

WOMEN ENTREPRENEURS IN STEM

VET Business Partnership ACTION PLAN Summary

PREFACE

This publication has been produced under the Erasmus+ Women Entrepreneurs in STEM (WISE) project 2017 - 2019. It is led by Omagh Enterprise Company with support from Canice Consulting. WISE strives to a clear aim: increase the number of female entrepreneurs working in science, technology, engineering and maths (STEM) as a result of improved access to and quality of support from the entrepreneurship education ecosystem. It was developed in response to the 2015 paper 'Women Entrepreneurs, Women in Technology, Skills Needs and Balanced Regional Development which called for entrepreneurship training to be introduced in scientific and technical colleges, universities, research centres and academia. It also cited the need to improve women's self confidence in entrepreneurship by providing specific training in leadership, assertiveness and negotiation.

Snapshot of the benefits of WISE...

✓ For the Region:

- *Increased number of female entrepreneurs in STEM by transforming their access to and the quality of the training they receive from entrepreneurship VET institutions*
- *Economic growth and a win-win for businesses*

✓ VET Business Alliances

- *More effective career guidance and work placement*
- *Access to untapped talent and competence-skills workforce*

✓ For Female Entrepreneurs

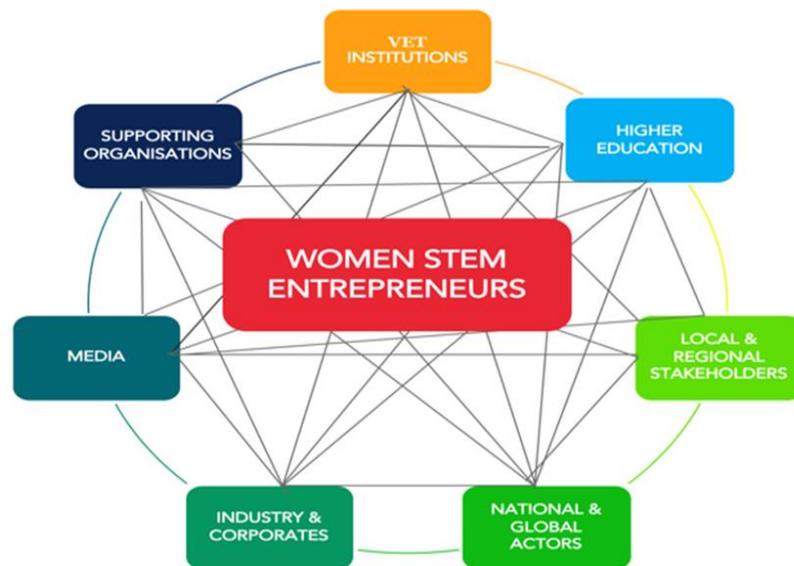
- *Experience work in a high growth STEM enterprise for a structured 4-week placement period.*
- *Access to a STEM support toolkit & Community*

Why a Regional Partnership Plan approach?

WISE places VET business partnerships at the heart of the project creating a conduit between actors in the STEM entrepreneurship development ecosystem in UK, Germany, Norway and Ireland. By creating a VET Regional Partnership Plan (O1) in each region, we respond to the need to develop more strategic and integrated use of open education resources in education and training systems. Our Regional Partnership approach seeks to provide an important platform to create and deepen ongoing relationships between diverse institutions working in vocational education and training in innovation and entrepreneurship. It nurtures a shared commitment to increase the number of female entrepreneurs in STEM by transforming their access to and the quality of the training they receive from entrepreneurship VET institutions. In particular Regional Partnerships have the capacity to support and disseminate the project's presence and reach within our region and fulfills the EU Commission thinking on regional partnership structures: -

“Any public intervention aiming to further develop a sector calls for cross-sectoral fertilisation. This requires the development and testing of better business support instruments and policies that aim to facilitate cross-sectoral linkages and spill-overs. It implies fostering change amongst the sectors themselves while adding new skills and competencies.” - EU Commission

This Regional Partnership Plan can be utilized by academic actors, higher education policy makers as well as by business actors, organizations and chambers. It facilitates the creation of the conditions and organizational connections that are essential for the processes promoting Women Entrepreneurs in STEM.



Additional useful materials will be also produced in the framework of the Erasmus+ Women Entrepreneurs in STEM programme. These will be available free of charge on the following address www.stementrepreneurs.eu. We recommend that those who are interested in this topic visit our website to access our resources.

OUR DEFINED REGION & STAKEHOLDERS

The WISE VET Regional Partnerships covers the geographic regions in N Ireland, Ireland, Germany a Norway. A detailed breakdown of each region and key stakeholders can be found in each partnership plan.

OBJECTIVES

The WISE VET Regional Partnerships set out to bring together the diverse actors in the entrepreneurship development to create this Action Plan that would yield a more inclusive and STEM -friendly VET sector and long-term support for female entrepreneurs in our region. Specifically, the Partnership sought to:

- help overcome information failures. Much of the STEM expertise and the knowledge of female entrepreneurship already exists in the hands of HEIs (public) and specialist training providers (private and non-profit). The Partnership will enable effective multi actor knowledge sharing and shorten the learning path.
- devise formative assessment of learning gaps, learning objectives and pedagogical recommendations for the Start up in STEM open education resources.
- build social capital. As well as the firm commitments in the form of Action Plans, the Partnership is an ongoing space for collaborative work, contributing significantly to the dissemination and sustainability aspects of the project.
- Identify which specific skills and competences could transform access to and the quality of the training for women entrepreneurs in STEM and
- How can these skills and competences be delivered in an inclusive and accessible way

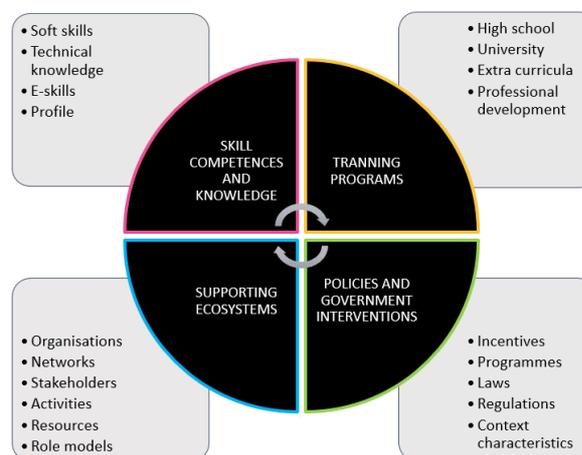
How this Action Plan evolved?

The principle feature of the Partnership building process was stakeholders' participation in plenary meetings, and in a series of follow up multilateral meetings. A more detailed schedule of activities and the support of the WISE partnership can be found in each regions partnership plan.

Scan Cards

As part of our overall Action Plan partners have developed 122 Best Practice Scan cards. The WISE scan cards aims to collect information that provides an overall view of the current state of a specific topic presented in the scope wheel. The process is simple:

1. Choose a topic from the Scope Wheel



2. Search for sources that contain facts and information about the topic (See sources below)
3. Summarise the information and identify the relevance for our project
4. Record the summarised information in form of a scan card

TOPIC FROM THE SCOPE WHEEL	
Name or brief description of the information found	
DESCRIPTION Describe the information found	RELEVANCE Describe how it affects our project
SOURCE <small>Include a source</small>	SCANNING TECHNIQUE <small>Secondary data</small>

Comprehensive research was undertaken by all partners, possible sources include Reports, Papers, Statistics, Internal reports and Information from other organisations. This leads to the development of on-line resource that looked in detail at the following

- Policies and Government Interventions
- Training Programme
- Skills Competences and Knowledge
- Supporting Ecosystems.

A detailed breakdown of 122 Best Practice Scan cards can be found on the WISE Website.

THE ACTION PLAN – Summary

In N Ireland, Ireland, Germany and Norway the vested stakeholders have agreed to implement the following actions:-

Action 1 – Inspiration

How can we inspire more women to become STEM entrepreneurs and to inspire other girls and women?

- Early and ongoing stimulus and encouragement for girls and women on an entrepreneurial STEM career
- Girls and women are constantly facing existing and new challenges on their career path in STEM. We need to inspire what it means to be a STEM entrepreneur.
- To inspire girls and women, a change in the way people think about women entrepreneurs and in STEM is needed. Stories about women entrepreneurs in STEM who are running companies and creating jobs deserve to be heard.
- Family members who work in science and business related fields serve as an important inspiration for young girls. They act as role models to whom girls and women can ask questions and relate to.

Participants	Description	Timeframe
<ul style="list-style-type: none"> • Business VET Partnerships 	All 60 participants in N Ireland, Ireland, Germany and Norway business VET Partnership pledge to support women in STEM	Immediate & Ongoing
<ul style="list-style-type: none"> • Schools • Colleges • Higher Education Institutions • Local enterprise agencies • Women in business networks • Local government and regional development authorities • Small Firms' representatives • Emerging and existing women entrepreneurs in STEM 	Reaching out to organisations and professional networks outside the listed regions to share ideas and approach inspiring women in a similar way	Immediate & Ongoing
<ul style="list-style-type: none"> • Schools • Colleges • Higher Education Institutions 	Will use the Start Up in STEM' Course with inspiration videos, case studies supported by modules.	Pilot test of Start up in STEM course will be complete by December 2018
<ul style="list-style-type: none"> • Emerging and existing women entrepreneurs in STEM 	Placements will help learners have different approaches to enterprise development to help with motivating young people.	Placements will take place in April – June 2019.

Action 2 Unconscious Thought Process

How can we support a more conscious re-thinking in society?

Gender distribution in entrepreneurial STEM careers is often due to unconscious stereotypes

- Most people still associate STEM with a masculine image, based on the stereotypes created early in childhood. They judge women to be less competent than men, unless they show proven success in what they are doing.
- Developed in early childhood, those stereotypes lead to fewer girls even considering a STEM career and questioning the abilities of those who consider a STEM career.
- Knowing about these unconscious stereotypes will help women to better manage them, and general society to and overcome social disapproval

Participants	Description	Timeframe
<ul style="list-style-type: none"> • Business VET Partnerships 	Business VET Partnerships will be the core of the project as they have the knowledge, tools & motivation to encourage successful women in each region.	Immediate & Ongoing
<ul style="list-style-type: none"> • Schools • Colleges • Higher Education Institutions 	It is important for young women to assess their STEM Entrepreneurial potential.	Implement in January 2019 onwards
<ul style="list-style-type: none"> • Schools • Colleges • Higher Education Institutions • Local enterprise agencies • Women in business networks • Local government and regional development authorities • Small Firms' representatives • Emerging and existing women entrepreneurs in STEM 	Showcase successful female STEM Entrepreneurs on WISE Open Online Collaborative Learning and Knowledge Exchange Platform. This will be widely available on the WISE project website which will be free to access and open to all and maintained for at least 3 years after project completion.	Implement in January 2019 onwards

Action 3 Confidence and Decision Making

How can we support a more conscious re-thinking in society?

Confidence, trust and self-perception play an important role in career decisions.

- Research has shown that girls have a lower self-confidence in science skills than boys. At an early stage, many girls are unsettled and do not trust themselves to perform well in STEM related subjects.
- Based on roles assigned by society, friends, family and colleagues, women tend to question their ability to perform well.

Participants	Description	Timeframe
<ul style="list-style-type: none"> • Schools • Colleges • Emerging and existing women entrepreneurs in STEM • Local government and regional development authorities 	Be inspired by Start Up in STEM case studies, inspirational role models and overcoming the fear factor. It is important to encourage gender specific training to be introduced to schools, colleges and enterprise agencies	Immediate & Ongoing
<ul style="list-style-type: none"> • Schools • Colleges • Higher Education Institutions 	Widely disseminate the project to highlight the support needed in schools for developing the confidence of females from an early age.	Immediate & Ongoing
<ul style="list-style-type: none"> • Schools • Colleges • Higher Education Institutions • Local enterprise agencies • Women in business networks • Local government and regional development authorities • Small Firms' representatives • Emerging and existing women entrepreneurs in STEM 	For WISE placements the learners will be Work Shadowing. This involves the learner closely observing someone in the workplace doing a particular role rather than taking on the working role itself. It offers the learner excellent insights into what a particular job involves and the skills required.	Placements will take place in April – June 2019.

Action 4 Attitude towards STEM abilities

How do we ensure that more girls and women enter STEM-related education and stay in STEM-related jobs?

- **Biological characteristics** do not seem to affect the levels of achievement and ability of an individual related to STEM (e.g. quantitative thinking, math and science). However, growing up, skill **differences** between men and women were observed.
- STEM-related jobs require often **ICT skills**. Women entering STEM majors tend to be well qualified but still many leave their majors. Also, women are under-represented in ICT.
- Not only the expansion of education in the desired field is important, but also other factors such as self-efficacy, support and inspiration for **better understanding the own skills** should be analysed.

Participants	Description	Timeframe
<ul style="list-style-type: none"> • Schools • Colleges • Local enterprise agencies • Local government and regional development authorities 	Need more encouragement and support for females through universities and colleges to enter and stay in the industry	Immediate & Ongoing
<ul style="list-style-type: none"> • Local Enterprise Agencies • Women in business networks • Emerging and existing women entrepreneurs in STEM 	Gender specific STEM forum development and the importance of networking. Special Interest Groups will be formed as part of WISE Open Online Collaborative Learning and Knowledge Exchange Platform	June 2018 onwards
<ul style="list-style-type: none"> • Local enterprise agencies • Local government and regional development authorities • Small Firms' representatives • Emerging and existing women entrepreneurs in STEM • VET bodies, incubators and business development agencies 	For the WISE placements the staff development opportunities: the process of planning, implementation, monitoring and evaluation of Learning Experience programmes gives scope for the host organiser to develop their management and coaching skills, and widen their experience and attitudes.	February 2019 onwards

Action 5 Entrepreneurship Traits

How do we support women in STEM with entrepreneurial skills and resources they will need for a successful career?

- Women seem to have a higher emotional intelligence, a success factor in entrepreneurship.
- Women need to prove to be successful in STEM-related areas, as people judge them to be less competent. Admitting **failure in STEM entrepreneurship is even less an option**.
- Additionally, government support is needed to provide female entrepreneurs with the **same resources** as their male colleagues, such as **access to financing**.

Participants	Description	Timeframe
<ul style="list-style-type: none"> • Colleges • Higher Education Institutions • Local government and regional development authorities 	More research needs to be done on the different traits and how to support women with training and resources to reduce the risk of start up failure	Immediate & Ongoing
<ul style="list-style-type: none"> • Local enterprise agencies 	More gender specific support through Enterprise Centres looking at the Start Up in STEM Course for women considering starting a business looking at the Myths and Realities of Business Planning	February 2019 onwards
<ul style="list-style-type: none"> • Schools • Colleges • Emerging and existing women entrepreneurs in STEM 	WISE Placements will help learners benefit from an acceleration of their entrepreneurial skills and mind-set.	February 2019 onwards

Action 6 Career Path

How do we achieve a more transparent and supportive career path for women in STEM to reduce the turnover rates?

Women encounter challenges on their career path and their work environment

- The career path starts at a very early stage by communicating the variety of **career opportunities** in STEM. Despite education in STEM is offered to both genders, many women do not know what opportunities a STEM career offers.
- Isolation, an unsupportive work environment, demanding work schedules and non-transparent rules about **career advancement**, many women leave their STEM career.
- Women's access to – often male dominated – **networks** is limited.
- The so called **family penalty** also plays a role: when both partners are working, the man's career is given priority considering family responsibilities.

Participants	Description	Timeframe
<ul style="list-style-type: none"> • Local enterprise agencies • Women in business networks • Local government and regional development authorities • Small Firms' representatives 	There is a need for more support within the workplace for females to advance their career. Looking at challenges such as validating the business and undertaking a proof of concept process	Immediate & Ongoing
<ul style="list-style-type: none"> • Local enterprise agencies • Women in business networks • Local government and regional development authorities • Small Firms' representatives • Emerging and existing women entrepreneurs in STEM 	Specific support forums and examples of successful case studies focusing on the WISE Open Online Collaborative Learning and Knowledge Exchange Platform	Immediate & Ongoing June 2018: WISE Open Online Collaborative Learning and Knowledge Exchange Platform will have Special Interest Groups
<ul style="list-style-type: none"> • Local government and regional development authorities 	Making it widely known the external support that is available and educating the educating women on the training and finances that are available in each region.	Immediate & Ongoing

How WISE has assisted with these Actions

- Development of VET Partnerships – bringing together all the necessary partners who have a role to play in encouraging female STEM entrepreneurs.
- Development of an On-line collaborative Learning and Knowledge Exchange platform has been keen in ensuring that all the above actions have been addressed.
- Development of a bespoke Educational Resource that can be accessed on-line will be implemented and used immediately by Enterprise Agencies in N Ireland, Ireland, Germany and Norway.
- Development of WISE Learning Placement – the practical exercise of placing female stem learners with STEM entrepreneurs addressed directly the actions identified.
- Raising awareness of the issue – the promotion of the project throughout the past 2 years cumulated with Regional and national Showcase Multiplier events has ensured that there is a recognition that this is areas that needs continued support.