themes	Current baseline	Increase over baseline	Annual	Research Groups

	Establishment of IDE & Techno-Ethics Research Strand	No	Yes	One-off/Annual Review	Institute Leadership
Mentoring, Education & Capacity Building	Number of Active Mentor-Mentee Pairs	0	Minimum 20 pairs	Annual	Gender Equality Officer
	Number of Leadership Training Participants	0	Increase annually	Annual	HR Office
	Number of Outreach Activities Targeting Girls	Current baseline	Minimum 4/year	Annual	Laboratories
	Number of Female Participants in Outreach Activities	Current baseline	+30% increase	Annual	Laboratories
Governance, Monitoring & Accountability	Gender Equality Committee Established	No	Yes	Annual Review	Institute Director
	Annual Gender Equality Report Produced	No	Yes	Annual	Gender Equality Committee
	SHE Figures Indicators Adapted to FORTH-ICS	No	Yes	Annual Review	Gender Equality Committee
	Digital KPI Monitoring Platform Operational	No	Yes	Annual Review	IT Unit
	Percentage of KPIs Reported Annually	0%	100%	Annual	Gender Equality Committee
Visibility, Recognition & Community Engagement	Number of Newsletter Articles on IDE Topics	0	Minimum 6/year	Annual	Communication Office
	Number of IDE Coffee Hour Events	0	Minimum 10/year	Annual	Gender Equality Committee

	Number of Participants in IDE Events	Current baseline	Increase annually	Annual	Gender Equality Committee
	Equal Minds, Equal Code Award Established	No	Yes	Annual	Institute Leadership

Note: Baseline values should be populated using the results of the present baseline assessment. Where no historical data currently exist, the first year of implementation should be used to establish benchmark values against which future progress can be measured.

6.5 Governance, Data Collection and Reporting Mechanisms

The successful implementation of the proposed monitoring framework requires clearly defined governance structures, responsibilities, data collection procedures, and reporting mechanisms. Effective monitoring depends not only on the selection of appropriate indicators but also on the establishment of institutional processes that ensure the systematic collection, validation, analysis, and communication of data.

It is therefore proposed that the overall coordination of the monitoring framework be assigned to a dedicated Gender Equality Committee working in close collaboration with the Institute Director, the Scientific Council, Human Resources personnel, laboratory representatives, and relevant administrative units. The Committee would oversee the implementation of the KPI framework, coordinate data collection activities, review progress, and prepare periodic reports for institutional leadership.

Data collection should primarily rely on existing administrative records, human resources databases, project management systems, training records, and institutional reporting mechanisms. Where quantitative information is not available, complementary qualitative methods such as surveys, interviews, focus groups, and feedback exercises may be employed to assess organisational culture, inclusion, wellbeing, mentoring effectiveness, and staff perceptions.

To ensure consistency and comparability over time, KPI data should be collected according to a standardised annual reporting cycle. The proposed monitoring process consists of five main stages:

- **Data Collection** – Compilation of quantitative and qualitative information from institutional sources.
- **Data Validation** – Verification of completeness, accuracy, and consistency of reported data.
- **KPI Calculation and Analysis** – Calculation of indicators, Gender Balance Index (GBI) values, and other monitoring metrics.
- **Reporting and Review** – Preparation of annual monitoring reports and presentation of findings to leadership and relevant governance bodies.
- **Action Planning and Follow-Up** – Identification of areas requiring corrective actions, additional support measures, or policy adjustments.

To facilitate implementation and reduce administrative burden, it is recommended that FORTH-ICS progressively develop a digital monitoring platform capable of automating KPI calculations, generating dashboards, visualising trends, and supporting evidence-based decision-making. Such a platform would also facilitate the adaptation of selected indicators from the European Commission's She Figures framework and allow longitudinal tracking of institutional progress.

The monitoring framework should be reviewed periodically to ensure that indicators remain relevant, measurable, and aligned with institutional priorities, European policy developments, and evolving organisational needs. In this way, monitoring becomes not only a reporting exercise but also a strategic management tool supporting continuous learning, accountability, and institutional improvement.

6.6 Implementation Roadmap

The proposed monitoring framework is intended to be implemented gradually through a phased approach that allows FORTH-ICS to establish the necessary governance structures, data collection mechanisms, monitoring procedures, and institutional practices while ensuring organisational acceptance and sustainability. A phased implementation strategy reduces administrative burden, facilitates stakeholder engagement, and allows the Institute to progressively refine indicators and reporting processes based on experience and emerging needs.

The roadmap is structured around three implementation phases covering a period of approximately three years. Each phase builds upon the previous one and contributes to the progressive institutionalisation of monitoring, accountability, and continuous improvement mechanisms.

Phase 1: Establishment and Baseline Consolidation (Year 1)

The first phase focuses on creating the foundations necessary for effective implementation. Priority actions include the establishment of governance structures, definition of responsibilities, validation of indicators, and consolidation of baseline data. During this phase, FORTH-ICS should establish the Gender Equality Committee, assign KPI ownership responsibilities, finalise data collection procedures, and initiate the development of the digital monitoring platform. Baseline values for all indicators should be validated and documented to enable future comparisons.

Phase 2: Full Monitoring and Institutional Integration (Year 2)

The second phase focuses on the operational implementation of the monitoring framework and the integration of KPIs into institutional management processes. During this stage, annual reporting mechanisms should become fully operational, KPI monitoring should be incorporated into governance and planning processes, and progress should be assessed against established targets. Particular emphasis should be placed on monitoring the effectiveness of the interventions proposed in Section 5 and identifying areas requiring additional support or corrective actions.

Phase 3: Evaluation, Optimisation and Sustainability (Year 3)

The third phase focuses on evaluating the effectiveness of the monitoring framework and ensuring its long-term sustainability. KPI trends should be analysed, progress towards targets assessed, and lessons learned documented. The framework should be reviewed and updated where necessary to reflect evolving institutional priorities, European policy developments, and emerging organisational needs. Particular attention should be given to embedding monitoring and reporting mechanisms into routine

institutional processes, ensuring that equality, diversity, and inclusion considerations remain integral components of strategic planning and decision-making.

The successful implementation of this roadmap will enable FORTH-ICS to move from a one-time baseline assessment towards a sustainable evidence-based monitoring system capable of supporting institutional transformation, organisational learning, accountability, and continuous improvement.

6.7 Institutional Transformation Roadmap

The baseline assessment, benchmarking exercise, policy review, stakeholder consultations, and monitoring framework developed within the MindGenderGapICT initiative collectively provide a strong evidence base for institutional transformation within FORTH-ICS. The proposed roadmap is designed to support a gradual and sustainable process of change aimed at strengthening gender equality, diversity, inclusion, organisational excellence, and research competitiveness.

The roadmap adopts a long-term institutional perspective and recognises that meaningful change requires coordinated action across multiple dimensions, including governance, recruitment, career development, leadership, organisational culture, research and innovation practices, and monitoring mechanisms. Rather than treating gender equality as a stand-alone activity, the roadmap seeks to embed equality, diversity, and inclusion principles within the Institute's strategic planning, decision-making processes, human resources practices, and everyday organisational culture.

The proposed transformation process is structured around five strategic priorities:

1. **Strengthening Representation and Participation** by increasing the participation of women across all career stages and reducing gender imbalances within research and technical positions.
2. **Enhancing Career Progression and Leadership Opportunities** through mentoring programmes, leadership-development initiatives, transparent promotion procedures, and increased female participation in governance and decision-making structures.
3. **Fostering an Inclusive and Supportive Organisational Culture** through awareness-raising activities, diversity and inclusion training, work-life balance measures, community engagement initiatives, and mechanisms promoting wellbeing, belonging, and equal opportunities.
4. **Integrating Gender, Inclusion, Diversity and Techno-Ethics into Research and Innovation** by encouraging the incorporation of these dimensions into research projects, scientific outputs, innovation activities, and interdisciplinary collaborations.
5. **Establishing Sustainable Governance and Monitoring Mechanisms** through the implementation of the proposed KPI framework, annual reporting procedures, accountability structures, and evidence-based decision-making processes.

Implementation of the roadmap is envisaged through a phased approach over a three-year period. During the first phase, priority should be given to establishing governance structures, validating baseline data, launching mentoring and awareness activities, and initiating KPI monitoring procedures. The second phase should focus on the full implementation of interventions, integration of monitoring mechanisms into institutional processes, and assessment of progress against established targets. The final phase should concentrate on evaluating outcomes, refining measures where necessary, and embedding successful practices into the long-term operation of the Institute.

Ultimately, the proposed roadmap provides FORTH-ICS with a practical framework for moving from assessment to action, supporting continuous institutional improvement and contributing to the development of a more inclusive, resilient, innovative, and competitive research environment.

7. Stakeholder Engagement

The successful implementation of the proposed institutional transformation roadmap will depend not only on the quality of the proposed interventions and monitoring framework but also on sustained stakeholder engagement and strong institutional commitment. Gender equality, diversity, and inclusion should be regarded as shared institutional responsibilities requiring coordinated action across all levels of FORTH-ICS rather than as isolated initiatives implemented by individual researchers or administrative units.

A critical success factor will be the active commitment of the FORTH-ICS leadership, including the Institute Director, the Scientific Council, laboratory directors, and research group leaders. Their continued support will be essential for embedding gender equality objectives within institutional strategy, allocating the necessary resources, promoting organisational change, and ensuring that the proposed measures become an integral part of the Institute's long-term development.

Equally important is the close collaboration with the Human Resources services, which will play a central role in implementing many of the proposed actions related to recruitment, career progression, leadership development, training, mentoring, work-life balance, and the systematic collection and analysis of workforce data. Integrating the proposed KPI framework into existing HR processes will be fundamental to establishing a sustainable monitoring system and supporting evidence-based decision-making.

The active participation of the wider FORTH-ICS community—including researchers, technical staff, administrative personnel, postdoctoral researchers, doctoral candidates, students, and laboratory representatives—will also be essential. Continuous dialogue, regular consultation, and structured feedback mechanisms should accompany the implementation of the roadmap to ensure that the proposed measures remain relevant, practical, and responsive to the evolving needs of the Institute.

Implementation should also be closely coordinated with the FORTH Committee for Gender Equality and the Prevention of Discrimination (GEPD), which has been established to promote equality, prevent discrimination, and support the implementation of FORTH's institutional Gender Equality Plan. Collaboration with the Committee will ensure that the actions proposed for FORTH-ICS are fully aligned with FORTH's broader equality strategy, institutional policies, and governance structures, while benefiting from existing expertise, resources, and established procedures.

Finally, stakeholder engagement should not be viewed as a one-off consultation exercise but as a continuous process supporting institutional learning and continuous improvement. Regular communication of progress, transparent reporting of monitoring results, periodic review of the proposed interventions, and active participation of stakeholders in evaluating outcomes will facilitate organisational ownership and increase the likelihood that the proposed reforms become fully embedded within the everyday operation of FORTH-ICS.

Through sustained leadership commitment, effective collaboration across institutional structures, and continuous engagement of the FORTH-ICS community, the proposed intervention framework and monitoring system can be successfully adapted to the Institute's organisational realities, ensuring that gender equality, diversity, and inclusion become integral components of FORTH-ICS's governance, research culture, and long-term strategic development.

8. Conclusions and Recommendations

The baseline assessment and reform planning process conducted within the framework of MindGenGapICT has provided a comprehensive evidence base for understanding gender representation, participation, career progression, leadership involvement, and organisational dynamics within FORTH-ICS. The analysis confirmed that gender imbalances remain evident across several scientific, technical, and leadership-related categories, while women are more strongly represented in administrative and support roles. The findings also highlighted important disparities across laboratories, early-stage pipeline imbalances, and the absence of women from several senior leadership and decision-making positions.

Building on these findings, the deliverable developed a structured institutional roadmap combining baseline analysis, European policy alignment, benchmarking with leading research organisations and universities, proposed interventions, and a comprehensive KPI and monitoring framework. This integrated approach supports the transition from diagnosis to action and provides FORTH-ICS with a practical basis for long-term institutional transformation.

A key recommendation is the full institutionalisation of the KPI and monitoring framework developed under MindGenGapICT. Embedding the monitoring system into regular institutional processes, including human resources, project management, reporting, and leadership decision-making, will enable FORTH-ICS to move from project-based assessment to a permanent, data-driven governance model. The proposed Gender Equality Dashboard, Gender Balance Index, and adapted indicators inspired by She Figures can support systematic monitoring, accountability, and continuous improvement.

Future efforts should also progressively expand towards a more intersectional approach to equality and inclusion. While the present framework focuses primarily on gender, additional dimensions such as nationality, age, career stage, and, where feasible and ethically appropriate, disability should gradually be incorporated. This will allow FORTH-ICS to better understand complex patterns of inequality and design more targeted and inclusive policies in line with evolving European Research Area priorities.

Strengthening the talent pipeline remains a critical priority. Given the evidence of early-stage imbalances and the “leaky pipeline” phenomenon, FORTH-ICS should invest in outreach activities, engagement with female students at pre-university and undergraduate levels, targeted scholarships and incentives, mentoring schemes, and role-model initiatives. These actions are essential for increasing the long-term participation of women in ICT research and leadership roles.

Career development and leadership pathways should also be strengthened through structured mentoring, sponsorship, leadership training, transparent and gender-sensitive promotion criteria, and support for women’s progression from post-doctoral to senior research roles. Particular attention should be given to transition points where female participation decreases, as these stages are critical for improving retention and future leadership representation.

The integration of gender, inclusion, diversity, and techno-ethics dimensions into research and innovation should become an important component of FORTH-ICS's institutional strategy. Training and guidance on gender-sensitive research design, encouragement of gender analysis in project proposals, and support for interdisciplinary approaches can enhance both the scientific quality and societal relevance of research outputs.

Sustained progress will also require stronger governance and accountability mechanisms. Gender equality should be formally embedded within institutional leadership, strategic planning, reporting processes, and evaluation structures. Regular reporting to governance bodies, clearly assigned responsibilities, and links between progress and institutional performance will be essential for ensuring continuity and long-term commitment.

Finally, FORTH-ICS should continue benchmarking its progress against European policy developments, Horizon Europe requirements, ERA priorities, HRS4R principles, and peer institutions. The framework and lessons developed through MindGenGapICT may also be scaled across other FORTH institutes, shared as a national or European good-practice model, and used to support future proposals, collaborations, and institutional initiatives.