Women in STEM Workforce Readiness ‘ Women in STEM’ Program

ILO DC/SYMBOL: RAS/17/04/JPN

Type of Evaluation: Project

Evaluation timing: Mid-term

Evaluation nature: Independent

Project countries: Thailand, the Philippines, and Indonesia

P&B Outcome(s): Outcome 1 and 4

SDG(s): 4.3, 4.4, 4.5, 4.7, 5.1, and 8.3

Date when the evaluation was completed by the evaluator: 08 August 2022

Date when evaluation was approved by EVAL: Click here to enter a date.

ILO Administrative Office: Decent Work Team (DWT) for Asia Pacific and Country Office (CO) for Bangkok

ILO Technical Office(s): DWT AP / CO Bangkok (Enterprise and Skills)

Joint evaluation agencies: NA

Project duration: December 2017 – October 2022

Donor and budget: J.P.Morgan Chase Foundation, USD 2,415,000

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Evaluation budget: USD 32,188

Key Words: Enterprises, Skill Development, TVET, In-business, Soft skills, Women, STEM, Workers, Employers

Acronyms and abbreviations

ACT/EMP	Employer's Bureau (ILO)
ACTRAV	Worker's Bureau (ILO)
APINDO	Indonesia Employers Association
APRINDO	Indonesia Retailers Association
ASEAN	Association of Southeast Asian Nations
BPM	Business Process Management
CO	Country Office
CTA	Chief Technical Advisor
DAC	Development Assistance Committee
DAV	Data Analytics and Visualization for Manufacturing
DSD	Department of Skills Development
DWT	Decent Work Technical Support Team
DWT-Bangkok	DWT for East and Southeast Asia and the Pacific
ECOP	Employers Confederation of the Philippines
ECOT	Employers Confederation of Thailand
GIZ	Gesellschaft für Internationale Zusammenarbeit
I-B	In Business
IBCWE	Indonesia Business Coalition for Women's Empowerment
ICT	Information and Communications Technology
ILO	International Labour Organisation
IT	Information Technology
M&E	Monitoring and Evaluation
MoM	Ministry of Manpower
MoU	Memorandum of Understanding
OECD	Organisation for Economic Cooperation and Development
PRODOC	Project Document
STEM	Science, technology, engineering and mathematics
TESDA	Technical Education and Skills' development Authority
TO	Technical Officer
ToR	Terms of Reference
ToT	Training of Trainers
TVET	Technical and Vocational Education and Training
TWG	Technical Working Group

UNDP	United Nations Development Program
WiS	Women in STEM Workforce Readiness Program

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1 Executive summary and Recommendations

Introduction

Over the next two decades, technological advances including automation and robotics, will significantly change jobs and enterprises in Indonesia, Thailand, and The Philippines. The ILO estimated that 56% of employment (over 60 million jobs) face a risk of automation in Indonesia. Female are employed predominantly in jobs requiring low STEM (Science, Technology, Engineering and Mathematics) skills, which are clearly at risk of automation. Women are 20% more likely than men to lose their job as a consequence of automation. Female employment in these sectors is currently very low and concentrated in low-skilled occupations. To address these issues, and considering the national economic and social development priorities, funded by the J.P Morgan Chase Foundation, the ILO Women in STEM Workforce Readiness Program (Women in STEM) commenced in December 2017, following its formal approval in September 2017. Geographically the program covered Indonesia, the Philippines and Thailand (ASEAN-3), and combined regional and country-level delivery components. The Program was initially intended for 15 months but received additional grant thus extending the Program period by a year till 30 November 2021. Further, the project was granted a non-cost extension till May and later till October 2022 to complete the activities impacted due to COVID-19. In Indonesia the project ended in May 2021.

The program encompassed the ILO's sustainable enterprises development and skills development agendas and objectives. As concerns the former, the program design responded to the ILO's Program and Budget (2020-2021) call to "support the role of the private sector as a principal source of economic growth and job creation."[1] Recognising that sustainable enterprises are generators of employment and promoters of innovation and decent work, the 2007 International Labour Conference further called for sustainable enterprises to innovate, "develop skills and human resources, and enhance productivity to remain competitive in national and international markets".[2]

The program also aligned with the ILO's Recommendation No.195 (2004), which provides policy guidelines on human resources development, education, training and lifelong learning.[3] In particular, the program supported the provision of equal opportunities for training among women and men. It also offered incentives for employers to take responsibility for human resource development through training provisioning. In addition, the program supported the G7's 2019 Social Tripartite Declaration that aims to reduce inequalities through promoting skills' development in the world of work, as well as closing the gender employment and participation gaps in high growth STEM sectors.[4]

Two major technical focus areas supported the sustainable enterprises development and skills' development components of the program. These were: (a) workforce readiness, including pre-employment skills assistance for women to facilitate the acquisition of demand-led STEM-related skills and with this improve their employability; and (b) workforce development, including skills upgrading - combining upskilling and reskilling initiatives - for women workers employed in entry level jobs in STEM sectors but with limited opportunities to advance in their careers. Within this context, the ILO's

[1] ILO Programme and budget for the biennium 2020–21. Available at https://www.ilo.org/gb/GBSessions/GB337/pfa/WCMS_719163/lang--en/index.htm

[2] International Labour Conference, 96th Session, 2007 – Report VI – The promotion of sustainable enterprises. Available at https://www.ilo.org/empent/areas/entrepreneurship-and-enterprise-development/lang--en/index.htm

[3] ILO. Human Resources Development Recommendation, 2004 (No. 195). Available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312533

[4] ILO. G7 2019 Social Tripartite Declaration. Available at https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/g7/2019/lang--en/index.htm

enterprise-based In Business (I-B) soft skills training model was central to the enterprise development component of the program. A broader skills' agenda that anchored these two technical areas was intended to make the skills and TVET system more inclusive and to respond to the needs of those who were under-served by the existing skills system. At the same time it aimed to respond to the needs of the labour market (especially in the context of Industry 4.0). Therefore, the program aimed to institutionalise the project's concepts (e.g. STEM skills training; women's readiness for STEM jobs) and pilot training programs as part of the existing TVET system.

The Program aimed originally at providing 1,760 women with technical STEM-related skills, employability and leadership training coupled with targeted mentorship to help women gain quality employment and advancement opportunities in STEM-related jobs in Indonesia, the Philippines and Thailand. This would be realised through a set of activities outlined in the Program Proposal.

An external independent final evaluation was conducted over the period April – May 2022. It used a quantitative/qualitative process, drawing on a desk review of available documentation and interviews with a group of selected stakeholders in each of the three focus countries, as well as ILO specialist, Country Office and program staff. The evaluation took into account the reorientation of program priorities and approach required by the COVID-19 pandemic, as well as adjustments which were deemed required as a result of the implementation experience.

The main purposes of the final evaluation were to fulfil the accountability to the donor and to the tripartite constituents, to serve internal organizational learning and for improvement of similar projects in the future. The evaluation assessed the extent to which the program had achieved its expected objectives as per the program logical framework, the effectiveness and efficiency of the implementation, and the sustainability of the program impact. The final evaluation identified major challenges faced and action taken to address them, lessons learnt and good practices for both accountability and learning. The evaluation assessed the alignment of program interventions with ILO strategic objectives and policy outcomes as well as with existing Decent Work Country Programmes (DWCPs), and other development frameworks. Lastly, the evaluation determined the coordination mechanisms with other ILO interventions. The evaluation covered the period of implementation of the Program from its start in December 2017 until the time of the final evaluation, covering key outputs and outcomes (including unexpected results). It involved discussions with ILO Program staff, national counterparts and development partners of the Program, the donor-JP Morgan Chase Foundation, and the ILO technical specialists based in Bangkok, Thailand.

The evaluation addressed ILO evaluation concerns, such as:

1. Relevance and strategic fit
2. Coherence
3. Effectiveness
4. Efficiency of resource use
5. Impact orientation and sustainability

Both qualitative and quantitative evaluation approaches were used for conducting the evaluation. The evaluation fieldwork was qualitative and participatory in nature, as far as the COVID-19 regime in place allowed. Qualitative information was obtained through one-on-one or group interviews (face-to-face, Skype, Teams, Zoom or telephonic) as appropriate. Opinions coming from stakeholders improved and clarified the quantitative data obtained from project documents. Quantitative data were drawn from project documents including the Development Cooperation Progress Reports, Mid-term Evaluation Report and the Monitoring and Evaluation Plan (MEP) and others. Data were disaggregated by sex where possible and appropriate.

The gender dimension was considered as a cross-cutting concern throughout the evaluation. As women participation in STEM was the main focus of the program special attention was paid to this aspect. The needs of other vulnerable groups were also taken into account when considering

initiatives towards an inclusive labour market. Social dialogue, international labour standards and a just environmental transition were likewise considered.

Key findings:

Relevance and strategic fit:

The Program identified high-growth sectors, automotive in Indonesia; Information and Communication Technology (ICT) and Business Process Management (IT-BPM) in Philippines; and electrical and electronics sectors in Thailand respectively for intervention. The selection of these sectors was based on evidence of significant skills gaps and opportunities for growth for women over the next decade. However, because of contextual and implementation challenges, the Program shifted its focus to the ICT in Indonesia and subsequently included the e-commerce sector as part of its pandemic response. Similarly, women in STEM-related work in the healthcare sector were further included in Thailand. The sectors identified for intervention are rapidly evolving and becoming more innovative, requiring a blend of critical soft and technical STEM-related skills. Consequently, low skilled jobs are declining and there is an evident shift from traditional blue-collar jobs to more skilled occupations. Therefore, the Women in STEM Program aimed to improve women acquisition and adoption of critical soft and technical STEM-related skills and, in this way, contribute to reduce the skills mismatches that affect workers' productivity and enterprises' competitiveness in this rapidly changing context. The program aimed to ensure sustainability through several elements of its strategy. It had a specific focus on institutional capacity and specific efforts were expected to ensure this translated into sustainability of the program's impacts. Explicit emphasis was placed on consolidating learning among direct beneficiaries of project activities, particularly through follow-up support and the facilitation of networks and knowledge-sharing platforms.

In order to embed learning at the institutional level, attention was given to supporting initiatives that would help direct beneficiaries to disseminate knowledge in their organizations and beyond. Proposed enhancements and expansion of approaches and tools for adoption were aligned with current demands and their mandates and effective sphere of influence to ensure that they could continue with the initiatives on their own. Concrete experiences and lessons learnt at the country level were documented and compiled to be presented and discussed at national and regional level forums, so as to promote good practices and trigger changes in other countries, localities and industries.

As concerns potential program risks, the PRODOC recognised that capacity gaps among TVET institutions and private companies would require analysis and targeted attention under the program. However, although the possibility of political tensions and natural disasters were recognised as risks in those countries concerned, no-one could have foreseen the impact of the COVID-19 pandemic. It struck at a crucial time in the program's implementation, just as the key training components were gaining traction and partnerships with public and private counterparts were being developed. The "Assumptions and Risks" listed in the PRODOC provided for mitigating actions, which could include changing the sector selection. It also allowed for an assessment of partner capacities and consolidating partnerships at an early stage of implementation, with adjustments to be made to program planning and approach accordingly.

Coherence:

The STEM program was planned to closely align with research findings on STEM-related employment for women across ASEAN, building on ILO's learnings from past program implementations showing that women are significantly under-represented in the sub-region's STEM workforce. The automotive, IT and business process outsourcing (IT-BPO) and electrical/electronics (E&E) sectors are identified as high- growth in Indonesia, the Philippines and Thailand, respectively, presenting significant projected skills gaps and opportunities for growth for women over the next decade. In this context, the program aimed to provide women with technical STEM-related skills, employability and leadership training

coupled with targeted mentorship to help women gain quality employment and advancement opportunities in STEM-related jobs in Indonesia, the Philippines and Thailand.

To address the challenges that may lead to job losses and increase inequalities due to automation, especially among low-skilled women workers, as well as lower competitiveness of enterprises, the Program actively collaborated with government and the private sector -including employers and business membership organizations in - Indonesia, the Philippines and Thailand. It intended to improve skills needs identification, strengthen TVET systems' capacity to design and deliver STEM-related training, and lastly support national skills development initiatives with the objective to fulfil the skills requirement of the industry 4.0.

Technical support for the design, development and implementation of the program was provided by the specialists in the DWT, through the role of the TO, rather than directly to the in-country program officers. This helped ensure coherence and to reinforce the oversight and coordination elements of the program's coordination role. Feedback from all levels indicated that this backstopping support was both responsive and effective. It also contributed to the key program design and planning decisions locally that were required as implementation progressed and as needs or issues became evident.

Effectiveness:

The program was effectively led and managed at the regional and national levels. The commitment, energy and innovative orientation of the program team was well-regarded by partners and was a key factor in the program's demonstrated ability to produce results, often in challenging and rapidly evolving circumstances. However, a lack of provisioning was made for a dedicated full-time national officer in Thailand, and this proved to be a constraint in terms of adequately and consistently resourcing national implementation.

One major external factor that influenced program planning and implementation was undoubtedly the impact of the COVID-19 pandemic, which caused lockdowns and restriction of movement in the three focus countries. A rapid adjustment of priorities and approaches was required across the whole WiS program, from March 2020 onwards, to respond to the changed circumstances. The evaluation finds that both Project Management, COs and the donor showed strong crisis management in mitigating the challenges to the program's implementation caused by the pandemic and they managed to minimize the negative impact on the program, while keeping partner priorities in sight. The shift in orientation had three main components. These were prioritisation of online training capacities, skills and design within TVET institutions (including the training of trainers, curriculum guidance and development, and the development of learning materials); a shift of focus from training/employment transition to the provision of job readiness training for TVET graduates; and piloting and moving company-based technical and In Business (I-B) soft skills training online.

The In Business (I-B) soft skills training became the flagship of the program not at least because of the high numbers it produced linked with the positive response from a number of employers and the EOs. It is documented that the training has a positive impact on productivity as well as quality of production (less failures). This is by informants seen as a result of the better communication skills and a more inclusive and open management culture at the production floor level. There is also a positive impact on absenteeism and staff turnover. An expected improvement in career promotion possibilities post training is very limited also the participants do not report any increase in salary. The evaluation finds that the issues of promotion and compensation should be considered in future interventions as workers would need to see some concrete results and improvements in their situation to keep their attention and active participation at the longer term. This would be strong evidence of sustainability of initiated training activities.

Interviews with selected public and private implementing partners indicated a strong commitment to the program at all levels, which were linked at the policy level to government and corporate gender equality and diversity commitments. This was developed and fostered through active interaction with the program team at TO and country level. The partners' technical expertise was joined with that of the ILO in training design and delivery (e.g., the DSD in Thailand developed the DAV program). Partners also supplemented program resources through the provisioning of scholarships (TESDA) and of covering company costs for STEM-related technical and soft skills training.

In the Philippines, the reinforcement of the political, technical, financial and administrative engagement of key agencies, provided an important basis for the sustainability of program activities. A longer-term test in this context will be the extent to which program initiatives are carried forward through national budget and corporate resourcing, without any requirement for external resourcing, apart from ongoing technical support where necessary. The program has laid the foundation for this to take form. For example, the Technical Education and Skills Development Agency (TESDA) issued Order no. 428 (series of 2021, dated 2 July 2021) for the creation of the Technical Working Group on STEM in TVET with the overall function of overseeing the development and implementation of the policy on STEM in TVET; developing the process and policy on STEM in TVET; and monitoring the implementation of the action plan on a quarterly basis.

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The WiS program's implementation coincided with the ILO's Future of Work dialogue at the country level in the three target countries and worked towards providing basis to the Centenary Declaration on the Future of Work at the International Labour Conference in June 2019. Good practices from the WiS program provided impetus for other programs to consider women in the STEM and digital skills. Some of the good work of the WiS program are sustained through other ILO regional and national initiatives, for example: work on integrating STEM skills in TVET curriculum and training including online TVET training initiatives are continued by the UK funded 'Skills for Prosperity for Southeast Asia Program', the Japan funded 'InSIGHT Phase 2' project, and the Japan funded 'Uniqlo' project; job preparation and readiness learning module picked up by the EU funded "Safe and Fair" program including the WOMENCANDOIT scholarship program; and the Data Analytics for Visualization training course by the "Young Futuremakers" project. The WiS program's model was referenced in a number of policy making workshops and publications based on the highly contemporary issue. In recognition of the work, the WiS Program was invited by the Asian Development Bank (ADB) to join the '2018 ADB Women in the Digital Economy Session' and '2019 ADB Digital Development Forum: Panel for Women and the Digital Economy Session'. In addition, UNESCO-UNEVOC recognized the project's work in Indonesia in pioneering online training development and delivery targeting public TVET instructors. On promoting job related skills in STEM for women, UNICEF recognized the Philippines' WOMENCANDOIT scholarship program and the capacity building in STEM on TVET systems. Moreover, the WiS Program engaged with relevant regional initiatives and leveraged synergies with multilateral and bilateral development partners with similar focus, and the realm can go beyond to incorporate other partners such as the World Bank, GIZ, Australian Government and others.

In Indonesia and the Philippines, the national WiS program components were well integrated into the ILO's wider skills-related programming. In Thailand, the program constituted the major focus of skills engagement. The resulting synergies and mutual reinforcement contributed to overall program efficiency, impact and sustainability, through helping to maximise the efficient application of resources, through expanding stakeholder outreach and by ensuring that the lessons-learned were more widely shared. In all countries, the program is found to have contributed to both the strengthening of existing partnerships and to the initiation of new ones (e.g., the Department of Information and Communication Technology and the Department of Education in the Philippines and private sector companies in each of the focus countries).

Efficiency of resource use:

Most of the program's outcomes/outputs applies across the three focus countries, with each country having a strategic sector focus. However, as result of a preference indicated by the donor, a higher proportion of the program budget was directed to program implementation in the Philippines. All funds were spent by the end of the program. The spending was in line with ILO regulations and procedures as well as donor requirements and agreed budgets. The evaluation finds the administrative support adequate. It was provided through dedicated full and part-time financial and administrative officers, funded by the program. The program staff was based within the respective ILO COs, enabling regular interaction with the Country Director and other staff. Technical resources and expertise were accessed from several sources. These included the specialist of the ILO DWT, training providers, the external consultants commissioned for delivery of particular program components and the existing technical expertise within partner agencies, organisations and companies. Available documentation and stakeholder feedback indicates that this was adequate to meeting the program's requirements. Where program indicators and targets were not met, the issue was not a lack of technical resources, but rather the impact of larger contextual and capacity factors. In general, constituents request technical support rather than money.

Given the ambition of the original program design, the available resources were relatively limited. USD 750,000 was provided to cover the first year of implementation, including analytical research and the establishment of partnerships, and a total of USD 2.4 million was made available across the focus countries for the overall program period. The payment of annual budget instalments was conditional on progress against KPIs. This affected the multi-year planning at a country level and conditioned the strategy the ILO developed to deliver outputs over the program's duration. Furthermore, it was reported to have affected staff turnover and led to the ILO issuing fixed-term contracts with a duration of often less than a year.

Thus, resource supplementation, through financial (e.g., scholarships) and in-kind contributions of partner agencies, was required to ensure that training activities could proceed at the agreed level. At the same time, it is apparent that the commitment of supplementary resources was an indication of the partners commitment to the program, thus constituting a potentially important factor in helping to ensure the sustainability of program's achievements. In the Philippines, the average cost per technical training, based on TESDA costings, was USD 600 per student. Thus, a total of USD 318,000 was required to fund the training of the 530 students targeted by the program. TESDA allocated initially 365 scholarship slots to be covered by its own resourcing, amounting to a contribution of USD 223,0000 for technical training alone. By 2021, scholarship slots reached 935, with over USD814,316 for technical training. The WiS program is recommending more shared funding structure between the government and ILO, as this would ensure buy-in and sustainability of project resources rather than over dependence on donor funding. This is a remarkably high governmental own contribution to an ILO project and indicates the relevance of the program.

In light of the extent of engagement with national EOs for the promotion and delivery of the I-B soft skills program, ACTEMP could have been more closely involved into all decision-making and advisory support at a regional level.

As concerns program governance, the PRODOC makes reference to the establishment of a regional Project Advisory Committee (PAC). This was envisaged as consisting of representatives of the relevant national ministries, sector business associations, the donor and the relevant ILO staff. However, the PAC was not established. The existence of such an oversight body, even if it met annually, could have helped to facilitate closer internal working relations between the concerned ILO regional units. More regular joint strategizing and planning at a regional ILO oversight level would have in turn enhanced the support given to the TO role. A PAC could likewise have contributed to creating stronger ownership of the overall program among constituents.

A specific Monitoring and Evaluation Plan was developed for the I-B soft skills component of the program. This revolved around the following key questions: Is the program helping women acquire and apply soft skills; is the program increasing women's employability; is the program helping women gain better quality employment; and does the program benefit the company/employer? The MEP includes a ToC (attached as Annex 4) The ToC describes well the logic of the soft skills intervention and its expected outcomes. It was however reported that the MEP was not used for guiding the program implementation. The evaluation finds that it would have strengthened the program implementation if the MEP firstly had covered all elements of the program and secondly if it had been used for keeping the strategic view of the program. Partly due to the many changes in the program and partly because of the strong focus on targets (numbers) the program implementation became activity based rather than outcome oriented.

The soft skills M&E approach used Qualtrics survey software which enables the efficient gathering and rapid presentation of sex-disaggregated, company and country specific data from participants' training feedback. As well as indicating immediate perceptions of individual benefits from the program, the feedback has proven useful for both ILO program team training design considerations and I-B promotional purposes. Qualtrics was also used for the DAV training in Thailand and In Business Training in the Philippines and it has the ability for follow up six- month feedback assessments.

Impact orientation and sustainability:
One key element of the program's sustainability strategy for its soft skills component is the taking on of responsibility, by national EOs, for the promotion and support of the delivery of the I-B program. Progress in this regard varies by focus country. The ECOP concluded an MOU with the ILO in 2019 to take on such a role in the Philippines; there was agreement in-principle to move in this direction by APINDO in Indonesia; and a MoU signed in March 2022 with ECOT in Thailand. The experience of ECOP illustrates the potential of I-B as both an important contributor to soft skills' development for women (and men) at a company level and as a promising element of membership services and expansion strategies. ECOP is still at the piloting stage of implementation. This will build on and incorporate ILO progress in engaging Philippines' companies in the I-B program. The ECOP has suggested a cooperation in the on-line training of facilitators for I-B soft skills training in Indonesia. ECOP likewise has introduced the I-B to their colleagues in the Pacific Island states.

In recognition of the growing demand across the business sector for enhanced soft skills for new and current employees, ECOP set targets for the engagement of members in I-B delivery and three sectors / business groups were prioritised for training of peer facilitators. These are the hospitality and ICT-BPM sectors via their respective EOs, and the Philippines Chamber of Commerce and Industry. MOUs were developed with each participating company and specified what support will be provided by ECOP.

The identification of companies that function as carriers of ideas was a key element in the roll-out approach. The aim was that these companies would be long-term champions and "demonstrators" of the program, as well as a source of good practice advice and support for others. ECOP institutionalised I-B into the curriculum of its EO Academy to reinforce its sustainability. Although the I-B approach was seen as being relevant for everyone, ECOP intended to keep the gender-quality focus through a requirement that at least 50 percent of participants are women. As well as promoting and supporting the delivery of I-B via member companies, ECOP was also looking at availability via mixed company training groups. ECOP staff described I-B as a "game-changer" for helping to institutionalise its own gender and diversity commitments. They observed that the program and its approach added momentum, energy and visibility to internal efforts.

The PRODOC states that the program "will not seek to create new institutions, but rather to strengthen existing services and capacity, while building linkage between government, schools and placement

offices and the private sector. As such the objective will be to have a highly sustainable impact, in that processes and service changes would continue." Overall, the orientation that was set out was aimed at setting a "mid- to long-term change in motion, through the creation of an institutional and workplace environment that supported women's career development and advancement in STEM-related jobs."

The program strategy had a clear underpinning impact and sustainability orientation. This orientation was evident in practice, as summarised below, although it had to be balanced alongside a pressing focus on meeting the targets agreed with the donor and managing the immediate impacts of COVID-19 in the last two years of the program.

Examples of program initiatives, partnerships and developments which held the promise of contributing to sustainability in key areas included the following:

- The establishment of the Philippines TWG to develop a multi-sectoral strategy for STEM workforce readiness and development. Although the active membership only consisted of relevant government entities, the intention was to develop it, step-by-step, into a tripartite platform to share approaches and plans; to propose actions for designing a STEM skills and employability action plan; to formulate a national strategy for the development of STEM skills for the current and future workforce; and to develop STEM policy recommendations for the relevant government committees, bodies or agencies. According to the PM, such a platform could play an important role in embedding the general STEM and specific Women in STEM agendas within the relevant national laws, policies, institutions, frameworks and processes. The evaluation notes that TESDA is already governed by a tripartite board.
- In the opinion of TESDA, the integration of STEM in TVET programs in the Philippines was strategic and key in that through the program, the sponsored activities lead to the development of the "Manual for the Development of Competency-based Curriculum" which was launched in June 2021. The manual is widely disseminated by training curriculum developers, especially in contextualizing STEM into the curriculum.
- The focus within the public TVET systems of Indonesia and the Philippines on mainstreaming STEM-related technical and soft skills within online and directly-delivered training curricula, capacities and systems. In the Philippines, in response to TESDA's need for the pilot implementation of the integration of STEM in TVET, the program in cooperation with the ILO-UK Skills for Prosperity Programme, developed an Updated Trainers Guide and Student Workbook which covers the following qualifications: Web Development, 3D Animation, Game Programming, Electrical Installation and Maintenance, Contact Center Services, Computer Systems Servicing, Aquaculture, Organic Agriculture Production, Cookery and Bread and Pastry . To complement this training, 251 trainers were trained for STEM in TVET training. An E-learning course was developed for TESDA trainers for Learner Centered STEM in TVET. This pilot implementation paved the way for the development of the TESDA Competency Based Curriculum for Area-Based Demand Approach, which provides a framework to integrate STEM skills into TVET programs.
- TESDA of the Philippines is finalizing its own STEM framework that will integrate STEM in all its processes such as: competency standards development, curriculum development, training, assessment tools development and the conduct of assessment and certification in partnership with the academes, industry sector and relevant government agencies. With this, the integration of STEM in TVET in the Philippines is intentional.
- To address job readiness needs during the pandemic, an E-learning course was developed with TESDA on Job Readiness for Women in STEM related occupations. Since its launch in 2021, it has received over 3000 students online, mostly women. The Job Readiness E-

learning course included a live training for the women beneficiaries of the program, a training of trainers for TVET trainers, and a self-paced training course which learners can complete when timely convenient for them.

- Formalised agreements with ECOP, ECOT and APINDO for their ongoing promotion, coordination and support for the ILO I-B soft skills program within their respective memberships.
- The adaption of technical and I-B soft skills training for online modalities in each of the three countries. This included the provisioning of technical and capacity development support within both the public/TVET and private company contexts, in areas such as online training design, development and delivery. Some issues were identified with the quality of the training; i.e. access to the necessary ICT infrastructure and the need to take into account some trainees' access to the necessary technology and a supportive learning environment. However, the overall public and private sector feedback indicated that e-learning is 'here to stay' and will be an important component of future-mixed training approaches.
- Efforts to facilitate links between relevant government entities, public TVETs and business in the three focus countries, which contributed to the design of training initiatives and strengthened the basis for increased business engagement in TVET design and delivery. Examples included the business sector input into the design of the DAV training program in Thailand and the TVET STEM-related technical training programs in the Philippines. Such linkages were reinforced in Indonesia by an MOU that was developed with the combined support of BBPLK-Bekasi (the country's preeminent national TVET institution) and the Ministry of Manpower. Although progress was relatively limited, both APINDO and ECOP highlighted this area as a priority for increased attention in light of private sector concerns about the inadequate skills levels of many public TVET graduates in a rapidly evolving job market. The business interlocutors interviewed by this evaluation also highlighted the need for a more rapid development of training curricula and approaches to reflect the rapidly evolving ICT industry. They saw increased business input into TVET design and delivery, along the lines of that being fostered by the program, as essential in this context. However, the ILO should advocate that this development is governed by a tri-partite approach.
- DAV became an integrated part of DSD's national skills training program and workers (male and female) could sign up and participate nationwide in Thailand. However, a need exists for a stronger involvement of provincial authorities to ensure that financing is allocated. A number of academic institutions will provide the training. It should be noted that DSD does not see the training as a key priority and funds have not been allocated or committed to it. Both business and end beneficiaries very much appreciate the skills obtained through the DAV training. Its sustainability will also depend on the availability of certified training instructors across the country.
- DAV, in Thailand, made steps towards influencing and extending national competency standards through the development and application of program level standards as well as engaging with national competency and standards officials in the Philippines, to look at the integration of STEM-related skills and requirements in TVET.
- Seagate Technology in Thailand has made steps to integrate the I-B soft skills program into their wider HR development framework, and are interested in doing the same within Teleperformance, a major company in the Philippines IT-BPM sector. In the latter case, the I-B vision-setting module was seen as a potentially stand alone module for all trainees, with a customised set of modules to follow, in line with employee roles and expectations within the company. Moving in this direction is seen as offering a greater possibility of an increased volume of training being delivered; as well as the likelihood that trainees can use company time (currently training is carried out in personal time in many companies).

It also offers links with existing company training to promote gender equality as well as pipelines for the promotion of women and the tracking of the career development of training participants. At the same time it was noted that offering the I-B program more broadly to women and men would help facilitate its integration into the company HR development framework.

While the implementation of the program did not see any immediate changes in national laws or policies, it helped the policymakers better understand the ways to promote STEM-related skills among women who would otherwise remain severely under-represented in this strategic growth sector for the Philippines (and Indonesia) as well as challenges they face in the fast-evolving platform economy. Due to the innovative nature of the project, many policymakers interested in addressing the Future of Work challenges got interested in WiS and liked discussing with the project manager and the ILO on the topics.
Many initiatives however were taken which at sight might lead to legislative and policy changes. Changes in national competency and/or qualification frameworks would constitute an important program contribution and were foreseen in the PRODOC and agreement with the donor. An example of the impact on the policymakers is the TESDA Order No. 428 issued on 2 July 2021 is on the "Creation of the Technical Working Group on STEM in TVET" is an initiative that supports the country's STEM framework that will integrate STEM in all its processes. From 2021, TESDA began the groundwork for integration of the STEM agenda across the agency to institutionalize the project in order to come up with a robust system in re-echoing this and roll out and deploy the manual on STEM. Another impact on the policy circle of the Philippines was the recent proposal of the alliance of WomenBix.PH-DTI-PCW to the ILO to conduct a policy study on decent work for women workers in the platform economy as a basis of the APEC-wide project intended to produce a code of ethics and a model contract for the women platform workers. It must be noted that the ICT sector of the Philippines used to be very difficult to discuss the topic several years ago when both ILO and DOLE approached them to address the issues. Apparently, thanks to the positive collaboration of the WiS program with the industry leaders backed by the strong research capacity of the ILO, this time around the issue was brought up to the ILO by the industries (e.g WomenBiz.PH) with government partners".

For Thailand, a rapid assessment on upskilling and reskilling needs for workers impacted by COVID-19 and IR 4.0 was commissioned in 2021. The findings and recommendations from this assessment is to make businesses and individuals whose future depends on skills development present, active and visible in policy formation; identify priority areas for actions or as policy-forming exercise in its own right; and to mobilize follow0up action through education and training institutions, public employment services and other institutions acting quickly within their own existing areas of competence, whether independently or in collaboration with industry.

Women in STEM Indonesia designed and pioneered the training on e-training development and delivery targeting BLKs/BBPLKs/BLKKs instructors, which received positive feedbacks from the Ministry of Manpower and the instructors. Learning from this experience, Ministry of Manpower is in the process of integrating the training into its e-platform for their future training modality. Ministry replicated and continued the training with the ILO INSIGHT-2 Project.

Although it is too early to identify the longer-term impact and sustainability of technical and soft skills training, initial anecdotal feedback from selected corporate partner training personnel indicates an attitudinal change among key HR staff around both the importance of increasing the number of women in STEM-related employment and the critical place and value of soft skills in the current rapidly evolving labour market in each of the focus countries.

In the meantime, evaluative feedback – gathered through a Qualtrics survey system of 17.000 technical and soft skills training participants, across some 30 companies, in the three countries – indicated that the I-B training modules were well-received, with high levels of satisfaction overall and positive learning outcomes indicated. Likewise, a high proportion of trainee supervisors reported behavioural changes as a result of training that was conducted.

The program approach and experience demonstrate the importance of investing in partnership development from the beginning as a key element of longer-term sustainability: A key longer-term indicator of sustainability in this context is the degree to which the women in STEM agenda is driven locally and financed through the national budget (including via ministries of education and labour) and corporate resources. Programme implementation demonstrated both of these factors beginning to emerge.

Looking ahead to the measures to ensure the sustainability of achievements of the WiS program, the ILO-UK "Skills for Prosperity Program" offers a framework within which women and STEM initiatives and perspectives can plausibly continue to be promoted and implemented. On the same note the ILO-UN Women Safe and Fair Programme will continue the scholarship program as part of the upskilling efforts for reintegration of returning women migrant workers. This is particularly the case in the Philippines, where there is an overlap in priority focus on the IT-BPM sector in 2021 alone, there were 900 women migrant workers who graduated from the scholarship programme in the National Capital Region and Cebu.

On the private sector side, the STEM Alliance Ph informed that the WiS program provided impetus to expand Unilab Foundation's Pinays Can STEM initiative primarily focused on girls in education also to include women in STEM jobs/careers. This contributed to the foundational work with the Philippine Commission for Women in advocating for STEM and supporting women in STEM jobs/careers.

Other partners that came in as well were the Embassy of the United States of the Philippines. The Embassy of the United States of the Philippines provided to TESDA its English for STEM courses to support its STEM in TVET agenda, and also supported the training of TESDA trainers nationwide on conducting massive open online courses (MOOCs) that can enable them to run trainings for huge numbers of learners for the completion of online courses. According to the US Embassy, the program helped introduce new U.S. Government-funded resources to TESDA and the American Corners to different ILO partners/stakeholders. They noted that even with a strong campaign to promote and encourage more women in STEM education and careers, there needs to be continuous engagement with different stakeholders like employers, businesses, education leaders, curriculum developers, and media. They shared that the activities conducted such as the series of 'Hidden Figures' film screenings connected to a range of audiences including women and girls in conflict-affected areas of Mindanao, and where gender equality is an issue. It helped bridge gaps in perspectives and helped open avenues to exchange ideas and opinions and open opportunities for women to voice out their concerns and challenges in entering into STEM education and careers. Other emerging partners was the Austrian Embassy that conducted a Women in STEAM science diplomacy workshop with the Women in STEM programme and the UP Center for Integrated STEM, in celebration of the UN International Day of Women and Girls in Science in 2022.

Conclusion:

The evaluation finds that while the programme design was found to be too ambitious in some key areas, it has enabled the development of a public and private partnerships and seen some significant developments with respect to STEM-related technical and soft-skills training provision as well as public TVET institutional strengthening as it was reported. The programme's reorientation in the COVID-19 context was well managed in close consultation with partners and donor. The pandemic forced the

project management to look for alternative solutions keeping focus on sustainable capacities, training content and systems for online learning in public and private sector settings. The evaluation is convinced that the on-line training will remain an important element of future training provision for the institutions and companies concerned especially seen in the light of fast-moving digitalisation of all economic sectors. This said almost all stakeholders emphasizes that on-line training cannot deliver quality training in all settings and on all subjects. Some informants find that a mix will prevail in the future. The positive and negative experiences harvested during the current program can be of great value for all involved when planning and designing future interventions as it has created an understanding of on-line trainings possibilities but also its limitations.

The program contributed well to meeting DWCP, country and global outcomes in the field of skills development and increased employability of women in STEM related industries. There is however still a lot of challenges ahead to achieving an inclusive labour market. The evaluation would like to highlight the inclusive approach taken by the project in reaching out to people living with hearing disabilities.

From an efficiency perspective, the program has leveraged and supplemented limited human and financial resources to good effect and has managed well to attract additional resources from both governmental and private sector, among others with the self-facilitated ILO I-B soft skills model demonstrating an ability to effectively engage large numbers of employees at a low cost, and the government counterpart in the training of women in STEM-related courses. It is too early to adequately assess longer term training and capacity developments impacts, a foundation for these has been created but to become sustainable and a real game changer further intervention beyond the lifetime of the program are needed.

The program has managed to engage the employers' organizations in the three target countries in scaling the I-B training modules. They are now offering the training as a service to their members and use I-B for membership drive. Several private companies are reporting that they plan to include some I-B modules in their regular HR development activities. There are indications that the I-B training trigger increased productivity and improved quality of production. These are great successes for the program, but the evaluation finds that for securing sustainability and continued employee engagement and enthusiasm the employees need to see some more concrete benefits for themselves through career advancement that includes promotions, more training opportunities and increased salary.

The program demonstrated strong flexibility also when it comes to addressing the challenges for technical (hard skills) training during the COVID-19 pandemic. A strong engagement with relevant governmental institutions created good, very much relevant, and timely initiatives especially in the ICT sectors.

The evaluation finds that many changes were made (mainly caused by the COVID-19 pandemic) in program outcomes, outputs and targets. These changes drove to a certain extent the program away from its original objectives and it became a more activity focused program, which within this framework reach remarkable good results even the original objectives were met to a lesser extent.

Lessons Learned and Emerging Good Practices:

Due to the COVID-19 pandemic all training activities were transferred to on-line training. A lesson learned from this is that even efforts were made to moderate the training materials to fit to the new training approach. The experience showed that for most training activities the physical face-to-face training is preferred. A relatively high level of drop-out especially from long-term trainings was

reported. It appears that also the subject of the training has an impact on the success rate as there are subjects with a more "natural" on-line link ex. training in e-commerce. Other subjects as interpersonal communication and teamwork will benefit from training with physical presence.

Disability considerations are clearly an important factor for attention from a rights and inclusion perspective in any ILO engagement. Each of the three focus countries has ratified the International Convention on the Rights of Persons with Disabilities. The evaluation finds it encouraging to note that in Indonesia, the provisioning of sign language was included in the e-commerce training in the retail sector (as part of the program's COVID-19 response) to enable participants with hearing disabilities to join the training. This kind of initiatives can help to open for a more inclusive labour market and especially people with hearing disabilities have good chances for entering the labour market as the digitalisation is progressing in all sectors of the economy. The evaluation see this as a positive emerging practice.

The evaluation finds it a good emerging practise that the In-Business soft skills M&E approach in this program used Qualtrics survey software which enables the efficient gathering and rapid presentation of sex-disaggregated, company and country specific data from participants' training feedback. As well as indicating immediate perceptions of individual benefits from the program, the feedback has proven useful for both ILO program team training design considerations and In-Business promotional purposes. Qualtrics was also for the hard-skills Data Analytics and Visualization for Manufacturing training in Thailand. The Qualtrics has the ability to be used for follow-up with six- month feedback assessments this allows for a good insight in training impact and sustainability assessment.

Recommendations

The evaluation has the following Recommendation for eventual future interventions in the field of women in STEM training and employment.

Recommendation 1

Addressed to	Priority	Time frame	Resources
ILO	High	Long-term	None

The ILO is recommended to secure a stronger evidence-based program design that builds on the collective knowledge and experience of the national constituents and national and international experts. This might avoid a situation, such as occurred in the WiS project, where constant changes (beyond those obliged by the COVID-19 regime) were needed.

Recommendation 2

Addressed to	Priority	Time frame	Resources
ILO	Medium	Long-term	Medium

The intent of the original objective remains valid as part of a holistic and comprehensive approach to promoting women in STEM and should be considered within the context of possible new and renewed regional and/or national skills' development, enterprise development and gender equality programs.

Recommendation 3:

Addressed to	Priority	Time frame	Resources
ILO	Medium	Long-term	Low

The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and/or apprenticeships, but this did not materialise in full. The ILO is

recommended to give priority to further development of its efforts for promoting mixed theoretical and practical training for VET/TVET students.

Recommendation 4:

Addressed to	Priority	Time frame	Resources
ILO	High	Long-term	Low

The ILO is recommended to give priority to trainees getting insight into their basic rights and relevant information on occupational health and safety – also for working from home (e.g., ergonomics) and partners should be encouraged to ensure that the offered jobs are decent jobs.

Recommendation 5:

Addressed to	Priority	Time frame	Resources
ILO/ACTRAV	High	Medium	Medium

The evaluation recommends that ACTRAV (together with other relevant departments) to look into the possibility of supporting trade unions in developing policies in the field of TVET and skills development. In a world of work, where technologies are changing quickly and Industry 4.0 is moving forward, it is highly important that the trade unions are able to provide quality and evidence-based input to the discussion based on adopted trade union policies. Many trade unions do not have such a clearly defined policy on skills' development.

Recommendation 6:

Addressed to	Priority	Time frame	Resources
Donor	High	Long-term	Low to none

The release of annual budget instalments was conditional on progress against KPIs. This affected the multi-year planning at a country level and conditioned the strategy the ILO developed to deliver outputs over the program's duration. Furthermore, it was reported to have affected staff turnover and led to the ILO issuing fixed-term contracts with a duration of often less than a year. It is recommended to commit funding for the full program period to accommodate for a strategic approach in program implementation. ILO is recommended to avoid short-term contracts as far as possible.

2 Context and program background

Technological advances – including digitalization, automation, robotics and artificial intelligence – are rapidly transforming jobs, and the skills workers need, across Southeast Asia and globally. The impact is being felt strongly in science, technology, engineering, and mathematics (STEM)-intensive sectors, where the majority of jobs require technical knowledge, and higher cognitive and communication skills. The consequence of this is a growing demand from employers for STEM competencies, including soft skills such as communication, collaboration, critical thinking and creativity.

Competencies can be defined as the combined knowledge, skills and attitude of an individual that enable successful performance.

STEM competencies are particularly complex and imply an integrated understanding of the concepts, laws, and principles of science, technology, engineering, and mathematics. They also comprise the understanding of the relevant processes of the aforementioned as well as technical skills for inquiry and innovation, and attitudes that enable an individual to address personal, community, industrial, and local/global economic needs. A STEM-competency perspective emphasises holistic STEM in terms of the integration of the above-outlined knowledge, skills, and attitudes. It suggests that an individual must be competent in STEM, in order to understand the scientific/mathematical concepts that support observations, and be able to argue, inquire, or innovate. Moreover, the interplay of knowledge and skills should be guided by scientific attitudes, such as objectivity and openness.[5]

Technological developments are increasingly putting millions of existing jobs at risk, across Southeast Asia, and an estimated 137 million employees will face job displacement within the next 20 years.[6] Despite the ever-increasing number of female STEM tertiary graduates in the region,[7] it is expected that women graduates will be more at risk of losing their jobs, because of technological change. In 2016, the ILO assessed the automation risk to occupations in Cambodia, Indonesia, the Philippines, Thailand, and Vietnam; countries that make up 80 percent of the total workforce in the 10 ASEAN member states. The study found that more than half of those employed in the assessed countries faced a high risk from automation. In the case of Indonesia, the most affected sector were the garment, textile and footwear sectors. In the Philippines, the BPM sector was the most affected. Forty-four percent of jobs in Thailand were at a high risk, particularly those within the automotive, electrical and electronics, garment, textile and footwear sectors.[8]

Ensuring that women and men in the workforce are equipped with STEM-related knowledge and skills, which are relevant to their rapidly-evolving workplaces, is a key element to ensuring that they can thrive in that environment and can access decent livelihoods. All the time while contributing to meeting the developmental needs of all aspects of the economy. Female representation is low in all levels of the STEM career pipeline across the region; from initial interest to education, training, prioritising employment and actual employment. Although women increasingly outnumber men in higher education enrolment, their engagement drops off when it comes to STEM-related disciplines.

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[5] Dr Sheryl Lyn Carreon Monterola. Report on Regional Experts Meeting on the Future of STEM Education and Training in TVETs in South-East Asia, Amari Watergate Hotel, Bangkok, 11- 12 December 2019.

[6] Investing in Women. Advancing women in STEM for the future of work. Available at https://investinginwomen.asia/posts/advancing-women-in-stem-for-the-future-of-work/

[7] For example, in Indonesia, women accounted for 37.5 percent of tertiary STEM graduates in 2017. In the Philippines, women accounted for 36.3 percent in 2017. In Thailand they accounted for 29.7 percent in 2015. *Source:* ILO Women in Business and Management. The business case for change: Country snapshots. Available at https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_702188.pdf

[8] Dr Sheryl Lyn Carreon Monterola. Report on Regional Experts Meeting on the Future of STEM Education and Training in TVETs in South-East Asia, Amari Watergate Hotel, Bangkok, 11- 12 December 2019.

Among the students surveyed by the ILO in 2016, who said they were majoring in STEM courses, only one in six were women.[9]

Women in STEM-related sectors across Southeast Asia are reported to face a variety of challenges that reduce entry, retention and advancement. These include systemic biases, stereotypes and beliefs rooted that are in discriminatory social norms that STEM-related industries has traditionally been employing predominantly men. Thus young women are discouraged from pursuing STEM-related education, training and careers.[10] Those who are trained, often face barriers to placement vis-a-vis their male counterparts. Furthermore, women employees in these industries are typically faced with challenges, both within the companies where they work and from societal expectations, which results in a higher tendency to drop out than it does in males. Finally, women often are overlooked for career advancement, at both the lower levels and in consideration for senior managerial roles.

Indonesia

Indonesia is the fourth most populous country in the world with a population of over 270 million. Its annual gross domestic output of USD 932 billion makes Indonesia the largest economy in Southeast Asia. The United Nations Development Program placed Indonesia in the 121st position – out of 189 countries – in its 2020 Gender Inequality Index and, over the past decade, the expansion of employment opportunities outpaced growth in the labour force. Consequently, the unemployment rate dropped to 5.3 percent in 2018, half of what it was in 2006. In 1998, more than 24 percent of the population lived in poverty, whereas the poverty rate had dropped to 9.8 percent by 2018. In addition there are now more skilled workers in the labour force, although a large number of them (41 percent) have either never attended school or have only completed primary school. Consequently, number of workers with appropriate qualifications entering the labour market has not kept pace with the growth of jobs requiring higher skills. This skills' mismatch is all the more worrying considering recent technological breakthroughs which may automate routine tasks.

Indonesia was once classified as an upper-middle income country, – in 2021 – the World Bank moved Indonesia back to the lower-middle income category, due to the impact of the COVID-19 pandemic.

The United Nations Development Program (UNDP) developed a Human Development Index (HDI), thirty years ago, as a measure of human progress in terms of personal freedoms (i.e. poverty, inequality and gender issues). In the UNDP's 2019 report, Indonesia's Human Development Index (HDI) was rated at 0.718, meaning the country ranked 107th out of the surveyed 189 countries. This put Indonesia in the high human development category. However, when the value for inequality (in the distribution of the HDI dimension indices) was discounted, the rating fell to 0.590, or roughly 17.8 percent.

One dimension of inequality is gender inequality. The 2020 Gender Inequality Index recorded that the labour force participation rate for women in Indonesia stood at 53.1 percent, whereas it was 81.9 percent for men. The 2020 Global Gender Gap Report recorded that only 46.8 percent of women in Indonesia, aged 25 or older, had completed a secondary education. This contributed to the existing gender pay gap. According to the 2020 National Labour Force Survey, women earn 23 percent less than men do, on average.

The National Long-term National Development Plan (RPJPN) 2020-2045 introduced a National Gender Mainstreaming Policy through Presidential Instruction No. 9/2000. This policy instructs gender mainstreaming in all sectors and positions the Ministry of Women Empowerment and Child Protection as the responsibility-holder for providing the technical leadership needed for gender mainstreaming.

[9] Investing in Women. Advancing women in STEM for the future of work. Available at https://investinginwomen.asia/posts/advancing-women-in-stem-for-the-future-of-work/
[10] Ibid

Indonesian Presidential Regulation No. 19/2020 – on the National Middle-term National Development Plan (RPJMN) 2020-2024 – contains four key directions to address and promote gender equality: (i) improving the quality of life and active participation of women and vulnerable groups in the development sector; (ii) increasing protection for women and vulnerable groups from various acts of violence, including trafficking in persons and child marriages, and various forms of discrimination; (iii) improving and strengthening the process of gender mainstreaming in various fields of development; (iv) increasing institutional capacity and institutionalising gender mainstreaming in various sectors at the national, provincial, district and village levels.

From the end of 2020 onwards, the Job Creation Law No. 11/2020 (known as the Omnibus Law) was enforced. The law aimed to ensure the legal effectiveness of foreign investment and to increase the ease of doing business in Indonesia. As concerns labour issues, the law relaxes labour rights' protection, as it – among others – legalises the flexibilization of the labour market, reduced severance payments, and adds authorised overtime hours/week.

However, there are concerns that the implementation of the Job Creation Law has also had negative impacts on Indonesian workers. This, combined with the long COVID-19 pandemic which began in March 2020, which has resulted in massive job losses and has increased the informalisation of work. Furthermore, it is troubling that women workers were among those who were the most affected.

Philippines

The Philippines is a democratic republic of 105 million people. It has 110 ethnolinguistic groups spread across an archipelago of seven thousand islands, divided into three main island groups.

Over the last decade, the country's gross domestic product (GDP) was one of the fastest growing in Asia. However, this growth has not led to the expected massive creation of decent work opportunities, sufficient for reducing poverty and inequality at a rapid pace. The Philippines' labour force continues to grow at a faster rate than the economy can create jobs and, in addition, the country faces the long-standing problems of unemployment, low labour productivity, labour underutilisation and other labour market inefficiencies. The profile of the employed is dominated by underemployed, low-wage workers in low skilled occupations and with limited opportunities to find quality employment.

Deemed a legacy country, the Philippines was assessed as an economy with a strong production base. However, in light of the 4th Industrial Revolution it faces risks, because of its weaker performance in the key areas that involve the drivers of production, namely: technology and innovation, human capital, global trade and investment, institutional framework, sustainable resources, and demand environment.[11] According to a report by the Philippine Institute for Development Studies (December 2021), roughly six out of ten Filipinos have jobs that mostly use general skills. This speaks to the quality of the created jobs in the economy as well as those that are likely to be created. The country faces a post-pandemic skills and employment gap that risks leaving 2.4 million skilled jobs vacant if no significant reforms are made in education and the training of workers.[12]

In the 2020 Global Gender Report of the World Economic Forum (WEF), the Philippines ranked 16th among the most gender-equal countries in the world. Although it had dropped from 8th place in 2018, it remains the only country from Asia in the top twenty list. A look into the Philippines Country Profile, in the same report, reveals some interesting gender disparities in the areas of education and skills. Men clearly outnumber women in the attainment of education and skills related to STEM-related fields; such as ICT, engineering, manufacturing and construction, agriculture, fisheries and veterinary. It is also interesting to note that more females are involved in education. Thus, encouraging more female students to enrol in STEM remains a major challenge. The Commission on Higher Education

[11] The Global Competitiveness Report 2018 during the World Economic Forum

[12] Business Inquirer, Julie Aurelio, December 13, 2020

(CHED) reported that in 2018–2019, only 38.5 percent of the total educational enrolment was in STEM-related courses. CHED also noted a decreasing number of STEM enrolments from women. For the academic year 2016-2017, CHED reported that women comprised only 43 percent of STEM enrolments, lower than previous years and mostly in non-engineering or non-IT fields such as biology and medical sciences.[13]

The Philippine Development Plan (2017-2022) recognises the important role of science, technology and innovation (STI) in promoting economic and social progress, and it intends to vigorously advance STI in order to increase the country's potential growth through innovation. Conversely however, a senior research fellow at the Philippine Institute for Development Studies (PIDS) emphasised that it is predicted that the Philippines will face an oversupply in information technology (IT) graduates in 2025, while still requiring more students to go into the STEM fields[14]. PIDS believes that the supply of IT-trained workers will probably exceed demand by 171,960 positions at the end of that period. Likewise, the undersupply of STEM-trained workers will become most apparent in the life sciences, physical sciences, mathematics and statistics and engineering by 2025. PIDS estimates that in 2025, the supply-demand gaps will be 13,964 workers in the life sciences, 569,903 in engineering, 9,689 in the physical sciences, and 13,285 in maths and statistics.

The Philippines needs more people working in STEM, to be able to keep pace with the rapid changes attributed to the 4th Industrial Revolution. With the future quickly becoming reality, a country with a young population should have an advantage, because it has more citizens studying and later working in those key fields. However, conflicting reports about the interest in STEM have raised concerns as to whether the Philippines can realise the full potential of its demographic sweet spot.

Thailand

The Kingdom of Thailand (or Thailand) is a parliamentary (bi-cameral) democracy with a constitutional monarchy. The 20th Constitution of the Kingdom of Thailand, B.E. 2560 (2017) – the supreme law of the state – establishes the foundations for the rule of law in Thailand, including the establishment of a national strategy for long term growth. Thailand's 20-year national strategy (known as Thailand 4.0) focuses on six key goals: security; competitiveness in new S Curve industries (food processing, automotive parts, energy, microelectronics, robotics, and light manufacturing); enhanced human capital and a skilled workforce for 21st century jobs; social cohesion and equity; eco-friendly development and growth and governance. The 13th National and Economic and Social Development Plan is now being finalised.

Thailand is one of the five ASEAN founding members. It is in the heart of the Southeast Asian region; surrounded on the East by Laos and Cambodia, on the North by Laos and Myanmar, on the West by Myanmar, and on the South by Malaysia. With a total area of around 513,120 square kilometres, spread across 77 provinces, the country ranks 51st among the world's largest countries.[15]

The overall population is 70.053 million (ranked 20th in the world population), which is a 0.40 percent increase from the previous year (304,175). Women constitute 51.34 percent of the 996 per 1000 females sex ratio in 2021.[16] There were 38.63 million people in the labour force and 46 percent of them were female workers.

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[13] Asia Pacific Economic Cooperation, STEM+ Update on Philippines, Conrado Rotor, Jr., Philippine Science High School website: pshs.edu.ph, #STEMpower Up Girls website: stempowerourgirls.ph
"Women in STEM: A Baseline Study" and https://investinginwomen.asia/knowledge/women-stem-baseline-study/

[14] The Manila News, Heart Castaneda, February 28, 2021

[15] https://data.un.org/en/iso/th.html and https://bit.ly/3KfvcFH, accessed on 25 April 2022

[16] https://bit.ly/3KfvcFH, accessed on 25 April 2022

Thailand has experienced a continuing drop in its fertility rate, of roughly 1.5 percent, similar to other more developed countries and the country is witnessing a very rapid demographic transition. Thailand is the country with highest share of older people in East Asia and the Pacific, as well as having the fastest declining working-age population.[17] Currently, around one in five persons is aged 60 years and older), making Thailand an aged society.[18]

Thailand has made significant progress in terms of human, social, and economic development and became an upper-income country in 2011.[19] The country achieved remarkable progress on poverty reduction, dropping from 65.2 percent in 1988 to 7.21 percent in 2015. Thailand also upholds the education-for-all principle, ensuring that all children in Thailand receive a free basic education for 15 years (from pre-primary schooling to secondary). As a result, schooling participation, particularly at the primary level, is practically universal.

Despite its advances, Thailand still faces structural hurdles in terms of education disparity. This involves inequitable access to higher education (secondary level and up) for disadvantaged groups as well as a poor educational quality that fails to equip its workforce with the skillsets required for the changing world of work, as it moves toward digitalization.

Thailand's economy is primarily reliant on the exports of goods and services, which account for 51.46 percent of its GDP (2020). Thailand's manufacturing and service sectors – which include tourism (pre-COVID-19), retail sales, and transportation – are key contributors to the country's economic growth. However, the COVID-19 pandemic has had a huge impact on Thailand's economy since 2021, with a sudden halt in tourism flows and a significant contraction in economic activity. Although the recovery has begun, GDP still fell by 6.2 percent in 2021, with a forecast GDP growth rate of 3.9 percent for 2022.

The COVID-19 pandemic added to longer-term socioeconomic and employment challenges, and potentially undid any recent gains. COVID-19's primary impact, during the crisis, was on the unemployment rate, at 2.25 percent. Many workers, particularly those in service/contact-intensive sectors, became highly vulnerable to job losses, reduced working hours, and wage inequality.[20] The crisis obviously intensified Thailand's reversal of poverty and inequality. A consequence of technology-related job transformation and digitalization is that vulnerable groups, such as low-skilled or low-wage workers, females, youth, and migrant workers, are at risk of job displacement and skills mismatches. When an aging population means skilled labour shortages and changes in consumption patterns, skills development, inclusive and alternative adult education and training programs become significant drivers for improving employability as well as career development and advancement.

Background of the Program

The JP Morgan Chase Foundation funded the development cooperation program, 'Women in STEM Workforce Readiness Program ' (WiS). Following its formal approval, in September 2017, the program commenced in December 2017, and was due to be completed in November 2021. The program was initially intended to run for 15 months but received additional grants, thus extending its lifetime for a year, until 30 November 2021. In addition, the program was granted a 'non-cost extension' – until

[17] Population Aging in Thailand – Business Opportunities in the Era of Population aging, ERIA Research Project Report 2021 https://www.eria.org/uploads/media/Research-Project-Report/2021-06/Vol-4_00-Business-Opportunities-in-the-Era-of-Population-Ageing.pdf, pp.1 -2

[18] https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/unpd_egm_20190 2_s3_vipanprachuabmoh.pdf

[19] World Bank. 2021. Thailand: Overview. accessed 25 April 2022. <https://bit.ly/3eWFHAd>

[20] ILO. Thailand Labor Market update – Concern Remains Over the Drawn Out Impact of COVID 19, https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/briefingnote/wcms_829228.pdf

May and later till October 2022 – to complete the activities that were impacted by COVID-19. The total program budget was USD2,415,000.

The program covered Indonesia, the Philippines and Thailand. It aimed to provide 1,760 women with technical STEM-related skills, employability and leadership training coupled with offering targeted mentorship to help women gain quality employment and advancement opportunities in STEM-related jobs. This was to be realised through a set of activities, outlined in the ILO/J.P. Morgan Chase Foundation program agreement. Activities in Indonesia came to an end in May 2021 as all planned activities were implemented and allocated funds spend.

The program identified high-growth sectors: automotive in Indonesia, Information and Communication Technology (ICT) and Business Process Management (IT-BPM) in the Philippines and the electrical and electronics sectors in Thailand, for intervention. The selection of these sectors was based on evidence of significant skill gaps and opportunities for growth for women over the next decade. However, because of contextual and implementation challenges, the program shifted its focus to ICT in Indonesia and, subsequently, included the e-commerce sector as part of its pandemic response (e-commerce increased its volume significantly during the pandemic lockdowns). Similarly, women in STEM-related roles within the healthcare sector were also included in Thailand, on the advice of the Employers Confederation of Thailand (ECOT). Based on demand to enhance soft skills of staff in the health care sector, and beyond just the health care sector and due to the low level of business activity, staff in both the healthcare and hospitality sectors were available for training.

The sectors that were identified for intervention are rapidly evolving and are becoming more innovative, which means they require a blend of critical soft and technical STEM-related skills. Consequently, lowly skilled jobs are declining and there is an obvious shift, away from traditional blue-collar jobs to more skilled occupations. Therefore, the WiS Program aimed to improve women's acquisition and adoption of these critical soft and technical STEM-related skills. The program hoped that this would contribute to reducing the skills mismatches that affect workers' productivity and enterprises' competitiveness, within this rapidly changing context. Productivity is a major contributor to economic growth.

Program strategy

The original program concept focused on the development of demand-led STEM and STEM related technical and soft skills among women in the selected sectors within the three target countries. This was done to support the workforce's development in order to contribute to increased enterprise productivity, to enhance employability and to transition from training to jobs and career advancement (while simultaneously contributing to increased company productivity and competitiveness).

The intention was to codify such efforts into TVET systems and practices as well as into industry tools, which would then be integrated into the human resource practices of those companies, committed to training, hiring, retaining and promoting women in STEM-related positions.

The Program focused on two major technical areas:

a) workforce readiness, including pre-employment skills' assistance for women, to facilitate the acquisition of demand-led STEM-related skills and thence to improve their employability;

b) workforce development, including skills upgrading – combining upskilling and reskilling initiatives – for women workers employed in entry level jobs in the STEM sectors, but with limited opportunities to advance their careers.

The expected outcomes originally included the:

- Development of sector-specific STEM skills and employability Action Plans for women in each of the three countries.

- Successful transition of underprivileged female vocational school graduates into STEM-related employment with sustainable career and livelihood prospects.
- Successful transition of women in low-skilled jobs to quality STEM-related employment with sustainable career and livelihood prospects.
- Development of country-specific tools to help industry express its skills needs for training and educational institutions, and to train, hire, retain and promote women in STEM jobs.

The following outcomes were added during the implementation of the program:

- TVET-level assistance for women participants, including training on issues related to recruitment and job placement.
- Enhancement of firm partners' support for the targeted recruitment of women, in particular, those participating in the STEM training program.
- Mobilise support for training institutions, sector employer associations and firm partners in each country, to provide institutional support for the program.
- Thought leadership and advancement of good practices.

The WiS program collaborated with both governments and the private sector (including employers and business organisations) in the three focus countries, to:

I. Improve the identification of STEM-related skills' needs
II. Strengthen the capacity of TVET systems to design and deliver STEM-related training
III. Support national skills' development strategies, plans and initiatives in response to the requirements of the 4th Industrial revolution (Industry 4.0)

The mutually reinforcing development of soft skills alongside STEM-related technical skills was an integral element of the program's concept and approach.

Synergies between STEM-related technical (hard skills) and soft skills training: The program aimed to demonstrate, in practice, that skills' development in these two areas was both integrally-linked and mutually reinforcing, with skills' development concerning communication, collaboration, critical thinking and creativity at the core of both. In this context, the soft skills dimension of the WiS program had the potential to be an important contributor to improving the employability and career prospects of women workers in STEM-related employment, potentially enhancing their possibilities of moving into leadership and management roles. The program already included training of a more technical nature, including elements of soft skills' development – for example the inclusion of public speaking skills in the second phase of training for TVET instructors, to help develop and present online learning in Indonesia.

The Program offered demand-led, technical STEM skills and employability and leadership training to women in selected sectors of the three focus countries, to support workforce development that would contribute to increased enterprise productivity, enhance employability, and aid the transition from training to jobs and career advancement. These efforts were codified into industry tools that were integrated into the human resource practices of firms that were committed to training, hiring, retaining, and promoting women in STEM-related positions.

Three broad support strategies underpinned the program's approach:

1) underprivileged female secondary or post-secondary TVET graduates transition to sustainable entry- level STEM positions with career prospects
2) under-employed women in STEM-related work upgrade their skills to progress to mid-level STEM employment positions

3) mid-level women working in STEM fields transition into leadership/managerial roles

Alignment

The WiS program was planned to align closely with research findings on STEM-related employment for women across ASEAN. It built on ILO's lesson-learned from past program implementations, which showed that women are significantly under-represented in the sub-region's STEM workforce. The automotive, IT and business process outsourcing (IT-BPO) and electrical/electronics (E&E) sectors were identified as high-growth sectors in Indonesia, the Philippines and Thailand, respectively. All had significant projected skills gaps and presented opportunities for growth for women over the next decade. In this context, the WiS program aimed to provide 1,760 women with technical, STEM-related skills, employability and leadership training coupled with targeted mentorship that would help women gain quality employment and advancement opportunities in STEM-related jobs in the three countries.

The program was designed to align with ILO Program and Budget Strategic Policy Outcome 1 (more and better jobs for inclusive growth and improved youth employment prospects) and Outcome 4 (promoting sustainable enterprises). Furthermore, it aligned with ILO Recommendation No.195 (2004) on human resources development, education, training and lifelong learning. At a more specific level, it was also planned to align with the following country level CPOs:

Indonesia:

IDN 126 - Increased capacity of the ILO constituents to strengthen policies and programs to ensure equal opportunities and treatment for men, women, persons with disabilities and other groups in vulnerable situations.

IDN129 - Improved policies and programs on entrepreneurship, business and cooperative development for job creating including financial inclusion (Indicator 4.2)

IDN131 - Workers' skills are upgraded through demand-based and competency-based training to better meet the labour market needs (Indicator 1.2)

Philippines:

PHL101 - Strengthened policies and programs for employment creation of young people, vulnerable and marginalised groups, through the implementation of decent work approaches for sustainable development and disaster resilience (Indicator 1.2)

PHL104 - Sustainable enterprise development policies and capacity building programs implemented to support green, productive and decent employment and income opportunities (Indicator 4.2)

Thailand:

THA228 - Skills' development (Indicator 1.2)

The program was foreseen to align with the prioritisation within the respective Decent Work Country programs (DWCPs) of (i) skills' development to meet Industry 4.0 needs, (ii) sustainable enterprise development, and (iii) gender equality as a cross-cutting policy driver (including specific STEM for women elements).

The program actively collaborated with government and the private sector – including employers and business organisations in the target countries – in order to address the challenges of automation and a lower competitiveness of enterprises and which might lead to job losses and increase inequalities, especially among low-skilled women workers. The program intended to improve skills-needs identification, strengthen TVET systems' capacity to design and deliver STEM-related training, and (lastly) to support national skills' development initiatives. with the objective of fulfilling the skills requirements of Industry 4.0.

The program aimed to align with SDG 4 (specifically targets 4.3, 4.4, 4.5, and 4.7), SDG 5 (specifically target 5.1), and SDG 8 (specifically target 8.3).

Further, it was aligned to specific outcomes in the Decent Work Country programs (DWCPs), specifically:

1. Indonesia. Outcome 2.1: Enhanced skills' development program and policy, and labour market governance for improved employability of youth.2
2. Philippines. Outcome 1.1: Men and women (especially the youth and other groups at risk of vulnerability or marginalisation) acquire appropriate competencies and have access to and engage in remunerative and productive work.3
3. Thailand. Outcome 1.1: Increased decent and productive employment as a result of effective demand-based and gender responsive employment services and improved and expanded promotion of technical/ vocational skills for with a particular focus on the employability of youth and older persons of all genders.

The Thailand DWCP (the first ever DWCP in Thailand) also had targets with a specific focus on women and STEM. This was Target 1.1.4 (f). At least one sector-specific demand-led and gender-responsive action plan developed, documented, and disseminated for STEM skills for sustainable development and employability for women.

The program was aligned with the national plans / strategies below:

- Indonesia: (i) The Law of the Republic of Indonesia (no. 17, 2007) on the long-term national development plan of 2005-2025, particularly Section iv.1.2., A. on Developing Quality Human Resources;4 (ii) 'Making Indonesia 4.0,' the country's national plan to meet the needs of Industry 4.0;5 and (iii) the Presidential Decree (2000) on Gender Mainstreaming in National Development.
- Philippines: (i) Philippine Development Plan 2017-2022, Chapter 10; Accelerate Human Capital Development;6 (ii) Industry 4.0 Roadmap;7, (iii) National Technical Education and Skills' development (NTESDP) of TESDA 2018-22 and (iv) the Republic Act 9710: Magna Carta of Women.
- Thailand: Socio - Economic Development Strategy, the Twenty - year National Strategic Framework (2017-2036) and the Twelfth National Economic and Social Development Plan (2017-2021); the Thailand 4.0 Development Plan Skill Development Promotion Act (2002);10 Thailand Gender Equality Act (2015).11

The project touched upon the following ILO cross cutting themes:

- Social dialogue and tripartism – was part and parcel of this program as this was the means for aligning skills' development with labour market needs.
- Gender mainstreaming – was planned to be an essential part of the project. Several means were deployed to ensure that the project benefited women as well as men, which was of crucial importance in the targeted countries where female labour market participation was among the lowest in the world.

Aim

The project aimed to ensure sustainability through several elements of its strategy. It had a specific focus on institutional capacity, and specific efforts were expected to ensure this was translated into sustainability of the project's impacts. Explicit emphasis was placed on consolidating learning among the direct beneficiaries of the program's activities, particularly through follow-up support and the facilitation of networks and knowledge-sharing platforms.

In order to embed learning at the institutional level, attention was given to supporting initiatives that would help the program's direct beneficiaries to disseminate knowledge in their workplace, organisations, institutions and beyond. The proposed enhancements and expansion of approaches and tools for adoption were aligned with current demands and their mandates and effective spheres of influence to ensure that the beneficiaries could continue with the initiatives on their own.

Implementing partners
The implementing partners comprised government entities and employers and workers' organisations in the respective target areas. Additionally, key partners should include public vocational training centres, youth, low-skilled men and women and under-represented groups.

Key partners: The program collaborated with:
(i) The relevant public bodies for skills development, including the Technical Education and Skills' development Authority (TESDA) in the Philippines, the Ministry of Manpower (MoM) in Indonesia and the Department of Skills' development (DSD) at the Ministry of Labour in Thailand.

(ii) The National and sectoral employers' organisations (EOs), to develop institutional capacities in order to provide soft skill training programs for workforce readiness and development.

(iii) Private sector companies in STEM-intensive sectors, for delivery of soft-skills training through the ILO In-Business (I-B) program to their employees, with a focus on low-skilled women within the workforce.

The program aimed to support implementing partners in the following key areas:
(i) industry engagement in skills-needs' identification as well as training design and delivery

(ii) development of mechanisms for public-private dialogue and collaboration in order to improve the school-to-work transition of TVET graduates

(iii) enhancement of the capacity of TVET instructors to mainstream higher-order thinking skills within public TVETs

(iv) development of industry-specific training tools for enterprises of all sizes, to upgrade the skills STEM-related and soft skills of their workforce, and through this approach respond to business and productivity needs

(v) promotion of public-private collaboration, to design and deliver enterprise-based training programs jointly with a particular focus on low-skilled women workers

(vi) awareness raising among young women of the career opportunities in STEM and improving enrolment rates of women in TVET in related areas.

Outputs of the program: In the ILO/J.P. Morgan Chase Foundation program agreement, the following points were listed as Expected Outcomes.
Development of sector-specific STEM skills and employability action plans for women in each of the three countries.
2.1 Successfully transition underprivileged female vocational school graduates into STEM-related employment with sustainable career and livelihood prospects.
2.2 Successfully transition women in low-skilled jobs to quality STEM-related employment with sustainable career and livelihood prospects.
2.3 Successfully transition mid-skilled women into STEM fields into leadership and management positions to ensure women not only enter, but also stay and are promoted in STEM fields. (*Later dropped from the results framework*)
2.4 Develop country-specific tools to help industry express its skills needs to training and educational institutions, and train, hire, retain and promote women in STEM jobs.

The following points were subsequently added to the above, in the 2020 results' framework:

3.1 TVET level assistance for women participants, including training conducted on issues related to recruitment and job placement.

3.2 Enhancement of firm partners' support for the targeted recruitment of women, in particular, those participating in the STEM training program .

4.1 Mobilise support of training institutions, sector employer associations and firm partners in each country, to provide institutional support to the program.

4.2 Carry out in-company training programs that lead to the career advancement of participants.

Program management

The program was managed on a day-to-day basis by a Technical Officer (TO) under the Enterprise Development and Skills Department, and with the general guidance of the DWT/CO Bangkok Director. The TO reported directly to the DWT-Bangkok Job Creation and Enterprise Development Specialist and Skills and Employability Specialists. At the country level, the program was managed and supported by two Program Officers (POs) and one full-time finance/administrative staff member in Indonesia; and one PO and a full-time finance/administrative staff member in the Philippines. The regional TO was also responsible for program implementation in Thailand and was supported by a part-time finance/administrative staff member. The national program officer and finance/administration staff members in Indonesia and the Philippines reported directly to the ILO Country Directors. In support of the project management (PM) it was planned to form a Project Advisory Committee (PAC) for managing the roll out strategy development and implementation, made up of representatives of national ministries responsible for skills development, sector associations representing the three sectors addressed and the donor, together with the DWT enterprise development and skills specialists. The PAC was not established.

3. Background and purpose of the Evaluation

Evaluation background

In accordance with ILO's Evaluation Policy and guidelines for results-based evaluation, any project with a total budget of over USD 1 million is required to undergo at least one independent evaluation; either midterm or at the end of the project; hence, this final evaluation. An internal mid-term evaluation (MTE) of the Program was conducted in October – November 2020 by an independent external evaluator. It was concluded that the project was highly relevant and – although it was facing delays and problems in its implementation – the project had the potential to be successfully implemented. The MTE produced four main recommendations. This final evaluation will examine the extent to which these were acted upon.

The ILO considers evaluation as an integral part of the implementation of technical cooperation activities. For the ILO, an evaluation is made for the purposes of accountability, learning, planning, and knowledge-building. This current evaluation was conducted within the context of the criteria and approaches for international development assistance, as established by the OECD/DAC Evaluation Quality Standard and under the UNEG Code of Conduct for Evaluation in the UN System.

This evaluation followed the ILO policy guidelines for results-based evaluation and the ILO EVAL Policy Guidelines Checklist 4 "Validating methodologies"; and Checklist 5 "Preparing the evaluation report".

For all practical purposes, the Terms of Reference (ToR) and ILO Evaluation policies and guidelines define the overall scope of this evaluation. All recommendations, emerging from the evaluation, are

strongly linked to the evaluation's findings and provide clear guidance to stakeholders on how they might address them.

This final evaluation was managed by an ILO Evaluation Manager. An ILO Regional Evaluation Officer provided oversight and quality assurance and the ILO Evaluation Office approved the final report. The evaluation applied a participatory and consultative process with all key stakeholders throughout the evaluation process. The evaluation also adhered to UN Evaluation Group (UNEG) Norms and Standards and ethical safeguard.

Purpose of the evaluation

The main purposes of this final evaluation are to fulfil accountability to the donor and to the tripartite constituents, to serve internal organisational learning and to improve similar projects in the future. The evaluation assesses the extent to which the project has achieved its expected objectives as per the project logical framework, the effectiveness and efficiency of the implementation, and the sustainability of the project impact.

The final evaluation also identifies any major challenges faced and action taken to address them, as well as lessons-learned and good practices for both accountability and learning.

The evaluation assesses the alignment of the project's interventions with ILO strategic objectives and policy outcomes as well as with existing Decent Work Country Programs (DWCPs), the United Nations Sustainable Development Cooperation Framework (UNSDCF) and other national development frameworks. In particular, the evaluation analyses the program's contribution to decent work. Lastly, the evaluation will determine the coordination mechanisms with other ILO interventions.

The final independent evaluation has the following specific objectives:

1. Assess the coherence, relevance, efficiency, and effectiveness of the program's interventions, while identifying the supporting factors and constraints that have led to them, including the strategies and implementation modalities chosen and partnership arrangements.
2. Assess the contributions and results of the interventions (both expected and unexpected; both positive and negative changes) and examine how and why the changes were caused by the intervention and measure the size of the effect caused by that intervention or tactic.
3. Assess the program's impact (including where the program's support was most/least effective and why), including the extent to which the partners capacity was strengthened and the benefits of the program's contribution to the Improvement of Women in STEM.
4. Assess the extent to which the recommendations of the MTE have been followed up/achieved.
5. Assess the program's contribution to COVID-19 immediate responses and recovery.
6. Assess the extent to which the program's outcomes will be sustainable.
7. Assess the extent to which the program promoted gender equality, disability inclusion and non-discrimination and was gender responsive.
8. Assess the extent to which the program's management and coordination mechanisms adequately addressed the needs and implementation challenges, and how effectively the program's management monitored the program's performance and results.

The evaluation's recommendations were developed, considering the above objectives.

Scope of the Evaluation

This evaluation covers the program's period of implementation – from its start in December 2017, until the time of the final evaluation, and covers the key outputs and outcomes (including unexpected

results). It involves discussions with ILO program staff, national counterparts and development partners of the Program, the donor-the JP Morgan Chase Foundation, and the ILO technical specialists based in Bangkok, Thailand.

The scope of work includes an assessment of the performance of the Program vis-à-vis:

1. Outputs and outcomes - against targets and indicators
2. Chosen strategies and implementation modalities
3. Partnership arrangements
4. Follow-up on any identified constraints/challenges and opportunities/recommendations
5. Use and management of the financial resources of the program
6. Internal and external factors that influenced the program's implementation
7. Management and coordination of the program, including staff management
8. The extent of tripartite partners' buy-in and participation in the program
9. Strategic fit of the initiative
10. Relevance of the initiative within national development priorities/frameworks
11. Synergies with other enterprise and skills' development programs

The scope of work also includes the formulation of recommendations for the design and implementation of similar future programs.

The evaluation covered implementation in Indonesia, the Philippines and Thailand as well as any eventual regional initiates under the project. The evaluation collected data and information from implementing partners and beneficiaries of the project, including the concerned UN agencies, constituents and relevant institutions.

The evaluation focuses not only on what was achieved in terms of results but also specially looks at how and why have were achieved (or not).

Based on the statistics of women workers, gender components were mainstreamed throughout the project; therefore, the evaluation integrated not only gender equality but also social inclusion and other non-discrimination issues throughout the process as well.

The evaluators reviewed data and information that were disaggregated by sex and assessed the relevance and effectiveness of gender-related strategies and outcomes to improve lives of women and men. An approach that included international labour standards, social dialogues and tripartism, fair transition on environment issues and value for money was integrated throughout the five evaluation criteria.

Clients of the evaluation

The primary clients of the evaluation are the JP Morgan Chase Foundation, as the donor of the initiative; the ILO offices in Manila, Jakarta, and Bangkok, including the Decent Work Technical Support Team; the ILO HQ Branches (SKILLS and ENTERPRISES), and the Program Team as the executing agents of the initiative.

Evaluation criteria

The evaluation addresses the following ILO evaluation concerns:

1. Relevance and strategic fit
2. Coherence

3. Effectiveness
4. Efficiency of resource use
5. Impact orientation and sustainability

The evaluation integrated gender equality and non-discrimination as cross-cutting concerns throughout the methodology, the deliverables, and the final evaluation report. These concerns were addressed in line with EVAL's Guidance Note n° 4. Similarly, EVAL's Guidance Note n° 7 was followed, as much as practically possible, to ensure stakeholder participation.

Gender concerns were based on the ILO Guidelines on Considering Gender in Monitoring and Evaluation of Programs (2013). The evaluation was conducted following UN evaluation standards and norms and the glossary of key terms in evaluation and results-based management, developed by the OECD's Development Assistance Committee (DAC). In line with the results-based approach applied by the ILO, the evaluation focused on identifying and analysing results through addressing key questions related to the evaluation concerns and the achievement of the outcomes/immediate objectives of the initiative using the logical framework indicators.

Key evaluation questions

Relevance and strategic fit

1) To what extent did the intervention's objective, design and approach respond to beneficiaries, national development plans, and partners/institutions/donor's needs, policies and priorities?
2) How well did the intervention meet the needs of the beneficiaries and how well was it adapted to their changing needs in the face of COVID-19?
3) How well did the intervention complement the ILO's strategic framework and other ILO programs in the region?
4) Was the modality used by the program sufficient and/or appropriate to achieving the objectives?

Coherence

5) Has the design and implementation adequately considered cross cutting issues like gender, disability inclusion, social dialogue, and relevant international labour standards?
6) To what extent did the STEM program support or challenge other interventions (both ILO and other relevant interventions in the countries) and vice versa?
    - Are there any opportunities or recommendations for improved leveraging or alignment to other relevant ILO or non-ILO initiatives?

Effectiveness

7) To what extent have the outputs and outcomes been achieved or are likely to be achieved, including any differential results across groups, and what internal and external factors may have influenced the ability of the ILO to meet these?
8) To what extent have the outputs produced and delivered yielded the desired outcomes, a s agreed with the donor, including policy and practice changes by private sector partners and constituents?
9) To what extent did the program management and coordination mechanisms adequately address the needs and implementation challenges, including those that were a result of COVID-19?

10) How effective were the chosen strategies and implementation modalities, in achieving the program's targets?
    - What are the good practices and lessons to be learned from the project approach and strategy?
    - What are the key lessons learned and recommendations for the design of possible next phase?
11) To what extent was the program management and implementation guided by tripartite dialogue and did it contribute to International Labour Standards (ILS) and gender equality, disability inclusion and non-discrimination?
12) To what extent have the recommendations of the MTE been followed up/achieved?

Efficiency of resource use

13) How efficiently were resources (staff, time, expertise, budget, etc.) allocated and used to provide the necessary support and to achieve the broader program objectives and results?
14) How effectively did the program management monitor the program's performance and results?
15) To what extent and how successfully did the program leverage resources and knowledge with other interventions and through partnerships?

Impact Orientation and Sustainability

16) To what extent did the program contribute towards improving the capacity of constituents and other local institutions, involved in skilling in STEM and placement services, to strengthen their focus on women, as a result of the program contribution?
17) To what extent were the constituents and local institutions successful in getting private sector support?
18) To what extent did the program strengthen an enabling environment (laws, policies, people's skills, attitudes, etc.) and women's access to STEM skills?
19) Are there any positive or negative, intended or unintended, reversible or irreversible higher-level effects?
20) What strategies did the program put in place to ensure continuation of the initiative, beyond its end?
    - What steps can be taken to enhance the sustainability of program's components and objectives?

Evaluation methodology

The evaluation team conducted a participatory, theory-based evaluation to answer the questions raised in the Terms of Reference. A theory-based evaluation implies that the evaluation team works with the ILO project team during the inception phase, to try to confirm the intervention's theory of change, as well as the implicit and explicit assumptions that influence the likelihood that the intervention achieved short-and longer-term outcomes, and to facilitate that key stakeholder used the knowledge and understanding they have gained.

Identified assumptions, e.g. about the relevance of data collected, stakeholders' data needs and how data informs policy and decision making, informed the data collection among the project's stakeholders.

A theory-based evaluation approach asks – and answers – question including, but not limited to:

- What changes, expected and unexpected, did the intervention contribute to, and how?
- To what extent was the identified change process a reflection of the original intervention logic/did change happen the way we thought?
- To what extent were assumptions viable?
- If (some) assumptions were not valid, what should have been changed for the intervention to achieve its desired outcomes and objectives and to contribute to stronger accountability and decent working conditions in the sectors targeted by the program (IT-BPM Philippines, ICT and e-commerce (Indonesia), electrical and electronics (Thailand))?

Comparing how change was envisaged in the planning stage with 'how change really took or takes place' will facilitate learning and contribute to valuable insights about possible adjustments of the program. At the same time, the approach is well-placed to answer questions (raised in the Terms of Reference) about the intervention's design, implementation, outcomes and long-term value.

Qualitative data collection

The evaluation conducted semi-structured interviews with the relevant stakeholders who were directly involved with the project as well as ILO specialists, to understand the strengths and limitations of the chosen approach and to explore how this setup might have influenced perceptions and attitudes about women in STEM in the labour market.

Quantitative and qualitative data were analysed to identify any pertinent results from each data set. These were then compared and triangulated to identify areas of convergence and possible contradiction, before conclusions were drawn.

Both qualitative and quantitative evaluation approaches were used during the evaluation. The evaluation fieldwork was qualitative and participatory in nature, as far as the COVID-19 regime in place allowed. Qualitative information was gathered through field visits, one-on-one interviews (face-to-face, Skype, Teams, Zoom or by telephone) and focus groups discussions (FGDs). Stakeholders' opinions improved and clarified the quantitative data obtained from the project documents. The participatory nature of the evaluation contributed to a sense of ownership among stakeholders. Quantitative data were drawn from the project documents, including the Development Cooperation Progress Reports, the Mid-term Evaluation Report and the Monitoring and Evaluation Plan (MEP). A combination of sound quantitative and qualitative research methods (e.g. interview and focused group discussions, with appropriate quantitative data analysis methods for each type of data collected) were developed for each evaluation question as deemed appropriate.

The gender dimension was considered a cross-cutting concern throughout the final report of the evaluation. In terms of this evaluation, this implies involving men and women in data collection and analyses. As women's participation in STEM was the main focus of the program, special attention was paid to this aspect. The needs of other vulnerable groups were also be taken into account when considering initiatives for an inclusive labour market. Social dialogue, international labour standards and a just environmental transition were also considered.

The evaluation included the opinions of workers, governments, social partners, and key stakeholders concerning their participation, throughout the project.

Open and transparent consultation underpinned this evaluation. The virtual consultations were made with the ILO, constituents and the relevant stakeholders, due to the COVID-19 pandemic and as per "Implications of COVID-19 on evaluations in the ILO: Practical tips on adapting to the situation".

The Evaluation team worked in close cooperation with the Evaluation Manager, project staff and ILO COs/DWT and ILO ROAP and HQ Specialists, to identify informants among the intervention's stakeholders, including government officials, trade union and employers' representatives and ILO

experts. Still in line with the proposed methodology, and in order to ensure that the evaluation contributed to a more in-depth understanding of the factors (in design and operations) that contributed to or impeded the achievement of results, the evaluation conducted:

- Interviews with 7 ILO RO staff/Specialists incl. ENTERPRISES, SKILLS, ACTEMP and ACTRAV. The purpose of this was to explore how, or under which circumstances, the intervention contributed to the desired changes.
- Interviews with 13 ILO CO Officers and program staff dealing with skills, employment and others at a country level. The purpose of this was to understand the extent to which the country offices were able to integrate the program initiatives into their policy development and how the synergies with other projects was realised.
- Interviews with 25 representatives from government, social partners, VET/TVET institutions and other stakeholders. The purpose of this was to understand the level of engagement and perspectives for social dialogue on the challenges that women in STEM are confronted with.
- Interviews were conducted with 7 academics and representatives of the service providers who were involved with the research and training activities. The purpose of this was to understand how the cooperation with service providers functioned and to triangulate this with the information received from other interviewees.
- An interview was conducted with a donor representative, to understand the donor's motives for supporting this project and their appreciation of the achievements.
- Interviews were held with the management of 6 management representatives from companies participating in the Program. The evaluation conducted one focus group discussions with four direct beneficiaries. The FGD contributed to verifying key assumptions about the partner's use of the program instruments, its added value, and any possible areas for improvement.

The above sample is not statistically representative, because the methodology that this evaluation used was mainly a qualitative approach for data collection. Time and resource constraints did not allow for a full sample. One limitation arising from the chosen evaluation methods was a lack of outreach to women workers – end beneficiaries. The evaluation team took into account the guidance provided by EVAL for carrying out evaluations during the COVID-19 pandemic.

The evaluators strived to ensure that the opinions and perceptions of women and other vulnerable groups were equally reflected in the interviews and that gender-specific questions were included. There were in total 63 persons interviewed (29 male and 34 women).

In general, the WiS program is well surveyed, and a lot of statistical materials are available. These were also included in the evaluation where relevant.

The evaluation team interviewed the relevant stakeholders, including project beneficiaries, partners and experts, to examine the delivery of outputs at a local level and to determine the achieved expected and unexpected outcomes. The evaluation analysed the comprehensive statistical materials available on the training participants (ex. pre- and post-training surveys, composition of participants, impact on employability and others). The selection of informants was based on recommendations from project management and evaluation teams' suggestions, based on desk review. Priority was given to informants with a direct involvement with the program.

Limitations

The evaluators conducted a number of evaluations during the pandemic where data collection was conducted on-line. This experience revealed that it is often difficult to get workers and trade union leaders to speak freely, especially if the interview is made via translation into the local language.

Factory management was generally reluctant to allow employees to speak to evaluators due to sharp targets and internal regulations.

The evaluation was affected by the festival season that occurred during the time of data collection and which made it difficult to set-up interviews with the key informants. The Presidential election in the Philippines also complicated the data collection process.

The fact that a study on the In Business program was conducted just prior to the current evaluation made it difficult to go back to the same informants again. There was also a concern in Thailand and, to overcome this, the evaluation was provided with raw data from the study. The collection of data in Indonesia was hampered by the fact that the project activities ended a year ago and since the MTE, the project focused on one activity only - a Web Development training targeting 600 female graduates and students of vocational education and training institutions. .

The evaluation noted a lack of consistency in the use of the terms “Immediate Objectives”, “outcomes” and “outputs”. This, together with some quite extensive annual changes to indicators and targets, made it difficult to track progress in a coherent way. The outcomes were difficult to use for an assessment of progress. Outcome 1 (Sector selection and skills gap identification) and Outcome 2 (Skills’ development and upgrading for entry-level, mid-skilled and high-skilled STEM jobs) describe rather concrete activities. Outcome 3 (Job placement) and Outcome 4 (In-job support) are more thematic issues. It was a challenge for the evaluation to relate to these “Outcomes”. The MEL system in the ILO could have requested a strengthening of the description of the outcomes, which would have helped the project management to remain focussed, especially in times of staff turnover.

The shift in programming priorities and approach, due to the impacts of the COVID-19 pandemic and weaknesses in program design, meant that this became the focus of the evaluation’s enquiries and was an important factor in the program’s ability to progress certain outputs.

Some foreseen informants excused as they had been interviewed for the Mid-term evaluation and had no activities with the program since then.

4 Key evaluation findings

4.1 Relevance and Strategic fit

The evaluation finds that the program aligns well with the donor, J.P. Morgan Chase Foundation's, focus on supporting programs that are "designed to promote workforce readiness; small business expansion; financial capability; and community development."[21] In this context, the foundation's 'New Skills at Work' program aims to identify strategies and support data-driven solutions that help improve labour market infrastructure and develop the skilled workforce globally.

Under this program, the foundation partnered with the ILO globally, to support a 'Skills that Work Project: Improving the employability of low and middle-skilled workers' (2017-2019). This project promoted quality apprenticeships as an effective means to provide young people from disadvantaged backgrounds with labour market relevant skills, and exposure to the work environment to help prepare them for decent and well-paid jobs in industrial growth sectors. The current Women in STEM program did fit well into this previous ILO/foundation cooperation. Furthermore, it aligned with the company's own commitment to supporting the advancement of women employees through its 'Women on the Move' and other gender equality commitments and programs.[22]

The driving assumption, underpinning the WiS program, (as stated in the PRODOC), is that there is a strong need and high demand for women in STEM industries and that private companies and national organisations are interested and able, with support from the ILO, to deliver relevant TVET-level skills and enterprise-level women's employment support activities. Program implementation has shown that private company demand can be variable in practice, at least in Indonesia. Although the demand for STEM-trained women in the male-intensive automotive sector proved not to be strong enough to sustain the development of program as envisaged, subsequent ILO experience has shown the ICT industry to be more open to employing women with STEM-related skills. Even in the midst of the COVID-19 crisis, ICT companies were hiring new staff.

The PRODOC does not set out a clear Development Objective to underpin the program. Rather it includes a descriptive paragraph that outlines the key alignments and elements of the program: "The Women in STEM Workforce Readiness Program couples demand-led technical STEM skills and employability and leadership training to transition: 1) underprivileged female secondary or post-secondary TVET graduates into sustainable entry-level STEM positions with career prospects; 2) under-employed women in STEM related fields upgrade their skills to move up to mid-level STEM employment; and 3) mid-level women working in STEM fields into leadership/managerial roles. These efforts will be codified in industry tools that will be integrated into the human resource practices of firms committed to training, hiring, retaining and promoting women in STEM related positions."

The evaluation finds that, despite the above weaknesses, the program design does make the rationale for the attention to women in STEM, the methodologies applied, and the overall results achieved sufficiently clear. Due to external factors – first and foremost the COVID-19 pandemic, but also the not fully realistic targets set out in the design – the program and its targets were revised several times during the implementation.

[21] J.P. Morgan Chase Foundation: https://fconline.foundationcenter.org/fdo-grantmaker-profile?key=CHAS003

[22] J.P. Morgan. Women on the Move. Women's Leadership Day. Available at https://www.jpmorganchase.com/impact/people/women-on-the-move

However, although the annual adjustments to program KPIs and targets proved necessary in light of implementation challenges experienced, the associated annual stop/start approach applied to the program, before further funding was agreed for the following year is reported to have been a source of uncertainty for program staff and an impediment to longer-term continuous planning. This led to staff turnover and focus on quantitative targets rather than strategic qualitative indicators.

The grounding of program design on the available evidence for selection of the automotive sector in Indonesia as a strategic focus appeared justified, in terms of the importance of the industry within the national economy. However, a more in-depth analysis that drew on ILO constituents and other local stakeholder inputs, could have brought the barriers to progress into greater focus. In practice these barriers were assessed as being sufficient to justify a decision to withdraw, with a redirection of efforts and resources to Indonesia's ICT sector. Momentum was lost in the first year of the program as a result of the initial sector selection. In addition, it took a long time to compose a team to implement the program.

The positive aspects of the experience included the establishment of initial industry links that could be picked up in future ILO programming; a demonstration in practice of the importance of flexibility, adaptability and openness to learning; and a deeper understanding of the challenges posed by the impact of entrenched gender-related social norms, reflected in the systemically male dominated nature of the industry and its recruitment practices. The value-added to program design, of early consultation with key national stakeholders, was also highlighted in the Thai context, where the Employers Confederation of Thailand reported that they were not engaged in the original strategic sector selection but later they actively joined the project implementation. The trade unions were not involved in the design and had no direct involvement with the program's implementation.

The importance of a strong program grounding in locally specific analysis is underlined by the Indonesian experience, as concerns TVET provision. Participation in TVET and other training courses is often residentially based and requires two or more months of living in a dormitory. Prevailing gender norms can create barriers for young women and their families, in this context. Further issues such as the availability of public transport for training participants who are home-based can also be a constraint to female participation. Such considerations need to be taken into account in program design and expectations, particularly when they concern engagement with disadvantaged women.

Given the importance attached to the review and development of national competency standards in the initial program planning documentation, the grounding of the program could have been strengthened by an initial summary analysis of the national competency and qualifications architecture of each focus country. The Regional Experts Meeting on the Future of STEM Education and Training in TVETs in Southeast Asia (December 2019 in Bangkok) served this purpose. It had tripartite participation from the three countries was seen as helpful for guiding initial decision-making on the approach, capacities, resources and investment of time required to advance work in this area.

Covid-19

One major external factor that influenced program planning and implementation was undoubtedly the impact of the COVID-19 pandemic, which caused lockdowns and restriction of movement in the three focus countries. A rapid adjustment of priorities and approaches was required across the whole WiS program, from March 2020 onwards, to respond to the changed circumstances. The evaluation finds that both Project Management, COs and the donor showed strong crisis management in mitigating the challenges to the program's implementation caused by the pandemic and they managed to minimize the negative impact on the program, while keeping partner priorities in sight.

The shift in orientation had three main components. These were prioritisation of online training capacities, skills and design within TVET institutions (including the training of trainers, curriculum guidance and development, and the development of learning materials); a shift of focus from

training/employment transition to the provision of job readiness training for TVET graduates; and piloting and moving company-based technical and I-B soft skills training online.

Within this context, some specific initiatives at the country level included the undertaking of a digital readiness survey for 1,000 learners and trainers in the Philippines, to determine TESDA's online TVET training capacity, the development of a STEM in TVET Curriculum Guide and Learning Materials and the development of a national training regulation on digital entrepreneurship (enabling public and private TVETs to offer programs in this area); and the expansion of the Indonesia program scope to include training in demand-driven ICT related skills for online small business establishment in the by the pandemic hard-hit retail sector, in partnership with the Indonesia Retailers Association (APRINDO).

ILO strategic framework

Current DWCP commitments in the three countries (those related to both skills and sustainable enterprise development) offered links around which the WiS program was built, with a view to strengthening the momentum for more women in STEM. The prioritisation in the Indonesian DWCP of quality apprenticeships further linked to the specific references about this under four of the five expected outcomes of the original WiS program agreement. For example, apprenticeships are proposed in one outcome, as an area for the development of country-specific tools to "help industry express its skills needs to training and educational institutions, and to train, hire, retain and promote women in STEM jobs." However, according to informants, the experience of the implementation of DWCP commitments to quality apprenticeship was confronted with challenges in Indonesia. These came from a lack of positive experiences and traditions in this field and revealed that there was limited potential for the integration of women in STEM at this stage.

Seven Centenary Initiatives provide integral elements of the ILO's Strategic Plan for 2018–21. Key among these for the WiS program were the Women at Work Initiative, the Enterprises Initiative and the Future of Work Initiative.

The ILO Program and Budget applies the strategy in practical terms to the organisation's programming at global, regional and national levels. For 2022-2023 key outcomes and outputs in this context were:

Outcome 4: Sustainable enterprises as generators of employment and promoters of innovation and decent work; Output 4.2. Strengthened capacity of enterprises and their support systems to enhance productivity and sustainability.
Outcome 5: Skills and lifelong learning to facilitate access to and transitions in the labour market; particularly Output 5.3. Increased capacity of Member States to design and deliver innovative, flexible and inclusive learning options, encompassing work-based learning and quality apprenticeships.
This outcome further prioritises ILO support to member states in innovative, flexible and inclusive skills programs and services targeting women, youth or persons in vulnerable situations. The WiS program is found to fit into this as well.

At a regional level, priorities and directions for ILO engagement in Asia and the Pacific – hereunder the ASEAN countries – are set out in the ILO Bali Declaration, which was adopted at the 16th Asia and the Pacific Regional Meeting in Bali, Indonesia, on 9 December 2016**.** In this context, the program aligns with the commitment under 'Priorities for national policy and action' to an enabling environment for sustainable enterprises and entrepreneurship; developing policies for more decent jobs through institutions for skills development, certification and valuation that are responsive to employers' and workers' needs through social dialogue; and responding to the impact of technological innovation on employers and workers. Section 7 of the Bali Declaration further commits the ILO to closing gender gaps in opportunity and treatment at work, including through measures to break down the barriers to women's labour-force participation and advancement.

Multi-country programs and projects are a core component of ILO engagement in the region. Some current initiatives that are of particular relevance to the WiS program are the Standard Chartered Foundation's initiative – Young Futuremakers – Promoting Youth Employability, the UK-funded Skills for Prosperity in Southeast Asia Program (SfP-SEA), 2019-2023 and the InSIGHT-2 project funded by the Government of Japan. These projects aim to contribute to an increased national capacity to achieve sustained and inclusive growth, through the enhancement of skills' development and TVET systems in Indonesia and the Philippines (and Malaysia) as well as a facilitation of the review and reform of their skills' development and TVET system strategies and policies. Some expected results that were of particular relevance to the WiS program include an increased equity in access to TVET, male-dominated job markets and entrepreneurship opportunities for women and vulnerable groups through changes to skills' development and TVET system programs and policies; and an improved quality of skills' development and TVET systems through the upgrading of curriculums and occupational competency standards, the capacity development of instructors, the promotion of lifelong learning, and improvement in labour market data collection and analysis. The program also linked with other STEM-related skills' development, job quality and productivity initiatives, synergised by the ILO regional enterprise development unit.

Modality

Stakeholder feedback and document review indicated that a relatively clear understanding existed across the program on its objective expressed as: "An increased number of women in each of the three focus countries have the technical and/or soft and/or job readiness skills necessary to obtain or progress in STEM-related employment in selected sectors."

With this as the starting point and taking into account the annual and COVID-19 related adjustments to the results framework made with donor acceptance, the evaluation finds that there is a solid causal link between the (above) objective and the program's outputs and activities. These are briefly summarised as follows:

- Output 1.1 produced the initial skills and career mapping studies to inform activity design and implementation in each of the focus countries.
- Output 2.1 led to an increased number of women being equipped with the technical and soft skills that would enable them to be better-positioned to transition into STEM-related employment in due course, subject to recruitment demand and opportunities.
- Output 2.2 delivered an increased number of currently employed low-skilled women employees equipped with technical and soft skills, which would better position them for lateral or upward career movement in due course in the context of particular sector or company HR policies and practices. Such skills further contributed to the achievement of enterprise development objectives, including productivity improvement.
- *Output 2.3 on the movement of mid-skilled women into leadership and management pathways was removed from the program results framework. (see below)*
- Output 2.4 ensured that a number of initial initiatives could move forward to link industry, government training units and public TVET institutions better around training design and delivery, and to develop a multi-stakeholder approach to promoting STEM cooperation, coordination and policy influence at national level.
- Output 3.1 (overlapping with Output 2.1) contributed to an increased focus on TVET graduate /STEM-related job readiness, including through skills to establish online businesses and the development of public TVET capacities and systems for improving graduate job readiness.
- Output 3.2 delivered an increased awareness among selected EOs and individual corporate partners of the value to them of increasing their support for recruiting women into STEM roles (although the onset of COVID-19 delayed further progress in practice).

- Output 4.1 contributed to an increased EO support for the promotion and delivery of the ILO I-B soft skills training program, public sector contributions through scholarships to supplement program resources, and company coverage of staff costs related to technical and soft skill training activities.
- Output 4.2 ensured the production of case study material to promote good practice in enterprise-based soft skills development.

Through all of the above, the relevant public and private STEM-related entities were strengthened in critical targeted areas through capacity development activities under the program. Taken together, these outputs and their delivery contributed to the possibility of overall greater movement of women into STEM-related employment over time, and to the STEM-related career prospects of low-skilled women employee beneficiaries.

Even before the program reorientation required it as a result of the COVID-19 pandemic, a number of other adjustments were necessary due to experience with program delivery. As indicated earlier, these were largely associated with adjustments to the original targets and indicators which were set too high, in the context of the available program resources and timeframe.

Key changes were:

Output 2.1: The targets set for the employment rates of TVET graduates (80 percent employment of graduates within three months in 2018, adjusted to 70 percent in 2019 and 50 percent in 2020) had a low probability of achievement, particularly during the COVID-19 pandemic. Accordingly, the program adjusted the focus of implementation in this context to on-the-job training opportunities and employability training for training beneficiaries, rather than solely relying on placement in full-time employment per se. This was a substantial change in the program's objectives.

Output 2.2: The 70 percent target for movement of trained low-skilled women into mid-skilled STEM position within three months was replaced in 2019 by a target to retain 70 percent of such women within the company which is a principle different approach.

Output 2.3: This output had an (unrealistically) high 60 percent target for the transition of trained mid-skilled women into STEM-related leadership and management positions and was dropped from the results framework, with resources being transferred to support the implementation of Output 2.2. The decision to remove Output 2.3 was taken in close consultation with the donor.

The focus of implementation for this output was to have been in Thailand, in parallel to existing company-based technical training collaboration with the Department for Skills Development. The intention was also to capacitate women in mid- to high-level positions (at least with a TVET Diploma at post-secondary education level) in the electrical and electronics sector. A 54-hour training course on Mechatronics was to have been the basis for the training. According to the Labour Force Survey, 85 percent of women are in entry-level jobs (i.e. operators, manufacturing assemblers and clerical support). Furthermore, those women in technical positions were in most cases already receiving training from within their companies. Given this context, an assessment was made that those at a higher risk of being displaced by automation – and subsequently in greater need of training – were the majority of women workers in entry-level jobs, both on the production floor and in clerical support. Accordingly, a decision was taken to prioritise this large segment of the workforce in Thailand for both technical and soft skills training; the latter through the ILO I-B program. The evaluation finds that this challenge could have been foreseen in the program design. The different sector and country specifics were not taken into account in full.

At the same time, the very different structure of the IT-BPM sector and career paths in the Philippines provided an opportunity to include women in mid-level jobs, together with those in entry-level jobs, in soft-skills training through the ILO I-B program. In the IT-BPM sector in the Philippines, the

occupations and associated educational attainment and skills are higher than the electrical and electronics sector. Thus, the original intent of Output 2.3 was carried forward in part in the Philippines I-B implementation context.

While acknowledging the rationale behind the removal of Output 2.3 and its subsummation under Outcome 2.2, the shift left an important gap in the original program concept. This had envisaged active transitions and linkages between STEM-related skills development, employment and career advancement. Increasing the number of women in STEM-related management and leadership roles would over time contribute to creating opportunities for other women, due to the priorities women would bring into such roles.

As elaborated above, the initial sector focus on the automotive sector in Indonesia was also removed from the program, due to an initial underestimation of the complexities involved in shifting gender dynamics within the highly male-dominated industry. After a decision to shift the strategic sector focus to ICT, the program began to move ahead. ICT offered more opportunities for women with relevant STEM-related skills. It was also possible – and more logical – for participants that training in this field was undertaken online at home and for work to be conducted from home during lockdowns. It should also be noted that there is an extremely high demand for ICT specialists in Indonesia.

After taking the above into account, the original program concept and design were clearly overly ambitious in certain key areas, given the program timeframe and available resources. It is apparent that the program design underestimated the complexities involved and the time required (the original program had foreseen a duration of 15 months) to move training/employment and career transitions forward within the context of the labour market and in-company factors, such as the particularities of company and sector career paths and the impact of discriminatory, gender-related social norms concerning the engagement of women in training and employment.

As noted above, the stronger anchoring of the program design, within local training/employment transition and sector dynamics, would have benefitted from more engagement with the constituents and locally based stakeholders. This could have provided insight and analysis that would have supported the development of realistic indicators and targets.

There was a lack of clarity and consistency in and between the PRODOC, donor agreement and subsequent results frameworks on immediate objectives, outcomes and outputs. Additionally, a clear and concise overarching development objective was not set out in the PRODOC. Furthermore, the program indicators and outputs were revised annually – in light of experience – but mainly to reduce the initially high expectations in key areas. This created a situation where it was difficult to measure the level of real achievements versus the expected outcomes.

Recommendation 1

Addressed to	Priority	Time frame	Resources
ILO	High	Long-term	None

The ILO is recommended to secure a stronger evidence-based program design that builds on the collective knowledge and experience of the national constituents and national and international experts. This might avoid a situation, such as occurred in the WiS project, where constant changes (beyond those obliged by the COVID-19 regime) were found needed.

4.2 Coherence

The program has a natural emphasis on gender besides this no specific attention to cross cutting issues was paid in the program design. During implementation some attention was paid to social dialogue and inclusion of disabled persons as beneficiaries.

Two major companies were beneficiaries of the program, Seagate Technology (Thailand) and Teleperformance (Philippines). Both indicated that their internal gender equality and diversity polices were an important factor in their involvement. The ECOP also emphasised this factor and saw the program as adding value to the implementation of their commitments in this regard. ECOP established a Diversity and Inclusion Committee. Furthermore, ECOP and the PBCWE have publicly committed themselves to supporting more women in business leadership and management. The evaluation finds that likely 'up-take' of the program is enhanced where the concerned entity (EO or private company) has a strong and applied gender equality and diversity policy and institutional commitment in place. For public sector entities, gender equality commitments link to national government laws, policies, strategies and plans, which are linked to global commitments including the SDGs and Beijing Platform for Action, 1995. However, these do not necessarily translate into practice at the operational level and require continuous promotion and reinforcement.

An unexpected gender related outcome of the I-B soft skills training is reported to be a positive impact in the power relations in the families. It is reported that women after the training feel more self-confident and stronger in conflict solution also in their families meaning they strengthen their position in decision making in the family.

Alignment

In terms of analysis and available ILO tools, the original program design was weighted more to the 'supply side' of women-in-STEM training/employment/career advancement continuum, and a greater clarity and understanding of the dynamics of the demand side was developed through commissioned research and experience, as the implementation progressed. One lesson-learned concerned the importance of sector- and company-specific analyses of employment and career pathways – i.e. an applied approach that works in one case will not necessarily work in the same way in another case.
Although an initial skills' demand analysis was carried out at the beginning of the program, subsequent experience indicated that further analysis and measures would have been needed, to ensure progress was made towards the ambitious training-to-employment indicators and targets that were originally agreed with the donor. Efforts to address this transition were initiated in collaboration with partners and albeit constrained by COVID-19. One such initiative was technical training activity in Indonesia, which included provisioning for the creation of 126 on-the job training /employment opportunities.

As concerns potential program risks, the PRODOC recognised that capacity gaps among TVET institutions and private companies would require analysis and targeted attention under the program. However, although the possibility of political tensions and natural disasters were recognised as risks in those countries concerned, no-one could have foreseen the impact of the COVID-19 pandemic. It struck at a crucial time in the program's implementation, just as the key training components were gaining traction and partnerships with public and private counterparts was being developed. The "Assumptions and Risks" listed in the PRODOC provided for mitigating actions, which could include changing the sector selection (as proved necessary for the automotive sector in Indonesia, and with healthcare being added to the program's focus in Thailand). It also allowed for an assessment of partner capacities and consolidating partnerships at an early stage of implementation, with adjustments to be made to program planning and approach accordingly (as also proved necessary).

The constituents informed the evaluation that they felt the ILO needed to coordinate better between ongoing projects in the field of employment and skills' development, to avoid overlapping and to give the different governmental directorates the possibility of coordinating and ensuring that they understood all of the projects better.

The Philippines: The program was closely linked with two other major skills' development work-streams.

- Industry Skills for Inclusive Growth (InSIGHT) Phase 2: Green skills (with 'Green STEM' integrated into the approach), is a key part of the program, linking to the ILO's wider work on the promotion of green jobs, youth employment, skills and empowerment, and environmental sustainability.
- The implementation in the Philippines of the ILO's regional 'Skills for Prosperity' program: the priority sectors are agriculture, with a focus on food production/processing; construction, with a focus on skills for green building practices; and IT-BPM, with a focus on the emerging skills needed for e-commerce. The latter in particular offered strong potential for synergies (partly realised) with the WiS program and for carrying forward its agenda beyond the program's period. WiS perspectives were incorporated into the development of the ILO Skills for Prosperity program.
- There were also links with the work of the ILO on labour migration in the Philippines, through the engagement of the respective workstreams with TESDA.

Indonesia: the WiS program was seen as an integral part of the wider ILO skills' development engagement, which brings together the Skills for Prosperity Program (focus on maritime skills and skills strategies); the ILO/Japan Multi-bilateral program (InSIGHT-2 work-based learning, online TVET and skills systems); and the Fast Retailing project (employment insurance and active labour market policies). In Indonesia the ILO has an efficient tri-partite set up to with a joint PAC covering all employment and skills related programs and projects.

In Thailand, where the national skills' development infrastructure is more developed, the WiS program was the main skills' initiative under the DWCP, which includes specific targets that were relevant to the program. Synergy was developed with the ILO the Young Futuremakers Thailand – Promoting Youth Employability Project.

4.3 Effectiveness

Regular workplan revisions were required at the national and regional levels, in line with the annual adjustments to program indicators and targets agreed with the donor. Apart from the impacts of COVID-19, some contributing factors to the adjustments included partner capacity gaps and a longer than originally envisaged time to develop some key relationships, and to build trust and partner buy-in for women in STEM key concepts. Overall, the strongest area of delivery across the focus countries was in meeting the STEM-related technical and soft skill training targets, whereas targets related to transition from training to employment and career progression proved to be challenging.

The stakeholder feedback that was received through evaluation interviews was in general positive for the quality of the technical advice and training, soft skills development, capacity development and partnership aspects of the program. The interviewed stakeholders regarded the program team at the regional and national levels highly – especially in the first part of the program's implementation – for its professionalism, responsiveness, facilitation skills, energy, openness, commitment, active engagement and expertise (as well as its ability to bring appropriate additional expertise into the implementation as required). The team's resilience and adaptability in the face of the impacts on program plans of COVID-19 were also highlighted in stakeholders' evaluation feedback.

The stakeholder feedback that was received by the evaluation is backed-up by the findings of the technical and soft-skills training evaluations that were obtained through the Qualtrics survey software. This showed positive ratings across the board for content, learning outcomes and training approach.

The programme has been rigorous about conducting post training surveys and presenting the findings on satisfaction with content, learning outcomes and dynamics. The following shows selected key results of surveys conducted with participants who were part of the In Business trainings[23]

The program surveyed 16.565 beneficiaries – 866 from Indonesia, 1003 from Philippines and 14.696 from Thailand of these 14.147 from Seagate. (In Seagate factories it was mandatary to participate in the training whereas it in other companies was voluntary.) Of the total were 81% female and 19% male (other genders were not considered).

More than 50% found that they daily use the creative thinking they have learned from the program. Around 2/3 use the interpersonal communication daily. More than half now take the position as informal leader in their group. 93% informed that they have good relations with management. +50% noticed a daily use of problem-solving technics. Public speaking and consensus reaching skills are used by around 1/3 of the trainees. 2/3 use teamwork and time management skills at a daily basis. These scores are very high but unfortunately did the current evaluation not have the chance of conducting a bigger number of in-depth interviews with the beneficiaries to learn more specifically how and in what relation they use their new skills – qualitative assessment.

Achievement towards Outcomes and Outputs
(In different program documents the indicators and achievements are mixed up with each other therefor the listing of indicators and achievements might be confusing here the evaluation has used the last available documents.)

Outcome 1: Sector selection and skills gap identification

Output 1.1: Sector-specific STEM skills and employability action plans for women in ASEAN-3 countries

Indicator:
3 skills and career mapping studies for the Philippines, Thailand, and Indonesia – one per country

Achievements:
The original agreement between the ILO and the donor envisages fully-fledged sector-level action plans which involve “stakeholder review and buy-in”. Implementation at this level has not proceeded instead three skills and career mapping studies were developed, one per country as well as long-term action plans for post-program sustainability, including assessment of skills needs. Research was conducted in Indonesia inform of a labour market analysis on types of jobs available in the ICT sector (with a focus on SMEs) and the required ICT skills to complement job placement strategies for graduates of female only ICT courses from BBPLK Bekasi and in Thailand a skills demand analysis of the Electronics & Engineering sector with a view of highlighting opportunities and a roadmap for career progression, particularly for women.

These outputs create a good basis for possible future interventions.

Outcome 2: Skills development and upgrading for entry-level, mid-skilled and high-skilled STEM jobs

[23] https://drive.google.com/drive/folders/1YqVWxr7nqVWP7E2KmJAp3px5qroGMDQp

Output 2.1: Pre-employment technical and employability skills for TVET students/graduates to facilitate their entry into full-time jobs

Indicators:
1,230 TVET graduates trained across ASEAN-3 in STEM-related technical and soft skills

Place at least 50% of these women trained in full-time STEM-related jobs within 6 months after completing the training program

Achievement:
In the Philippines more than 500 beneficiaries (majority women) were trained on animation, game development, software programming, e-commerce web-development. TESDA provided 1.300 scholarships. The strong commitment from TESDA can be seen as strong achievement of the program.

In Indonesia 242 women were trained on graphic design, IT software solution, network professional and web development. In partnership with Axioo Class Program (ACP) and public TVETs, 683 vocational high school female graduates and students commenced training in web development. 126 of the graduates (20% of the total participants) received on-the-job training within the ICT Industry.

A total of more than 1.400 were trained (+60% women).

The placement rate (even when reduced from 70-50%) was too ambitious within programme resources and timeframe and was not met - approximately 25% were placed in jobs. In Indonesia 242 women were trained on graphic design, IT software solution, network professional and web development at BBPLK Bekasi in 2019. However, the transition did not go well and only less than 5% of the training participants found employment after the training. In October 2020, in partnership with Axioo Class Program (ACP) and public TVETs, 683 vocational high school female graduates and students commenced training in web development. Through this training program with ACP, 126 of the graduates (20% of the total participants) received on-the-job training within the ICT Industry.

According to an ILO Specialist is a three-year survival rate of new business generally considered to approximately 50% and the rate gets even lower when the business area is different from her/his previous work experiences, it is quite a rational decision not to take risk and begin a new business immediately. The impact of the STEM training may be realized several years later when more business and job opportunities are made available in the provincial setting.

A total of more than 1.400 were trained (+60% women).

The PRODOC envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and apprenticeships to assist with job placements. Limited progress in this regard was reported. The Indonesian experience (where apprenticeships and structured internships are on the agenda as part of the ILO's overall national skills development programme) demonstrates the complexities of moving forward in this area. Apprenticeships is still largely a new concept and requires a period of socialization over time, while the immediate need is to focus on bringing greater structure to internship arrangements. These internships have to provide fair and decent working conditions, or they will push away young people from entering the training and the related internships because of the bad reputation which is prevailing already now according to informants. More than 20 companies have committed to engage in work-based learning.

The COVID-19 context made transition into employment even more problematical. As a result, the programme focus in this regard was shifted to public capacities and curricula for employability training, to enhance employment prospects on the 'supply side'. Longer term, increased attention to

the ‘demand’ side of the training/employment transition dynamic is required, linking it with the role of EOs to assist in ‘opening doors’, as well as the role of public employment services needs attention.

A technical forum was conducted in Indonesia to launch of the web development training programme in partnership with Axioo Class Program, aimed at raising awareness and promoting participation of girls in STEM Sectors. The forum was an eye opener for participating stakeholders and the message is reported to have been well received. The Web Development training was planned for 600 female graduates and students of vocational education and training institutions. It was a collaboration to design and implement the training program together with Clevio Camp, a training provider, and Axioo Class Program (ACP), an education and training program that prepares future talents in the ICT sector with relevant competencies and skills to meet industry’s needs. The training aimed to i) Generate interests of vocational high schools’ female graduates and senior students on ICT skills and develop their confidence to start an ICT career, (ii) Develop knowledge and skills of vocational high schools’ female graduates and senior students on computer programming for website development to secure a job in ICT sector or to become freelance website developer (iii) Develop soft skills of vocational high schools’ female graduates and senior students to increase their employability in ICT sector and (iv) Provide skills to create and administer a website development business. It was being done through i) Training of Facilitators for vocational high school teachers, (ii) Web development training for vocational high school graduates/students and (iii) Work Readiness training for vocational high school graduates/students. In addition to this training, the Programme provided further assistance in a form of a job placement programme to assist at least 20% of participants, (120 female participants) to find or create a job in the ICT sector. The transition of these vocational high school female graduates into ICT related employment took several forms, i.e. traineeship or becoming a freelance web developer. Web Development training exceeded its target. From 2173 participants who registered to the training, 683 female students and alumni of vocational education institutions completed the minimum requirement for basic web development training

Implementing Project -Based Learning based on the experience from the current project is reported to have been a good success for combining hard and soft skills training. Partners report the intention to use this method in future programs.

Output 2.2: *Skills upgrading training for those who are already in employment but in low-skilled jobs with limited upward mobility to expand their career prospects*

Indicator:
Train 1.300 women in low-skilled jobs in STEM-related technical skills through work-based learning in Thailand
At least 70% of these women are retained in their companies
4.500 low-skilled women in ASEAN-3 trained in critical soft skills in-company through peer assisted learning
12-month turnover rate is reduced by 30% among these women after receiving training

Achievement:
Almost 2.000 beneficiaries (100% women) trained on Data Analytics and Visualization for Manufacturing (DAV). Part of these have been trained on DAV through a partnership between the ILO, the Department of Skills Development and private sector companies. DAV is offered by the network of skills development institutions (of Thailand’s Ministry of Labour) located throughout Thailand. This Course is delivered by a designated local training institution and costs about USD40/hour. This course is delivered in 6 days and totals 36 hours. The training can be in-company or in-institution with training

facilitator's fees covered by the government. This together with the shift to on-line training has allowed for the geographical outreach to be widened to more provinces and in collaboration with the Young Futuremakers Thailand – Promoting Youth Employability allowed for outreach of the DAV for Manufacturing Courses to young women and people with disabilities, including the development of a hybrid online course for people with hearing impairment.

In the Philippines in partnership with ECOP, additional beneficiaries were reached. Four industry associations have been capacitated and onboarded to take ownership of the roll out of In Business (Philippine Hotel Industry Association, ITBPO Association of the Philippines, Philippine Chamber of Commerce and Industry, Philippine Business Coalition for Women Empowerment).

The target set for the movement of trainees into mid-skilled positions was not realistic in terms of the number of workers who could potentially move into available positions and the time and educational attainment levels required for workers to move through the career pathways of the companies and sectors concerned. Almost 2.000 women were trained, but only a small number moved to mid-skills positions.

The target concerning retention of staff who have received training requires ongoing monitoring in collaboration with the companies concerned. There are indications that around 80% of the trained women are retained this has again lead to less turnover and must be seen as a satisfying achievement.

Around 18.000 have been trained it should however be noted that the far majority of this very high number comes from Seagate in Thailand – 16.000. It should be noted that the training in Seagate was done within one year this indicates the potential for scalability of the training method – activity-based learning for both soft- and hard/technical skills training.

It is reported that the turnover has been reduced by 30%, which is a significant benefit for the companies as resources for hiring and introduction to job becomes lower accordingly.

The I-B soft skills training became the flagship of the program not at least because of the high numbers it produced linked with the positive response from a number of employers and the EOs. There are indications that the training has a positive impact on productivity as well as quality of production (less failures). This is by informants seen as a result of the better communication skills and a more inclusive and open management culture at the production floor level. There is also a positive impact on absenteeism and staff turnover. An expected improvement in career promotion possibilities post training is very limited also the participants do not report any increase in salary. The evaluation finds that the issues of promotion and compensation should be considered in future interventions as workers would need to see some concrete results and improvements in their situation to keep their attention and active participation at the longer term.

There are indications that the effect of the soft skills training peak after 6-9 months after which it is fading out this underline the need for continuous training it is therefore positive to note that some companies are planning to include the soft skills training in their regular HR training programs.

An agreement in a form of a public-private partnership reached with IBCWE to conduct In Business soft skills training among its company members achieved in contribution to the outcome of transitioning mid-skilled women in STEM fields into leadership and management positions to ensure women not only enter, but also stay and get promoted in STEM fields.

Output 2.3: High-end technical skills, or leadership and management training for those who are already in supervisory or mid-skilled positions. (Later dropped from the results framework)

While acknowledging the rationale for subsuming this output under Outcome 2.2 and in agreement with the donor, the evaluation observes that this left an important gap in terms of carrying forward the original integrated concept of the program.

Recommendation 2

Addressed to	Priority	Time frame	Resources
ILO	Medium	Long-term	Medium

The intent of the original objective remains valid as part of a holistic and comprehensive approach to promoting women in STEM and should be considered within the context of possible new and renewed regional and/or national skills' development, enterprise development and gender equality programs.

Output 2.4: Develop country-specific tools to help industry express its skills needs to training and educational institutions, and train, hire, retain and promote women in STEM jobs

Indicators:
3 occupational and competency maps for target sectors and countries updated and finalized

1 skills/competency standard and curricula for data analytics and IT skills implemented

1 knowledge sharing platform for communication of enterprise-based training programs along with the toolkit to develop soft skills among female workers across ASEAN-3 designed and launched.

2 technical forums to raise awareness and promote participation of girls and women in STEM sectors conducted.

Achievement:
Various initiatives were completed to link industry skills requirements better with TVET prioritisation and planning. These included two technical fora; working with business in relevant areas to design training curricula (e.g. DAV with DSD in Thailand); and the first steps to establish a national tripartite STEM cooperation and advocacy platform in the Philippines. In Thailand a Rapid Assessment on Up-skilling and Re-skilling Needs of Workers Impacted by COVID-19 and Automation was conducted in Thailand this contributed to an assessment of the immediate and mid-term challenges towards the vocational training system.

The development of national STEM-related competency standards was not able to be progressed to the degree envisaged, although steps were taken in this direction, in both the Philippines and Thailand. In the Philippines the focus was on the integration of STEM-related skills into TVET through engagement with Certification and Standards officials. In Thailand, the complexities of the legislative change required for the development of new competency standards led to an alternative approach to working with the relevant national partners, to develop and apply new competency standard at the program level for technical training in DAV. This was done via approval from the DSD and in a way that enabled the standards to be applied at Skills' development Institutes nationwide. Longer-term work on the upgrading /development of national competency standards that are relevant to the women in STEM agenda remains a priority in the countries. Steps to progress such developments should be part of other ILO skills engagement at the regional and national levels.

Recommendation 3:

Addressed to	Priority	Time frame	Resources
ILO	Medium	Long-term	Low

The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and/or apprenticeships, but this did not materialise in full. The ILO is recommended to give priority to further development of its efforts for promoting mixed theoretical and practical training for VET/TVET students.

The following were added (to the above) in the 2020 results framework:

Outcome 3: Job placement

Output 3.1: TVET level assistance for women participants including training conducted on issues related to recruitment and job placement

Indicator
1 training tool to support TVET-level training on issues related to recruitment and candidate preparedness developed.

1 communication platform to strengthen public TVET bodies' capacity to reach out and enrol more girls and women in STEM-related technical trainings developed

1 toolkit and capacity development program for TVET instructors to mainstream selected STEM skills developed and implemented.

Achievements:
The COVID-19 pandemic response triggered an increased focus on job readiness training in the Philippines and capacitated TVET instructors to go online in Indonesia through a number of training activities. More than 300 instructors were reached.

The intent to establish a communication platform, which was set out in revised indicators and targets (in order to strengthen TVET institution's outreach capacity), was carried forward by directly connecting EOs with TVET system authorities.

The program observed that the quality of training met expected standards and corrections of training materials were made to secure they were relevant and targeted to the users needs.

STEM in TVET Curriculum Guide developed for the Philippines.

1 soft skills training for new TVET instructors from across Indonesia conducted in collaboration with BBPLK Bekasi (Bekasi's TVET Center) (33 participants: 9 female and 23 male)

In the Philippines a Job Preparation Training Package (collaboration with Bagosphere) and has 2 manuals (one for learners and another for facilitators) and an online Job Readiness Training Module (now offered in TESDA's online platform) which were launched.

Women in STEM Indonesia designed and pioneered the training on e-training development and delivery targeting BLKs/BBPLKs/BLKKs instructors, which received positive feedbacks from the Ministry of Manpower and the instructors. This activity was appreciated and recognised by UNESCO-UNEVOC as a good training practice. Learning from the e-learning experience, the Ministry of Manpower is in the process of integrating the training into its e-platform for their future training

modality. Ministry replicated and continued the training with INSIGHT-2 Project for selected instructors, namely instructors of 28 training programmes that are currently being converted into blended/e-training. The training targeted 99 instructors.

The program created lateral impact for the ILO team to conduct related studies outside of the original scope. An example is the gender equality and COVID-19 study done in 2020: Gender equality and COVID-19: Gender diversity is good for business says new ILO survey in the Philippines. Another is the blockchain-related proposal development for EU (not funded), presentation of the blockchain-based digital traceability of coconut (2019) A Presentation on the Traceability and sustainable coconut: Learning from a recent digital traceability and responsible supply chain initiatives, and the stocktaking study of the blockchain-based supply chain traceability in the Philippines and Vietnam (2019) Study on The Innovations and Challenges in The Digital Traceability towards Safe, Fair and Sustainable Food Supply Chains in Asia. The program facilitated outreach to and dialogue with the blockchain responsible managers of IBM which has been a key partner of Women in STEM program. These exploration works on blockchain contributed to FoW dialogue, and often was the topic of the discussion with the global team of the ILO working on FoW.

Output 3.2: Enhancement of firm partners support for the targeted recruitment of women, in particular those participating in the STEM training programme

Indicator
3 workshops with employer organizations and relevant enterprises to develop joint action plans for program sustainability and long-term impact conducted, including follow-up activities on recruitment of women

Achievement
Five workshops with national employers' organizations and relevant enterprises across ASEAN-3 conducted (2 workshops in the Philippines, 2 in Thailand and 1 in Indonesia) but follow-up was constrained by the COVID-19 pandemic and a reorientation of the program

Engagement with corporate partners, to recruit STEM graduates, remains an important priority to be pursued in an eventual follow-up to the current program, including a longer-term implementation of mentorship, traineeship and quality apprenticeship programs, in association with national and sector EOs, where relevant.

ECOP hosted an event as part of Women's month in support of the 'Call to Action' for gender and diversity inclusion in workplaces. An additional event was organized with EOs bringing together participating companies, member organizations of ECOP and potential members to discuss the importance of soft skills and recommendations on how to continue promoting STEM skills training.

Outcome 4: In-job support

Output 4.1: Mobilize support of training institutions, sector / employer associations and firm partners in each country, to provide institutional support to programme

Indicator:
3 employer organizations or business groups in ASEAN-3 institutionalized the Program tools developed for enterprise-based training.

3 TVET institutions and enterprise partnerships for on-the-job training established.

3 pieces of communication developed (one per country) documenting the impact of the Program collaborating with relevant public and private actors and assisting girls and women.

Achievement:
The program /ILO signed MOUs with the EOs in the three countries for I-B promotion and delivery.

Agreements with the Philippines and Indonesian Business Coalitions for Women Empowerment were leveraged to support ECOP and APINDO, respectively, in promoting and delivering the I-B soft skills program.

The development of communications about the program's impact and collaboration for stakeholder, public and potential funder attention functioned well and the program especially the I-B soft skills got high (dominating) profile.

The program has made strong efforts to get visibility in front of constituents and has succeeded first and foremost with the EO's but also relevant governmental institutions have been made aware of the program and STEM related issues in general. The trade unions have only to a very limited extent been involved with the program.

Output 4.2: Thought leadership and advancement of good practices

Indicator:
3 case studies developed –one per country- documenting the impact on female workers and employers of the work-based learning program implemented

Achievement:
This encompasses both the technical (hard) and soft skills' development aspects of the program. However, there has not been sufficient time to show any evidence of training that has led to career advancement in either sphere.

<u>Achievements overview</u>
The following comments takes into account the outputs set out in program planning and reporting documents, and notes that these have been extended in subsequent program planning, beyond the original donor agreement.

The impact of the COVID-19 pandemic led to a reorientation of the program's design, planning and implementation. Key elements of the reorientation were shifts in focus, towards design, capacities and curricula for online TVET training in Indonesia and the Philippines, support for the shifting of all training online, and shifting attention from training/employment transition per see to STEM-related job readiness training and inclusion of e-commerce training for low skilled workers or potential entrepreneurs. Also meaning that some Outputs and achievements were not all directly build on PRODOC foreseen activities.

- Almost 17.000 employees (approximately 75 percent women) have received soft skills training through the ILO I-B training program in Indonesia, the Philippines and Thailand. This number was reached through collaboration with more than 25 leading enterprises in the priority sectors. Upon the achievement of an initial target of 1,000, Seagate Technology in Thailand expanded the program to reach a total of almost 15.000 employees. Up to a further 5,000 workers were expected to be trained under existing MOUs with companies across the three countries during the project period, but not all have been able to deliver their target numbers.

- Agreements were reached with companies across the focus countries for soft and technical skills development, including 10 agreements with companies in the Philippines (multinational and national companies) for delivery of the I-B soft skills training program.
- Five workshops were held with national EOs on promoting the I-B soft skills program and on identifying other areas for cooperation, depending on the context at national level. One case study was produced on the impact of the I-B soft-skills enterprise-based training program on women workers and employers, as part of the program's commitment to promoting good practice.
- Close to 1.000 workers (mainly women) received STEM-related pre-employment technical training in public TVET institutions in Indonesia and the Philippines.
- Over 1,500 low-skilled women workers in Thailand were upskilled through a training program on DAV that was co-designed by the ILO and the DSD, Ministry of Labour, with industry input. A further 700 workers, from five companies, underwent training in the same field. This was the Ministry's first-ever such collaboration for in-company technical training, targeting low-skilled women workers. The DSD has indicated its intention to continue rolling out the training at a provincial level through Skills' development Institutes and aims to reach an additional 300 trainees per year.
- A hybrid DAV Course was developed and piloted with about 40 youth with hearing impairment in public schools in Nakorn Ratchasima province.
- Steps were initiated in the Philippines to institutionalise the ILO's training products and approaches on integrating STEM-related technical and soft skills within TESDA's official TVET training regulations, curricula and systems.
- A training tool-kit was developed in the Philippines to support TVET-level training related to recruitment and job readiness.
- As part of the COVID-19 pandemic response in Indonesia, 180 public TVET instructors were trained in the creation and delivery of online training and more than 600 people (60 percent female) were trained in the establishment of online small retail businesses in Indonesia.
- New competency standards were developed for the above DAV training program. This drew inter alia on a benchmarking of international practices in the field. Due to the requirement that the adoption of new national competency standards in Thailand require legislative change, the standards were adopted at the program level by DSD and are applicable nationwide through provincial Skills' development Units. Initial efforts were also made to embed/adapt I-B modules within DSD training in Thailand and to leverage the national Skill Development Act (2002) to gain traction.
- Steps were taken in Indonesia to influence national competency standards through the integration of STEM-related skills into TVET, including through an engagement with Certification and Standards officials.
- A national Technical Working Group (TWG) was established in the Philippines, on STEM education and training for workforce readiness, with the participation of all the relevant ministries and agencies. This development was foreseen to become the basis for the development of a broader tripartite body on STEM education and training, which *inter alia* would inform government policy making in this area. However, the TWG has become a very much appreciated platform for inter-ministerial coordination and discussion rather than a tri-partite body. Through this TWG, Department of Education was able to identify solutions to the different overlapping projects and programs of the various government agencies including the DOLE for the STEM in Careers, the DOST resources in starbooks, the DICT on needs of teachers on ICT skills and ILO on STEM in TVL.
- An MOU was finalised for long-term collaboration between the program, the Ministry of Manpower and BBPLK Bekasi (a national 'Centre of Excellence' TVET institution) in Indonesia. A MOU is also in place with wider ILO support, and is already being enacted, for collaboration between APINDO and the BBPLK Bekasi for STEM-related technical training.

- Active engagement was maintained with national employers' organisations in Indonesia, the Philippines and Thailand to increase program outreach, involve business more in TVET prioritisation/development and to promote and implement the ILO I-B soft skills training package.
- In this context, agreements were reached with national and sector-based EOs for collaboration with the program, particularly in the promotion and delivery of the ILO I-B soft skills training program. These included MOUs with EOs to roll-out the I-B program as part of their membership services and growth strategy. The ECOT is committed to roll-out I-B within Thailand's electronics and electrical sector and its healthcare sector.
- A knowledge sharing platform was developed as part of a regional Peer Learning Hub for Enterprises in Asia-Pacific, an initiative supported by multiple enterprise development projects across the region. The Peer Learning Hub is an interactive digital platform for accessing updates, information and materials on the ILO's activity-based and peer learning training programs. It includes information on relevant enterprise based, activity based and peer to peer learning training programs.
- Research briefs 'Leading to Success: The business case for women in business and management' were launched as part of the program in collaboration with PBCWE and ECOP in the Philippines and IBCWE and APINDO in Indonesia. The true value of the briefs came from the engagement with stakeholders where the findings (e.g. via the launch event) were discussed, with a view to bringing attention and recognition to the value of investing in women in the workplace.
- Program resources were supplemented across the focus countries through government commitments of 1.300 scholarships in the Philippines for TVET-based training programs; and coverage by private sector partners of workers' salaries and social protection payments for the periods when they were undertaking training in working hours. The commissioning of a private IT / STEM-related training provider in Indonesia also includes an in-kind agreement to use the provider's own resources and connections to provide up to 126 on-the-job training opportunities/placements for trainees during the remainder of the program period.

Changes in policies and practises

The program has been somewhat successful in interesting companies in signing MoUs. The evaluation was informed that especially TNCs/MNCs are expressing interest in including the ILO STEM products and the I-B program in their HR development training activities.

Due to the impact of the COVID-19 pandemic and the slowed progress coming from that, the MOU agreements' targets were not met by all partners, it turned out to be difficult for some partners to engage employees in on-line training. The I-B program produced a number of observable benefits from the perspective of company culture and staff advancement. These included increased confidence to engage with managers and peers, an increased collaborative and networking orientation and a greater awareness of 'big picture' considerations.

The evaluation finds that the ILO should consider the quality of jobs offered to the trainees (internees) after training. For example, it was reported that many of the trained animators were working as commissioned freelancers. It was also reported that many of those getting internships were working for two–three months without pay or reimbursement of costs (electricity, rent, software etc.) and with very little facilitation/coaching and no chances for staying in job. They were simply doing regular work for the company free of charge. In the short- and mid-term, such practises will have a negative impact (push away) on the recruitment of women into STEM professions.

Recommendation 4:

Addressed to	Priority	Time frame	Resources

ILO	High	Long-term	Low

The ILO is recommended to give priority to trainees getting insight into their basic rights and relevant information on occupational health and safety – also for working from home (e.g., ergonomics) and partners should be encouraged to ensure that the offered jobs are decent jobs.

Challenges

The PM showed a strong degree of leadership when addressing the changes in beneficiaries' immediate needs that arose from the COVID-19 pandemic response regimes that were out in place in the target countries. The program staff thought out-of-the-box and found relatively fast creative solutions to overcome the new and unexpected challenges this brought. Likewise, the donor showed a high level of flexibility.

During the pandemic, government agencies in the Philippines refocused their resources to COVID-19 and their engagement with STEM activities were temporary put on hold.

Strategies and implementing modalities Lessons Learned

During interviews, training providers and participants indicated to the evaluation that the transfer to on-line training created challenges for many potential trainees. They did not always have the required equipment, especially when it came to software which can be expensive (ex. animation software licences). Others do not have laptops or stable internet access. According to informants, these challenges reduced the potential number of trainees. Whereas the shift to on-line training saved money for the service providers it shifted the burden onto the trainees' shoulders. One training provider informed the evaluation that whereas they can normally get 50 out of 100 applicants through the training, this figure was reduced to 20 because of on-line training challenges.

The evaluation finds that even the program documents did not talk about decent work, it should be implicit in an ILO program that efforts are made to promote decent jobs. Informants who had participated in training informed the evaluation that after the training they joined internships, with no pay no reimbursement of costs. Some informants suggested that better information should be provided about the length of training intervals and internship opportunities before the training started.

According to EO representatives and trainers, face-to-face training is preferred, especially when the participants are lower-skilled workers. The online training is much more cost effective, but it has proved to be a challenge to retain an active participation from the trainees. The companies can assess the effectiveness of the training by looking at the trainee's performance, productivity and relations in the work place after the training. It was found that especially would cases from the target enterprise make training more relevant. Training should be more tailored to the individual enterprises and their technical needs. The EOs felt that it should be up to the companies if they wanted to involve the trade union in the training activities.

Both the 'Leading to Success: the business case for women and management' reports in the Philippines and Indonesia and the profile and knowledge sharing generated by the 'Regional Experts Meeting on the Future of STEM Education and Training in TVETs in South-East Asia' – in December 2019 – were reported to have provided valuable sharing of experience; as did the development and dissemination of communications on the program's impact and progress and the interaction and cooperation for mutual support and learning between the respective country staff (particularly between Indonesia and the Philippines), and through the role of the program TO. These various cross-country interactions and initiatives are assessed as adding value to implementation at a national level, through the sharing of knowledge and lessons-learned, as well as the generation of a greater profile for women in the STEM agenda.

In general, the stakeholders found the I-B soft skills training approach was interesting as it was low cost, activity-based and relatively easy for participants to access (for detailed information on I-B see Annex 5). However, according to informants, questions remain concerning the training's long-term impact.

One key element of program efficiency was the progressive roll-out of the I-B soft skills training methodology at company level, with its emphasis on self-facilitated activity-based learning. The approach does not require the use of expensive external technical experts and facilitators, but instead build on the experience and active learning engagement of participants. Implementing partners highlighted this attribute of the approach, along with the ease with which it could be incorporated into wider company HR development frameworks.

Cross-cutting issues

Gender equality and non-discrimination is one of the ILO's core cross-cutting policy drivers. The focus of the WiS program puts logical gender equality considerations at the core of its design, implementation, monitoring and evaluation. It is already clear that a major factor that inhibits progress in some areas (and a reason for the shift away from the automotive sector in Indonesia) is the persistent influence of discriminatory gender-related social norms. Other cross-cutting policy drivers, set out in the ILO Strategic Plan, were not explicitly reflected in the current program design. These are international labour standards, tripartism and social dialogue and environmental sustainability. Furthermore, a reference to non-discrimination points towards the position of persons with disabilities, who – among other groups – experience discrimination in education, training and in the workplace.

Environmental sustainability (including green skills) is increasingly being integrated into ILO training design and is an important consideration for participating enterprises in light of national and global commitments. The ILO CO in Manila maintains a high profile as a leading agency on the greening of the economy and on green jobs. The WiS program has no reference to environmental issues.

Disability considerations are clearly an important factor for attention from a rights and inclusion perspective in any ILO engagement. Each of the three focus countries has ratified the International Convention on the Rights of Persons with Disabilities. The evaluation finds it encouraging to note that in Indonesia, the provisioning of sign language was included in the e-commerce training in the retail sector (as part of the program's COVID-19 response) to enable participants with hearing disabilities to join the training. Some partners. e.g., TESDA, had difficulties in reaching out to PWDs using on-line training because of the technological challenges. Some informants indicated that poor, marginalised groups often cannot afford to join on-line training because they cannot afford to pay for internet access and eventual needed software licences whereas they can join in person training at a lower cost. The International Labour Standards should be a crucial consideration in the quality of STEM-related employment, whereas social dialogue and tripartism are fundamental to the ILO's institutional make-up and work. However, it is notable that, beyond the idea of having a tripartite STEM platform TWG in the Philippines, there is no reference to the position and role of trade unions in the current program, even though trade unions have a well-demonstrated interest in training provision for their members. In the Philippines there is a long and successful tradition of strong tri-partite involvement in the management of the vocational training system. The evaluation finds that the WiS program did not use the potential of a tri-partite approach in full during development and implementation of the program. Many informants found that, from a long-term perspective, it would have been a strength if STEM skills' development for women would be governed with a tri-partite approach. The union representatives (except those involved through TESDA) felt that they had not really been involved with the project. They were invited to some presentations and launches but felt no real or active involvement at any stage. In Indonesia tri-partite structures were also in place for skills' development,

but according to governmental officials, the program did do not foresee a tri-partite involvement. The potential support from these institutions could be seen as a missed opportunity for the program. It is felt that the ILO should have made more effort to involve all three constituents in all skills' development and employment projects. Not all unions have policies and strategies on skills development. The trade unions found that the ILO could have supported them with expertise in such a policy development.

Recommendation 5:

Addressed to	Priority	Time frame	Resources
ILO/ACTRAV	High	Medium	Medium

The evaluation recommends that ACTRAV (together with other relevant departments) to look into the possibility of supporting trade unions in developing policies in the field of TVET and skills development. In a world of work, where technologies are changing quickly and Industry 4.0 is moving forward, it is highly important that the trade unions are able to provide quality and evidence-based input to the discussion based on adopted trade union policies. Many trade unions do not have such a clearly defined policy on skills' development.

Mid-term evaluation

The program initiated a follow-up to the recommendations provided by the Mid-Term Evaluation conducted in 2020. The MTE made four recommendations with more than 25 sub-recommendations. The large number of complex and very detailed recommendations might have been too complex and resource heavy for the program to respond to all realistically.

A major issue for the MTE was ensuring that a sustainability action plan was developed. The PM did not follow this up. Another recommendation was to ensure a strengthening of the trade unions' engagement with the project, but this materialised to a very limited extent only.

It was recommended that the outreach of the I-B program be expanded, through signing MoUs with EOs and industrial associations. This could be followed by efforts to ensure that I-B is included in companies' regular HR developmental activities. The program succeeded quite well in this, despite the challenges coming from the COVID-19 pandemic. The ECOT also suggested expanding the sectoral approach to include the healthcare sector. The sector is enthusiastic but take off was delayed.

A very important recommendation from the MTE targets ensuring that STEM is given priority in the public TVET system, with a special emphasis on recruiting more women to STEM-related training. The WiS program contributed to the process well and facilitated the establishment of a TWG in the Philippines to integrate STEM in the curriculum. There is now a political desire to do this in, e.g., in Indonesia, but the extent to which it will materialise is too early to predict. Linked to this, it is recommended that the public employment services contribute to the capacity building of staff . Here, action was taken to ensure some much-needed improvement.

The MTE was conducted during the COVID-19 pandemic, therefore is it natural that the challenges that arose from this were prioritised in the MTE's recommendations. The PM was very innovative in following up to the recommendations that related to the pandemic.

The MTE recommended ensuring that tri-partite meetings were held in the TWG in the Philippines. The program did not deliver on this, since the TWG took on a different role and composition than expected.

The MTE also recommended implementing the original idea of supporting the development of sector specific women in STEM action plans. The program made efforts to follow this up, but no concrete plans were developed.

The MTE suggested revisiting the initiative's initial ideas on the promotion of women into managerial positions in the STEM sectors, as well as their transition to employment which would also facilitate the job placement offices. It was also recommended that a regional mapping of all employment and skills initiatives, programs and projects be established. This mapping was not developed.

The MTE recommended an extension of the program, for at least three years, to enable the consolidation and sustainable embedding of progress, 2 concept notes were proposed to JP Morgan to which the response was to complete the current program first. However, the individually successful elements of the WiS program are continued in other projects.

Finally did the MTE suggest, to change the management structure it should further aim to maximise the potential for country-based staff to take on responsibility for program planning, implementation and resource allocation over the program period, within the overall program results, coordination and governance framework. Due to the pandemic and staff changes these suggested changes did not materialise.

4.4 Efficiency of resource use

Resource allocation

Most of the program's outcomes/outputs applies across the three focus countries, with each country having a strategic sector focus. However, as result of a preference indicated by the donor, a higher proportion of the program budget was directed to program implementation in the Philippines. All funds were spent by the end of the program. The spending was in line with ILO regulations and procedures as well as donor requirements and agreed budgets.

The evaluation finds the administrative support adequate. It was provided through dedicated full and part-time financial and administrative officers, funded by the program. The program staff was based within the respective ILO COs, enabling regular interaction with the Country Director and other staff. Technical resources and expertise were accessed from several sources. These included the specialist of the ILO DWT, training providers, the external consultants commissioned for delivery of particular program components and the existing technical expertise within partner agencies, organisations and companies. Available documentation and stakeholder feedback indicates that this was adequate to meeting the program's requirements. Where program indicators and targets were not met, the issue was not a lack of technical resources, but rather the impact of larger contextual and capacity factors. However, problems and delays arose in the recruitment of project staff because of time consuming recruitment procedures, and this caused some delays in the project's implementation. In general, constituents request technical support rather than money.

Given the ambition of the original program design, the available resources were relatively limited. USD 750,000 was provided to cover the first year of implementation, including analytical research and the establishment of partnerships, and a total of USD 2.4 million was made available across the focus countries for the overall program period. The payment of annual budget instalments was conditional on progress against KPIs. This affected the multi-year planning at a country level and conditioned the strategy the ILO developed to deliver outputs over the program's duration. Furthermore, it was reported to have affected staff turnover and led to the ILO issuing fixed-term contracts with a duration of often less than a year.

Recommendation 6:

Addressed to	Priority	Time frame	Resources
Donor	High	Long-term	Low to none

The release of annual budget instalments was conditional on progress against KPIs. This affected the multi-year planning at a country level and conditioned the strategy the ILO developed to deliver outputs over the program's duration. Furthermore, it was reported to have affected staff turnover and led to the ILO issuing fixed-term contracts with a duration of often less than a year. It is recommended to commit funding for the full program period to accommodate for a strategic approach in program implementation. ILO is recommended to avoid short-term contracts as fare as possible.

Thus, resource supplementation, through financial (e.g., scholarships) and in-kind contributions of partner agencies, was required to ensure that training activities could proceed at the agreed level. At the same time, it is apparent that the commitment of supplementary resources was an indication of the partners commitment to the program, thus constituting a potentially important factor in helping to ensure the sustainability of program's achievements. In the Philippines, the average cost per technical training, based on TESDA costings, was USD 600 per student. Thus, a total of USD 318,000 was required to fund the graduation of the 530 students targeted by the program. TESDA allocated initially 365 scholarship slots to be covered by its own resourcing, amounting to a contribution of USD 223,0000 for technical training alone. This is a remarkably high governmental own-contribution to an ILO project and indicates the relevance of the program.

Technical support for the design, development and implementation of the program was provided by the specialists in the DWT, through the role of the TO, rather than directly to the in-country program officers. This helped ensure coherence and to reinforce the oversight and coordination elements of the program's coordination role. Feedback from all levels indicated that this backstopping support was both responsive and effective. It also contributed to the key program design and planning decisions locally that were required as implementation progressed and as needs or issues became evident. The evaluation notes that not all of the national and regionally based specialists were involved or even aware about the project.

Monitoring

The program's management arrangements were found to be adequate, in ensuring effective program oversight, management and reporting.

In light of the extent of engagement with national EOs for the promotion and delivery of the I-B soft skills program, as well as the launch of the two national women in business and management publications, ACTEMP could have been more closely involved into all decision-making and advisory support at a regional level.

As concerns program governance, the PRODOC makes reference to the establishment of a regional Project Advisory Committee (PAC). This was envisaged as consisting of representatives of the relevant national ministries, sector business associations, the donor and the relevant ILO staff. However, the PAC was not established. The existence of such an oversight body, even if it met annually, could have helped to facilitate closer internal working relations between the concerned ILO regional units. More regular joint strategizing and planning at a regional ILO oversight level would have in turn enhanced the support given to the TO role. A PAC could likewise have contributed to creating stronger ownership of the overall program among constituents.

Regional and country-level program staff's feedback indicated clarity about their respective roles and responsibilities, with recognition of the scope that exists for local initiative based on contextual considerations. The allocation of space for the in-country teams to take initiatives was an important element in driving progress within the overall program scope and results framework.

A staffing imbalance existed across the three focus countries, with no dedicated national program staff in Thailand, two in Indonesia and one in the Philippines. The TO had responsibility for the Thai

implementation and partnership interactions. In the case of Indonesia, a double-program officer arrangement evolved due to the particular requirements arising out of the need to switch the strategic sector focus of the program and because of the absence of a national officer for a longer period of time during the second year of implementation. At a whole-of-program level, further data and feedback were gathered by the regional program coordinator for presentation to the ILO and donor in regular progress reports. Such reports were sex-disaggregated to the greatest extent possible and provided the basis for the annual adjustments that were made to targets and indicators, as agreed with the donor.

A specific Monitoring and Evaluation Plan was developed for the I-B soft skills component of the program. This revolved around the following key questions: Is the program helping women acquire and apply soft skills; is the program increasing women's employability?; is the program helping women gain better quality employment?; and does the program benefit the company/employer?
The MEP includes a ToC (attached as Annex 4) The ToC describes well the logic of the soft skills intervention and its expected outcomes. It was however reported that the MEP was not used for guiding the program implementation. The evaluation finds that it would have strengthened the program implementation if the MEP firstly had covered all elements of the program and secondly if it had been used for keeping the strategic view of the program.
Partly due to the many changes in the program and partly because of the strong focus on targets (numbers) the program implementation became activity based rather than outcome oriented.

The soft skills M&E approach used Qualtrics survey software which enables the efficient gathering and rapid presentation of sex-disaggregated, company and country specific data from participants' training feedback. As well as indicating immediate perceptions of individual benefits from the program, the feedback has proven useful for both ILO program team training design considerations and I-B promotional purposes. Qualtrics was also used for the DAV training in Thailand and it has the ability for follow up six- month feedback assessments.

Resource and knowledge leverage

Interviews with selected public and private implementing partners indicated a strong commitment to the program at all levels, which were linked at the policy level to government and corporate gender equality and diversity commitments. This was developed and fostered through active interaction with the program team at TO and country level. The partners' technical expertise was joined with that of the ILO in training design and delivery (e.g., the DSD in Thailand developed the DAV program). Partners also supplemented program resources through the provisioning of scholarships (TESDA) and of covering company costs for STEM-related technical and soft skills training.

In the Philippines, the reinforcement of the political, technical, financial and administrative engagement of key agencies, provided an important basis for the sustainability of program activities. A longer-term test in this context will be the extent to which program initiatives are carried forward through national budget and corporate resourcing, without any requirement for external resourcing, apart from ongoing technical support where necessary.

The evaluation notes that even though efforts have been made, potential remains for a stronger engagement with or incorporation of other relevant ILO programs at the regional and national levels. In the Philippines, this was linked to the Skills for Prosperity Programme for Learner-centered STEM in TVET, both in Malaysia and Philippines, with the Safe and Fair Programme for the #WOMENOFWSCANDOIT Scholarship Programme, with the EU Responsible Business Conduct Programme for Inclusion for Employers Launch with the Diversity and Inclusion Programme, and for YoungMakers Programme in Thailand for the Job Readiness Modules. The WiS program could also have engaged more strongly with other relevant regional initiatives to amplify its overall impact by identifying and leveraging synergies and sharing lessons and approaches. Multilateral and bilateral donors with a similar focus include the Asian Development Bank, the World Bank, GIZ and the

Australian Government. However, the Women in STEM Programme was linked by the donor, with the ADB Project on Promoting Transformative Gender Equality Agenda in Asia and the Pacific. The Women in STEM programme is part of the ADB Advisory Group for Women Entrepreneurship

In Indonesia and the Philippines, the national WiS program components were well integrated into the ILO's wider skills-related programming. In Thailand, the program constituted the major focus of skills engagement. The resulting synergies and mutual reinforcement contributed to overall program efficiency, impact and sustainability, through helping to maximise the efficient application of resources, through expanding stakeholder outreach and by ensuring that the lessons-learned were more widely shared. In all countries, the program is found to have contributed to both the strengthening of existing partnerships and to the initiation of new ones (e.g., the DICT in the Philippines and private sector companies in each of the focus countries).

The options and possibilities for tapping into national and company resources should continue to be explored, in order to support the continuation of the programs work and achievements. The evaluation was informed that the Federation of Thai Industries (FIT) and the Personnel Management Association of Thailand (PMAT) have indicated their interest in collaborating with the ILO on women in STEM promotion.

4.5 Impact Orientation and Sustainability

Capacity building

Although not reflected in the program design per se, the addition to the program in practice of the two national publications on women in business and management in Indonesia and the Philippines were highly relevant additions to the work. Both are reported to have attracted wide stakeholder interest and built on the program's partnerships with the respective national Business Coalitions for Women Empowerment.

ECOT found the WiS program activities relevant, and it was felt that it met the organisation and its members' needs. This even ECOT in the beginning of the program implementation was reluctant to buy-in to the program. ECOT plans to offer I-B to its members through its own training institutions. There is an increasing demand for soft skills training for workers in Thailand and I-B is seen as a cheap and efficient training approach, which can also be offered to low- and mid-level employees at either a reduced fee or free of charge. According to ECOT, their aim with I-B is to increase productivity and to inspire better collaboration at all levels. The soft skills training activities were ready to start up when the pandemic began, but everything was put on hold during the lockdowns. Around 20 companies have expressed interest in collaborating with ECOT on the delivery of soft skills training. ECOT would like to create further outreach and use this service for a membership drive.

The evaluation notes that some partners in Indonesia did not feel that the project had a clear direction, nor a deeper understanding of the aims of the WiS and its specifics compared to the general empowerment of women. IBCWE found that a clear and well-developed ToC could have helped to retain a clear focus on the program's objectives.

Private sector engagement

The Austrian and US embassies in the Philippines coordinated a project with the WiS program. A series of webinars on careers for women in STEM were also conducted in cooperation with DepEd, TESDA, DTI and DICT. This initiative is expected to contribute to the sustainability of the initiatives taken within the WiS program.

The buy-in to I-B by private companies must be seen as a success in bettering private sector support. The evaluation finds that the strongest support however comes from the planned inclusion of I-B elements into HR programs planned by several private companies.

Enabling environment

The program contributed to creating a situation where an enabling environment (laws, policies, people's skills, attitudes, etc.) for women's access to STEM skills is being strengthened.

In the Philippines, the DepEd now requests STEM subjects are included in training at Grade 11. The DICT decided to buy software licenses for animation trainees as an outcome of the experiences gained during the implementation of the WiS program.

The program provided an opportunity for former unskilled OFWs to become BPO professionals. This was especially important during the COVID-19 pandemic, and it gave the returned workers a chance to rebuild their lives.

The Thai authorities were made more aware of the potential of attracting women to STEM education and jobs; before that it was thought that men were more interested in technology.

In Indonesia both the government and private employers realised the potential for attracting a much-needed workforce from among women to the ICT sector, thanks to the contribution from the WiS program.

Higher level impact

The initial prioritisation of the automotive sector in Indonesia proved not to be viable and certain indicators for 'larger' change were also not able to be met (e.g., sector strategies and indicators for promotion and training/employment transition).

Initial engagement was opened up for soft skills engagement, with a new sector added in Thailand (healthcare) at the suggestion of ECOT. An additional component was added to the program through the ILO ACTEMP-led research and publications in Indonesia and the Philippines on women in business and management. The latter brought the global ILO Women in Business and Management agenda together with the Women in STEM agenda, contributing to a public commitment from two leading Philippines business groups to promote gender equality and diversity, with soft skills' development highlighted as an integral component of this.

The establishment of the TWG in the Philippines, which was foreseen to be a tri-partite platform, but which became an intergovernmental one, became a bridge between and among governmental agencies. The agencies used to work in silos where it came to STEM, but the TWG helped them to establish networks between themselves. As one official noted: "This project has created a platform that allows us to work together. The platform, which was not too formal nor informal that was facilitated by ILO, has brought together the involved government agencies that has its individual conflicting interests, positioning and turfing. This platform has provided us a neutral ground."

Sustainability

One key element of the program's sustainability strategy for its soft skills component is the taking on of responsibility, by national EOs, for the promotion and support of the delivery of the I-B program. Progress in this regard varies by focus country. The ECOP concluded an MOU with the ILO to take on such a role in the Philippines; here was agreement in-principle to move in this direction by APINDO in Indonesia; and a MoU was signed in March 2022 with ECOT in Thailand. The experience of ECOP illustrates the potential of I-B as both an important contributor to soft skills' development for women (and men) at a company level and as a promising element of membership services and expansion strategies. ECOP is still at the piloting stage of implementation. This will build on and incorporate ILO progress in engaging Philippines' companies in the I-B program. The ECOP has suggested a cooperation in the on-line training of facilitators for I-B soft skills training in Indonesia. ECOP likewise has introduced the I-B to their colleagues in the Pacific islands states.

In recognition of the growing demand across the business sector for enhanced soft skills for new and current employees, ECOP set targets for the engagement of members in I-B delivery and three sectors / business groups were prioritised for follow-up. These are the hospitality and ICT-BPM sectors via their respective EOs, and the Philippines Chamber of Commerce and Industry. MOUs are to be developed with each participating company and will inter alia specify what support will be provided by ECOP.

ECOP believes it is critical for the sustainability of the I-B soft skills training that it is integrated and certified by the National Skills' development programs, as this could open up the possibility that companies obtain tax reductions or governmental subsidies when implementing the training activities.

The identification of companies that function as carriers of ideas was a key element in the roll-out approach. The aim was that these companies would be long-term champions and "demonstrators" of the program, as well as a source of good practice advice and support for others. ECOP institutionalised I-B into the curriculum of its EO Academy to reinforce its sustainability. Although the I-B approach was seen as being relevant for everyone, ECOP intended to keep the gender-quality focus through a requirement that at least 50 percent of participants are women. As well as promoting and supporting the delivery of I-B via member companies, ECOP was also looking at availability via mixed company training groups. ECOP staff described I-B as a "game-changer" for helping to institutionalise its own gender and diversity commitments. They observed that the program and its approach added momentum, energy and visibility to internal efforts.

The PRODOC states that the program "will not seek to create new institutions, but rather to strengthen existing services and capacity, while building linkage between government, schools and placement offices and the private sector. As such the objective will be to have a highly sustainable impact, in that processes and service changes would continue." Overall, the orientation that was set out was aimed at setting a "mid- to long-term change in motion, through the creation of an institutional and workplace environment that supported women's career development and advancement in STEM-related jobs."

The program strategy had a clear underpinning impact and sustainability orientation. This orientation was evident in practice, as summarised below, although it had to be balanced alongside a pressing focus on meeting the targets agreed with the donor and managing the immediate impacts of COVID-19 in the last two years of the program.

Examples of program initiatives, partnerships and developments which held the promise of contributing to sustainability in key areas included the following:

- The establishment of the Philippines TWG to develop a multi-sectoral strategy for STEM workforce readiness and development. Although the active membership only consisted of relevant government entities, the intention was to develop it, step-by-step, into a tripartite platform to share approaches and plans; to propose actions for designing a STEM skills and employability action plan; to formulate a national strategy for the development of STEM skills for the current and future workforce; and to develop STEM policy recommendations for the relevant government committees, bodies or agencies. According to the PM, such a platform could play an important role in embedding the general STEM and specific Women in STEM agendas within the relevant national laws, policies, institutions, frameworks and processes. The evaluation notes that TESDA is already governed by a tri-partite board.

- Formalised agreements with ECOP, ECOT and APINDO for their ongoing promotion, coordination and support for the ILO I-B soft skills program within their respective memberships.
- The focus within the public TVET systems of Indonesia and the Philippines on mainstreaming STEM-related technical and soft skills within online and directly delivered training curricula, capacities and systems. In the Philippines, in response to TESDA's need for the pilot

implementation of the integration of STEM in TVET, the program in cooperation with the Skills for Prosperity Programme, developed an Updated Trainers Guide and Student Workbook which covers the following qualifications: Web Development, 3D Animation, Game Programming, Electrical Installation and Maintenance, Contact Center Services, Computer Systems Servicing, Aquaculture, Organic Agriculture Production, Cookery and Bread and Pastry . To complement this training, 251 trainers were trained for STEM in TVET training. An E-learning course was developed for TESDA trainers for Learner Centered STEM in TVET. This pilot implementation paved the way for the development of the TESDA Competency Based Curriculum for Area-Based Demand Approach, which provides a framework to integrate STEM skills into TVET programs.

- Women in STEM Indonesia designed and pioneered the training on e-training development and delivery targeting BLKs/BBPLKs/BLKKs instructors, which received positive feedbacks from the Ministry of Manpower and the instructors. Learning from this experience, Ministry of Manpower is in the process of integrating the training into its e-platform for their future training modality. Ministry replicated and continued the training with INSIGHT-2 Project for selected instructors, namely instructors of 28 training programmes that are currently being converted into blended/e-training. The training targeted 99 instructors. The positive learning experience led to the recognition by UNESCO-UNEVOC as a good practice for building up capacity.
- Web development training provided skills with the standards required by ICT industry. Hence, Axioo Class Program (ACP), Women in STEM's Indonesia's industry partner, plans to continue providing web development training due to the increasing demands for programmers in Indonesia. ACP has also used the completion of Web development training as a substitute for competency evaluation for software development major in vocational high schools (SMKs) that collaborate with ACP for the competency exam (Ujian Keahlian Kompetensi, UKK). Moreover, having recognized the quality of ILO's Ready for Business (R4B) modules that were used in the work readiness training phase, ACP plans to incorporate the module in their entrepreneurship curriculum synchronisation with more than 500 SMKs
- The adaption of technical and I-B soft skills training for online modalities in each of the three countries. This included the provisioning of technical and capacity development support within both the public/TVET and private company contexts, in areas such as online training design, development and delivery. Some issues were identified with the quality of the training; i.e. access to the necessary ICT infrastructure and the need to take into account some trainees' access to the necessary technology and a supportive learning environment. However, the overall public and private sector feedback indicated that e-learning is 'here to stay' and will be an important component of future-mixed training approaches.
- Efforts to facilitate links between relevant government entities, public TVETs and business in the three focus countries, which contributed to the design of training initiatives and strengthened the basis for increased business engagement in TVET design and delivery. Examples included the business sector input into the design of the DAV training program in Thailand and the TVET STEM-related technical training programs in the Philippines. Such linkages were reinforced in Indonesia by an MOU that was developed with the combined support of BBPLK-Bekasi (the country's preeminent national TVET institution) and the Ministry of Manpower. Although progress was relatively limited, both APINDO and ECOP highlighted this area as a priority for increased attention in light of private sector concerns about the inadequate skills levels of many public TVET graduates in a rapidly evolving job market. The business interlocutors interviewed by this evaluation also highlighted the need for a more rapid development of training curricula and approaches to reflect the rapidly evolving ICT industry. They saw increased business input into TVET design and delivery, along the lines of that being fostered by the program, as essential in this context. However, the ILO should advocate that this development is governed by a tri-partite approach.

- DAV became an integrated part of DSD's national skills training program and workers (male and female) could sign up and participate nationwide in Thailand. However, a need exists for a stronger involvement of provincial authorities to ensure that financing is allocated. A number of academic institutions will provide the training. It should be noted that DSD does not see the training as a key priority and funds have not been allocated or committed to it. Its sustainability will also depend on the availability of certified training instructors across the country.
- Seagate Technology in Thailand has made step to integrate the I-B soft skills program into their wider HR development framework, and Teleperformance, a major company in the Philippines IT-BPM sector is interested in doing the same. In the latter case, the I-B vision-setting module was seen as a potentially standard alone for all trainees, with a customised set of modules to follow, in line with employee roles and expectations within the company. Moving in this direction is seen as offering a greater possibility of an increased volume of training being delivered; as well as the likelihood that trainees can use company time (currently training is carried out in personal time in many companies). It also offers links with existing company training to promote gender equality as well as pipelines for the promotion of women and the tracking of the career development of training participants. At the same time it was noted that offering the I-B program more broadly to women and men would help facilitate its integration into the company HR development framework.
- DAV, in Thailand, made steps towards influencing and extending national competency standards through the development and application of program level standards as well as engaging with national competency and standards officials in the Philippines, to look at the integration of STEM-related skills and requirements in TVET.
- Thailand – development of hybrid online DAV for Manufacturing Course for people with disabilities and disadvantaged female youth, a collaboration the Young Futuremakers Thailand project. A joint effort with DSD and training institution (in charge of adapting the DAV for Manufacturing Course to suit the Thailand context) and piloted at schools supported by the Department of Empowerment of Persons with Disabilities of the Ministry of Social Development and Human Security.
- One 'unanticipated' indication of longer-term influence of the program was the inclusion of a commitment to soft skills' development in a 'Call to Action: Diversity and Inclusion at the Center of Business Leadership' jointly issued on 23 September 2020 by the ECOP and the Philippines Business Coalition for Women Empowerment (PBCWE). This was made public during the launch of the ILO Report on 'Leading to Success: The Business Case for Women in Business and Management in the Philippines' in Manila, and which was supported by the WiS program. Linked to this initiative and to ongoing work between ILO-ACTEMP and PBCWE on gender equality and women's empowerment, ECOP announced the formation of a Diversity and Inclusion Committee. This committee is seen as a key driver for institutionalising I-B soft skills and other gender-based trainings within member companies.[24]

One area mentioned in the PRODOC which is relevant to sustainability is building linkages with job placement offices, to support the training-to-employment transition. It is not surprising that this area was not evident in program implementation and partnerships as it was not specifically reflected in the results framework and it would require extensive additional engagement to build the necessary relationships and design the approach. The ILO has engaged with public employment services in other

[24] ILO. (29 September 2020). Call to Action: Employers Confederation of the Philippines leads call for diversity and inclusion at the center of business leadership. Available at https://www.ilo.org/actemp/news/WCMS_756535 /lang--en/index.htm

countries of the region, but no specific programs with this particular orientation were in place in the program's three focus countries.

The implementation of the program did not see any changes initiated in national laws or policies, although the aim of the Philippines TWG was to create a sustainable basis for just this purpose. Changes in national competency and/or qualification frameworks would constitute an important program contribution and were foreseen in the PRODOC and agreement with the donor. The integration of STEM-related soft skills into the national competency framework is also on the agenda.

Although it is too early to identify the longer-term impact and sustainability of technical and soft skills training, initial anecdotal feedback from selected corporate partner training personnel indicates an attitudinal change among key HR staff around both the importance of increasing the number of women in STEM-related employment and the critical place and value of soft skills in the current rapidly evolving labour market in each of the focus countries.

Integration of STEM in TVET programs was according to TESDA the greatest goal TESDA had for its participation in this project. The ILO sponsored workshops for Curriculum developers and teachers which led to the development of TESDA's, "Manual for the Development of Competency-based Curriculum" launched June 2022. This manual is being widely disseminated by training Curriculum developers in using the manual for developers to contextualize STEM into curriculum. Through the "Area-based Demand Driven" initiative of TESDA, the industry, academe and other stakeholders were convened together to develop STEMified TVET Programs that are in-demand in their areas of jurisdiction. Through CISTEM, TESDA also aimed to integrate STEM into the training materials of trainers, thereby enhancing existing modules with learning activities integrated with STEM. Furthermore, to actually utilize the materials, a pilot study was undertaken to utilize these materials in actual teaching and learning activities while training learners' technical vocational skills.

TESDA is also developing its own STEM Framework that will integrate STEM in all its processes such as: Competency Standards development, Curriculum Development, Training, Assessment Tools Development and the conduct of Assessment and Certification in partnership with the academe, the industry sector and government agencies. With this, integration of STEM in TVET will be intentional rather than superficial.

TESDA has indicated that they see the STEMifying of TVET as crucial. In the Philippine Qualifications Framework, WiS provided TESDA with concept on lifelong learning and so the competencies in the basic education which are primarily on STEM, should be enhanced at the TVET and higher education. TESDA wants to provide high quality competencies of technicians and engineers and other areas of discipline. The President-elect has also mentioned that he wants to bolster agriculture as well as STEM in education. TESDA wants to institutionalize the STEM project in order to come up with a robust system in re-echoing this and roll out and deploy the manual on STEM. It has according to the TESDA DDG to be a way of life of the trainers and the learners.

In the meantime, evaluative feedback – gathered through a Qualtrics survey system of 17.000 technical and soft skills training participants, across some 30 companies, in the three countries – indicated that the training modules were well-received, with high levels of satisfaction overall and positive learning outcomes indicated.[25] Likewise, a high proportion of trainee supervisors reported behavioural changes as a result of training that was conducted.[26]

[25] Six types of surveys were conducted in the focus countries, namely, baseline, midline, end-line, post-training, supervisor and technical post-training.

[26] Linda Vega Orozco. (1 October 2020). Data analysis of trainings conducted through ILO's Women in STEM Programme. ILO

The programme approach and experience demonstrate the importance of investing in partnership development from the beginning as a key element of longer-term sustainability: A key longer term indicator of sustainability in this context is the degree to which the women in STEM agenda is driven locally and financed through the national budget (including via ministries of education and labour) and corporate resources. Programme implementation demonstrated both of these factors beginning to emerge.

Looking ahead to the measures to ensure the sustainability of achievements of the WiS program, the Skills for Prosperity Program offers a framework within which women and STEM initiatives and perspectives can plausibly continue to be promoted and implemented. This is particularly the case in the Philippines, where there is an overlap in priority focus on the IT-BPM sector. Furthermore, the Women in STEM program contributed to the incorporation of STEM into local SfP-SEA design. This is particularly the case in the Philippines, where there is an overlap in priority focus on the IT-BPM sector in 2021 alone, there were 900 women migrant workers who graduated from the scholarship programme in the National Capital Region and Cebu.

On the private sector side, the STEM Alliance Ph informed that the WiS program provided impetus to expand Unilab Foundation's Pinays Can STEM initiative primarily focused on girls in education also to include women in STEM jobs/careers. This contributed to the foundational work with the Philippine Commission for Women in advocating for STEM and supporting women in STEM jobs/careers.

Other partners that came in as well were the Embassy of the United States of the Philippines. The Embassy of the United States of the Philippines provided to TESDA its English for STEM courses to support its STEM in TVET agenda, and also supported the training of TESDA trainers nationwide on conducting massive open online courses (MOOCs) that can enable them to run trainings for huge numbers of learners for the completion of online courses. According to the US Embassy, the program helped introduce new U.S. Government-funded resources to TESDA and the American Corners to different ILO partners/stakeholders. They noted that even with a strong campaign to promote and encourage more women in STEM education and careers, there needs to be continuous engagement with different stakeholders like employers, businesses, education leaders, curriculum developers, and media. They shared that the activities conducted such as the series of 'Hidden Figures' film screenings connected to a range of audiences including women and girls in conflict-affected areas of Mindanao, and where gender equality is an issue. It helped bridge gaps in perspectives and helped open avenues to exchange ideas and opinions and open opportunities for women to voice out their concerns and challenges in entering into STEM education and careers. Other emerging partners was the Austrian Embassy that conducted a Women in STEAM science diplomacy workshop with the Women in STEM programme and the UP Center for Integrated STEM, in celebration of the UN International Day of Women and Girls in Science in 2022.

5 Conclusion and Recommendations

5.1 Conclusion

The evaluation finds that while the programme design was found to be too ambitious in some key areas, it has enabled the development of a public and private partnerships and seen some significant developments with respect to STEM-related technical and soft-skills training provision as well as public TVET institutional strengthening as it was reported. The programme's reorientation in the COVID-19 context was well managed in close consultation with partners and donor. The pandemic forced the project management to look for alternative solutions keeping focus on sustainable capacities, training content and systems for online learning in public and private sector settings. The evaluation is convinced that the on-line training will remain an important element of future training provision for the institutions and companies concerned especially seen in the light of fast-moving digitalisation of all economic sectors. This said almost all stakeholders emphasises that on-line training cannot deliver quality training in all settings and on all subjects. Experiences harvested during the current program can be of great value for all involved when developing new initiatives. Some informants finds that a mix will prevail in the future as on-line training has shown its potential but also its limitations.

The program contributed well to meeting DWCP, country and global outcomes in the field of skills development and increased employability of women in STEM related industries. There is however still a lot of challenges ahead to achieving an inclusive labour market. The evaluation would like to highlight the inclusive approach taken by the project in reaching out to people living with hearing disabilities.

From an efficiency perspective, the programme has leveraged and supplemented limited human and financial resources to good effect and has managed well to attract additional resources from both governmental and private sector, among others with the self-facilitated ILO I-B soft skills model which became a flagship of the program demonstrating an ability to effectively engage large numbers of employees at a low cost. It is too early to adequately assess longer term training and capacity developments impacts, a foundation for these has been created but to become sustainable and a real game changer further intervention beyond the lifetime of the program are needed.

The program has managed to engage the employers' organizations in the three target countries in scaling the I-B training modules. They are now offering the training as a service to their members and use I-B for membership drive. Several private companies are reporting that they plan to include some I-B modules in their regular HR development activities. There are indications that the I-B training trigger increased productivity and improved quality of production. These are great successes for the program, but the evaluation finds that for securing sustainability and continued employee engagement and enthusiasm the employees need to see some more concrete benefits for themselves through promotion and increased salary.

The program demonstrated strong flexibility also when it comes to addressing the challenges for technical (hard skills) training during the COVID-19 pandemic. A strong engagement with relevant governmental institutions created good, very much relevant, and timely initiatives especially in the ICT sectors.

The evaluation finds that many changes were made (mainly caused by the COVID-19 pandemic) in program outcomes, outputs and targets. These changes drove to a certain extent the program away from its original objectives and it became a more activity focused program, which within this framework reach remarkable good results even the original objectives were met to a lesser extent.

5.2 Recommendations

The evaluation has the following Recommendations for eventual future interventions in the field of women in STEM training and employment.

Recommendation 1

Addressed to	Priority	Time frame	Resources
ILO	High	Long-term	None

The ILO is recommended to secure a stronger evidence-based program design that builds on the collective knowledge and experience of the national constituents and national and international experts. This might avoid a situation, such as occurred in the WiS project, where constant changes (beyond those obliged by the COVID-19 regime) were needed.

Recommendation 2

Addressed to	Priority	Time frame	Resources
ILO	Medium	Long-term	Medium

The intent of the original objective remains valid as part of a holistic and comprehensive approach to promoting women in STEM and should be considered within the context of possible new and renewed regional and/or national skills' development, enterprise development and gender equality programs.

Recommendation 3:

Addressed to	Priority	Time frame	Resources
ILO	Medium	Long-term	Low

The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and/or apprenticeships, but this did not materialise in full. The ILO is recommended to give priority to further development of its efforts for promoting mixed theoretical and practical training for VET/TVET students.

Recommendation 4:

Addressed to	Priority	Time frame	Resources
ILO	High	Long-term	Low

The ILO is recommended to give priority to trainees getting insight into their basic rights and relevant information on occupational health and safety – also for working from home (e.g., ergonomics) and partners should be encouraged to ensure that the offered jobs are decent jobs.

Recommendation 5:

Addressed to	Priority	Time frame	Resources
ILO/ACTRAV	High	Medium	Medium

The evaluation recommends that ACTRAV (together with other relevant departments) to look into the possibility of supporting trade unions in developing policies in the field of TVET and skills development. In a world of work, where technologies are changing quickly and Industry 4.0 is moving forward, it is highly important that the trade unions are able to provide quality and evidence-based input to the discussion based on adopted trade union policies. Many trade unions do not have such a clearly defined policy on skills' development.

Recommendation 6:

Addressed to	Priority	Time frame	Resources

Donor	High	Long-term	Low to none

The release of annual budget instalments was conditional on progress against KPIs. This affected the multi-year planning at a country level and conditioned the strategy the ILO developed to deliver outputs over the program's duration. Furthermore, it was reported to have affected staff turnover and led to the ILO issuing fixed-term contracts with a duration of often less than a year. It is recommended to commit funding for the full program period to accommodate for a strategic approach in program implementation. ILO is recommended to avoid short-term contracts as fare as possible.

Annex 1: Lesson Learned and emerging good practises

Final Evaluation of "Women in STEM Workforce Readiness "(Women in STEM) Program

Project DC/SYMBOL: **RAS/17/04/JPM**
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Date: 08 August 2022

The following lesson learned has been identified during the course of the evaluation. Further text explaining the lesson may beincluded in the full evaluation report.

LESSON LEARNED ELEMENT	TEXT
Brief description of lessons learned (link to specific action or task)	Due to the COVID-19 pandemic all training activities were transferred to on-line training. Training materials were redesigned to fit to the new training approach. For short trainings that span for a few hours, this can be effective. But for most training activities, the physical face-to-face training is preferred. A relatively high level of drop-out from the training was reported. One training provider reported that in training with physical presence the success rate was 50 out of hundred, whereas when on-line training was used the success rate was down to 20.
Context and any related preconditions	It appears that also the subject of the training has an impact on the success rate as there are subjects with a more "natural" on-line link ex. training in e-commerce. Other subjects as interpersonal communication and teamwork will benefit from training with physical presence.
Targeted users / Beneficiaries	The target users are the trainees but also the companies where they are employed will benefit from higher quality in outputs and a higher attendance among trainees.
Challenges /negative lessons - Causal factors	During the pandemic on-line training was given priority as this was the only option, but some training providers also see this as a very cheap way to conduct training, but a lesson learned is that the quality in many cases suffer from the lack of physical presence. It is also reported that the on-line training might exclude some of the most vulnerable groups as they cannot afford the needed hard- and software required for the training.
Success / Positive Issues - Causal factors	The on-line training is cheap for the training providers and can help to a larger geographical reach out.

ILO Administrative Issues (staff, resources, design, implementation)	The ILO should use the on-line training as much as possible but also be critical towards its limitation

Final Evaluation of "Women in STEM Workforce Readiness "(Women in STEM) Program

Project DC/SYMBOL: **RAS/17/04/JPM**
Name of Evaluator: Sten Toft Petersen, International Consultant,
Rita Tambunan, National Consultant Indonesia,
Kuanruthai Siripatthanakosol, National Consultant Thailand
Salic Sharief Jr., National Consultant Philippines

Date: 08 August 2022

The following emerging good practice has been identified during the course of the evaluation. Further text can be found in the full evaluation report.

GOOD PRACTICE ELEMENT	TEXT
Brief summary of the good practice (link to project goal or specific deliverable, background, purpose, etc.)	Disability considerations are clearly an important factor for attention from a rights and inclusion perspective in any ILO engagement. Each of the three focus countries has ratified the International Convention on the Rights of Persons with Disabilities. The evaluation finds it encouraging to note that in Indonesia, the provisioning of sign language was included in the e-commerce training in the retail sector (as part of the program's COVID-19 response) to enable participants with hearing disabilities to join the training. This kind of initiatives can help to open for a more inclusive labour market and especially people with hearing disabilities have good chances for entering the labour market as the digitalisation is progressing in all sectors of the economy.
Relevant conditions and Context: limitations or advice in terms of applicability and replicability	The inclusion of sign language in on-line training activities is today not so much a technical challenge more an economical priority decision but with new digital solutions developing it would be a realistic cost to cover in most programs and projects.
Establish a clear cause-effect relationship	Training conducted with sign language added will increase the employability of people with hearing disabilities and also increase their career perspectives.

Indicate measurable impact and targeted beneficiaries	The impact can be measured in an increased number of people living with hearing disabilities getting a job.
Potential for replication and by whom	The ILO can introduce the practice in all programs and projects, and it will be easy for other agencies and partners to introduce the same if this is given priority.
Upward links to higher ILO Goals (DWCPs, Country Programme Outcomes or ILO's Strategic Programme Framework)	The introduction of sign language will support the ILO's overall orientation towards an inclusive labour market.
Other documents or relevant comments	Program Performance Reports

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Date: 08 August 2022

The following emerging good practice has been identified during the course of the evaluation. Further text can be found in the full evaluation report.

GOOD PRACTICE ELEMENT	TEXT
Brief summary of the good practice (link to project goal or specific deliverable, background, purpose, etc.)	The In-Business soft skills M&E approach in this program used Qualtrics survey software which enables the efficient gathering and rapid presentation of sex-disaggregated, company and country specific data from participants' training feedback. As well as indicating immediate perceptions of individual benefits from the program, the feedback has proven useful for both ILO program team training design considerations and In-Business promotional purposes. Qualtrics was also for the hard-skills Data Analytics and Visualization for Manufacturing training in Thailand. The Qualtrics has the ability to be used for follow-up with six- month feedback assessments this allows for a good insight in training impact and sustainability assessment.

Relevant conditions and Context: limitations or advice in terms of applicability and replicability	The assessment of training conducted in the last year of a program/project might not be possible without a mechanism in the ILO M&E framework that allow for follow-up after six months even beyond the lifetime of a given program.
Establish a clear cause-effect relationship	If feedback from beneficiaries is collected and assessed it will allow for correction of on-going and possible future interventions.
Indicate measurable impact and targeted beneficiaries	The impact can be measured in the effectiveness of the interventions.
Potential for replication and by whom	The Qualtrics software can be used in relation to all ILO and partner capacity building activities.
Upward links to higher ILO Goals (DWCPs, Country Programme Outcomes or ILO's Strategic Programme Framework)	The improved impact assessment can make the ILO interventions more efficient and by that contribute positively to meeting DWCP, CPO and other strategic goals.
Other documents or relevant comments	Program Performance Reports and Qualtrics data.

Annex 2: Documents reviewed

The evaluation was provided a large amount of document these are all available on:
https://drive.google.com/drive/folders/1JqvQLE55ur8dED5ie_sCMejOK1Vi9AZu
Please find below a list of the key documents reviewed:

General programme documents

- ILO Project Document: Women in STEM Readiness Programme (undated).
- JP Morgan Chase Foundation Grant document
- JP Morgan Grant document with amendments
- JP Morgan Guidelines
- Progress Reports: ILO format
- Progress Reports: J.P. Morgan format.
- Workplans for Indonesia, Philippines and Thailand.
- Qualtrics data

Soft skills programme documents

- Linda Vega Orozco. (1 October 2020). Data analysis of trainings conducted through ILO's Women in STEM Programme. ILO.
- Job Preparation Training Programme for Women in STEM. Training Guide, Philippines.
- M&E Plan for "Women in STEM Workforce Readiness and Development Programme: Soft Skills component through enterprise-based training.
- MoUs signed with companies and EOs
- Investing in people's capabilities. Women in STEM Workforce Readiness and Development Programme.
- Impact evaluation of the In Business program
- Training tool kit for recruiting and job readiness (Philippines)
- In Business soft skills modules
- Link to traffic data on knowledge sharing platform
- Case study (video)
- In Business downloads

Technical skills programme documents

- ILO STEM in TVET Curriculum Guide
- ILO-TESDA Online Job Readiness Course
- Job preparation Trainers Guide and Student workbook developed in the Philippines with selected accredited TVETs from TESDA.
- TESDA Competency Based Curriculum Guide
- Summary report with training feedback following the job readiness module. Design of a Competency based Training Curriculum on Data Analytics for Women in Manufacturing: Pilot Initiative for the Electrical and Electronics Sector in Thailand.
- Training Program for Operators in the Electronics sector: "Data analytics and visualization for manufacturing."
- Clevio: Training evaluation report: E-training in 'Business coaching for E-Commerce' and 'Online Store Administration,' Indonesia.
- Training evaluation report: "Training of Content Creation and Delivery of Online Training for BLK Instructors stage 1," Indonesia
- Case study on the E&E sector in Thailand.

Programme research documents

- Mapping of Skills and Career Opportunities for Women in Automotive Industries in Indonesia.
- A Rapid Assessment of ICT Skills Demand in Indonesia.
- IBPAP Empowering Women in STEM: The IT-BPM Case. Skills and career mapping for women employment and career progression in the Philippines IT-BPM sector.

- Leading to Success: The business case for women and management in Indonesia
- Leading to Success: The business case for women and management in Philippines
- Labour Market Analysis for ICT Courses at BBPLK Bekasi: a Desk Research Report.

Programme regional meeting report/strategy documents

- Report on Regional Experts Meeting on the Future of STEM Education and Training in TVETs in South-East Asia
- Discussion paper for Regional Experts Meeting on the Future of STEM Education and Training in TVETs in South-East Asia

Additional research documents /references

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- Government of Indonesia. Making Indonesia 4.0. Available at https://oxfordbusinessgroup.com/analysis/technology-comes-four-making-indonesia-40-seeks-strengthen-digital-economy-and-attract-foreign
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- ILO. (2020). Decent Work Country Programme, Indonesia. Available at https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/departments-and-offices/program/dwcp/WCMS_560738/lang--en/index.htm
- ILO. (29 September 2020). Call to Action: Employers Confederation of the Philippines leads call for diversity and inclusion at the center of business leadership. Available at https://www.ilo.org/actemp/news/ WCMS_756535 /lang--en/index.htm
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- ILO Women in Business and Management. The business case for change: Country snapshots. Available at https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_702188.pdf
- Investing in Women. Advancing women in STEM for the future of work. Available at https://investinginwomen.asia/posts/advancing-women-in-stem-for-the-future-of-work/
- NEDA, Philippines. Available at http://www.neda.gov.ph/philippine-development-plan-2017-2022/
- Philippines Commission on Women. Refer to https://www.pna.gov.ph/articles/1114871
- Philippines Commission on Women. Magna Carta of Women. Available at https://pcw.gov.ph/republic-act-9710-magna-carta-of-women/
- Job Readiness Guide (PH) E-Learning Course: https://e-tesda.gov.ph/course/index.php?categoryid=811
- Research Briefs: Philippines / Indonesia
- https://investinginwomen.asia/posts/iw-ilo-research-demonstrates-business-case-women-business-management-indonesia-vietnam-philippines/
- https://www.ilo.org/manila/publications/WCMS_755607/lang--en/index.htm
- https://www.ilo.org/manila/public/sp/WCMS_756618/lang--en/index.htm
- HARD SKILLS: Technical skills programme documents (Philippines)
- Job preparation training module developed in the Philippines with selected accredited TVETs from TESDA (with DICT support).
- Job Preparation Training Programme for Women in STEM. Training Guide, Philippines, 2019.
- Summary report with training feedback following the job readiness module.
- Assessment report – Learner-Centered STEM in TVET, ILO-UK Skills for Prosperity Programme

Annex 3: List of key informants

	Region/Country	Name	Position	Organization, Institution, Project/Programme
1	Thailand	Chinapop Kooramasuvan	Officer	Ministry of Labour
2	Thailand	Yaowalak Kongsee	Foreign Relations Officer	Ministry of Labour
3	Thailand	Kornchai Kaewmahawong	Executive Director	Employers' Confederation of Thailand'
4	Thailand	Ukrish Kanchanaketu	Executive Director	Employers' Confederation of Thailand'
5	Thailand	Pongthiti Pongsilamanee	Deputy Secretary General	State Enterprises Workers' Relations
6	Thailand	Wanwanut Boongsood, PhD	Assistant Professor	Suranaree University of Technology
7	Thailand	Prasert Aebgchuan, PhD	Lecturer	Suranaree University of Technology
8	Thailand	Woranut Lawanont, PhD	Lecturer	Suranaree University of Technology
9	Thailand	Ruttiya Bhula-or, PhD	Assistant Professor	Chulalongkorn University
10	Thailand	Nitima Lerdkaew	Trainee/Management	Seagate
11	Thailand	Cattreeya Thithiwongsawet	Trainee/Management	Seagate
12	Regional/Thailand	Anjali Patel	Technical Officer	ILO project in Lao PDR
13	Regiona/Thailand	Mattie Milliken	Consultant - InBusiness	EXCOL
14	Thailand	Jittima Srisuknam	Programme Officer	DWT/CO-BANGKOK
15	Philippines	Linartes Viloria	Officer	Rebuilding Better
16	Philippines	Marcial Anguluan Jencel	Consultant - InBusiness	WIS
17	Philippines	Luigi De Vera	Consultant - Hard Skills	WIS
18	Indonesia	Navitri Putri Guillaume	Officer	ILO project in Indonesia
19	Indonesia	Santy Otto	Officer	EXCOL
20	Regional	Wade Bromley	Employers Activities Specialist	ACTEMP
21	Regional	Charles Bodwell	Enterprise Development Specialist	DWT/ENTERPRISES
22	Indonesia	Mr. Syamsi Hari	Director	Bina Intala (Directorate of Instructors Training), Ministry of Manpower
23	Indonesia	Ms. Irma Adyatni	Instructor	Tabalong South Kalimantan TVET Centre, Ministry of Manpower
24	Indonesia	Mr. Hamam Fajarudin	Instructor	Girikesumo Community TVT Centre
25	Indonesia	Mr. Muhammad Adenin	Head of sub-division of Empowerment	BBPLK Bekasi, Ministry of Manpower
26	Indonesia	Ms. Maya Juwita	Executive Director	Indonesia Business Coalition for Women Empowerment (IBCWE)
27	Indonesia	Ms. Zelda Lupsita	Program Manager	IBCWE
28	Indonesia	Mr. Tedi Subagia	Partnership Manager	IBCWE

29	Indonesia	Siska Oetami	CEO	Clevio
30	Indonesia	Timmy Theopelus	Education Program Director	Axioo
31	Indonesia	Nurul Afifah (Nurul)	Former trainee	Had internship after the training, university student, based in Central Java, now part-time working as website administrator at her campus.
32	Indonesia	Muflikhah Isna Nuraini (Isna)	Former trainee	Had internship after the training, a Final year university student based in Yogyakarta.
33	Indonesia	Sabrina Syaugi (Sabrina)	Former trainee	University graduate, based in Jakarta.
34	Indonesia	Aisyah Mukti Pratiwi (Aisyah)	Former trainee.	Final year student of Vocational High School in West Java
35	Philippines	Antonio Asper	Vice President	FFW
36	Philippines	Rior Santos	Director	Department of Information and Communications Development (DICT)
37	Philippines	Florencio F Sunico, Jr.	Regional Director	TESDA
38	Philippines	Nina Todd	Project Development and Management Officer	TESDA-NCR
39		Carlos san Victores	Executive Assistant	TESDA-NCR
40	Philippines	Jocelyn Cabahug	Project Development and Management Officer	TESDA Region 7
41	Philippines	Mark Manaois	Senior Education Specialist	DEPED Bureau for Learning Development
42	Philippines	Anna Liza Chan	Senior Education Specialist	DEPED Bureau of Curriculum Development
43	Hong Kong	Cecilia Mok	Associate	Global Philanthropy Asia Pacific – JP Morgan
44	Philippines	Darwin Moya	HR Executive	Nestle Philippines
45	Philippines	Boots Garcia	Chairperson	PBCWE
46	Philippines	Ana Marie Bobadilla	Partnerships Manager	Philippine Women Economic Network
47	Philippines	Windy Tuason	Group Training Manager	PHINMA Microtel Hotels
48	Philippines	Cecilia de Omampo	Business Planning Advisor	IBM Philippines
49	Philippines	Sandy Carina Noche	Senior Team Leader, Supply Chain Analytics	Emerson Philippines
50	Indonesia	Hirania Wiryasti	Project Officer	InSIGHT2
51	Regional/Thailand	Suttida Chaikitsakol	Officer	Regional Skills Programme
52	Regional	Akiko Sakamoto	Regional Skills & Employability Specialist	SKILLS
53	Regional	Dong-Eung Lee	Employers Activities Specialist	ACTEMP
54	Philippines	Khalid Hassan	Director	CO-MANILA
55	Philippines	Ma. Concepcion Sardana	Senior Programme Officer	CO-MANILA

56	Indonesia	Tendy Gunawan	Programme Officer	CO-JAKARTA
57	Indonesia	Kazutoshi Chatani	Employment Specialist	CO-MOSCOW
58	Indonesia	Ms Michiko Miyamoto	Director	CO-JAKARTA
59	Indonesia	Mr. Amir	Head of sub-directorate for trainers	Directorate for Instructors and Training Personnel. Directorate General for Vocational Training and Productivity Development
60	Philippines	Mr Roland Moya	Director General	ECOP
61	Philippines	Ms Abigail Roxas - Gorospe	Manager, Advocacy & Research	ECOP
62	Regional	Pong-Sul Ahn	Workers Activities Specialists	ACTRAV
63	Thailand	Felix Weidenkaff	Employment Specialist	DWT Bangkok

Total informants: 63

Female: 34

Male: 29

Annex 4: Theory of Change for "Women in STEM" soft skills

Process	Facilitator trainer, training materials, peer-learning materials, cooperation of firm	Select appropriate facilitators and participants Facilitator training Peer-learning	Facilitator training completed and facilitators are engaged Peer-learning completed and participants are engaged	Workers feel valued, workers feel they have a voice, workers acquire and apply soft-skills	Increased employability, better quality employment, increased profitability and stability of the firm
Indicators	MOU signed	Number of facilitators and participants selected, type of facilitator and participant (job level, gender)	Number of facilitators present at training Number of participants present at peer-learning session Percentage of facilitators actively listening and participating Percentage of participants actively listening and participating Worksheets are filled-in	Self-reported satisfaction with job, firm, and training Recall of skills taught Frequency of application of skills taught to work Self-reported improvement in work relationships Increased work attendance, retention (lower turnover) Increased work motivation	Self-reported satisfaction with job, firm, and training Number of redundancies, retention rate, number of job offers received Improved benefits or salary Self-reported improvement in work relationships Increased work attendance, retention (lower turnover) higher productivity, less down-time, talent development, quality improvement
Assumptions		Firm is willing to and genuinely interested in training their workers	Able to measure active listening and participation Active listening and participation is correlated with acquiring the skills taught	Participation in training increases motivation and satisfaction.	Application of skills taught lead to increased productivity, less down-time, quality improvement Higher motivation leads to higher productivity

Annex 5: Key elements of ILO In Business soft skills training

Source: Investing in people's capabilities. Women in STEM Workforce Readiness and Development Programme. Powerpoint presentation by Jordi Prat Tuca, Technical Officer - Enterprise Development and Skills, ILO Decent Work Technical Support Team for East and South-East Asia and the Pacific. Bangkok. ILO.

The following summary presents key components of the ILO In Business soft skills training programme promoted and applied by the Women in STEM programme.

1. 14 modules available for participating firms (3-4 hours of training per module)

- Vision-setting
- Creative thinking
- Problem solving
- Teamwork
- Reaching consensus
- Personal awareness
- Starting to manage
- Interpersonal communication
- Leadership
- Time management and self-organization
- Critical thinking and reasoning
- Working across cultures
- Public speaking
- Managing upwards

2. Activity-based learning

- Participants learn through activities rather than complex textual information.
- Activities allow participants to understand and remember key learnings and apply them at the workplace thanks to real work-based examples.

3. Benefits of In Business approach

- Increases workers' motivation
- Increases workers' self-confidence
- Increases workers' productivity
- Facilitates access to quality employment
- Reduces turnover
- Boosts employability
- Improves workplace relations
- Increase enterprise competitiveness
- Participants learn through activities rather than complex textual information.

The value-addition and attributes of the ILO I-B soft skills approach and programme received particular attention from stakeholders who had engaged with it. Key comparative advantage features that were highlighted included:

- The low cost-self-facilitation approach.
- The activity-based learning orientation based on case studies with which all participants engage.

- Facilitators don't need to be subject matter experts but can focus on ensuring the quality of the process ("you do not have to be an expert to facilitate").
- The direct engagement in discussion required of participants has shown itself to be helpful in developing confidence to speak and interact with peers and supervisors.

Areas identified for attention within I-B design and delivery included:

- The need to take account of and prepare for the mind-set adjustments needed to fully engage with a self-facilitated and activity-based learning approach when people are used to class-room teaching (often passive listening).
- Ensuring the quality of translation of learning materials.
- Grounding case studies to the extent possible in the company context within which the learning is taking place this element was given priority by many informants.
- Online training can be exclusive for vulnerable groups as they might in crowded living circumstances and/or not be able to access a device or have internet access.

Annex 6: Results against Indicators

Outcomes/Outputs	Performance Indicator	Baseline Information	Target	Final Evaluation Findings
Outcome 1: Sector selection and skills gap identification				
Output 1.1: Sector specific STEM skills and employability action plans for women in ASEAN-3 countries	Long-term action plans, including reports on skills needs developed and updated per country and sector.	0	3	The three skills and career mapping studies for the Philippines, Thailand, and Indonesia – one per country have been developed. The evaluation finds that this must be followed by action plans and these to be implemented to add value. The PRODOC envisaged fully-fledged sector-level action plans which would involve "stakeholder review and buy-in." Implementation at this level has not materialized in full.
Outcome 2: Skills development and upgrading for entry-level, mid-skilled and high-skilled STEM jobs				
Output 2.1 Pre-employment technical and employability skills for TVET students/graduates to facilitate their entry into full-time jobs	Train 250 TVET graduates in STEM-related technical skills in the Philippines Train 150 TVET graduates in STEM-related technical skills in Indonesia Place 50% of these women in full-time STEM-related jobs within 6 months of completing the training program (this indicator is conditional to the duration of the grant agreement).	0 N/A	1.423 (Min. 60% women) 50% in job	The placement rate (even when reduced from 70-50%) was ambitious within programme resources and timeframe the target was not met. Only six women placed in STEM-related jobs from the initial 242 trained in Indonesia, for example. The PRODOC envisaged the establishment of partnerships with local TVET institutions and enterprises for traineeships and apprenticeships to assist with job placements. Limited progress in this regard is

				reported. The evaluation recognize that it takes long time to establish a buy-in to/tradition for such an approach. The COVID-19 context made transition into employment difficult in most economical sectors. As a result, the programme focus in this regard shifted during the pandemic to development of curricula for employability training. Longer term, increased attention to the 'demand' side of the training/employment transition dynamic is required, linking up with EOs and public employment services.
Output 2.2 Skills upgrading training for those who are already in employment but in low-skilled jobs with limited upward mobility to expand their career prospects	Train 500 women in low-skilled jobs in STEM-related technical skills through work-based learning At least 70% of these women are retained in their companies 3,000 low-skilled women in ASEAN-3 trained in critical soft skills in-company through peer assisted learning 12-month turnover rate is reduced by 30% among these women after receiving training	0 N/A 0 N/A	1.848 (100 % women) 70% retained 5.560 (100% women) Reduced 30%	The soft and technical skills training exercise at Seagate Technology, Thailand, has been the major contributor to this achievement. On I-B alone in this company almost 15.000 were trained. The indicator concerning retention of staff who have received training requires ongoing monitoring in collaboration with the companies concerned to estimate the outcome. The indicator set for the movement of trainees into mid-skilled positions (original Output 2.3) was not realistic in terms of the number of workers who could potentially move into available positions and the time and educational attainment levels required for workers to move through the career pathways of the companies and sectors

				concerned. These barriers could have been foreseen in the program design already, the evaluation finds.
High-end technical skills, or leadership and management training for those who are already in supervisory or mid-skilled positions	This Expected Output was removed from the programme. Focus and resources were shifted to low-skilled female workers across ASEAN-3 (Output 2.2). The numbers for in-company training were incorporated into targets for low-skilled workers.	N/A	N/A	The evaluation finds that the removal of this Outcome has left an important gap in terms of carrying forward the original integrated concept for the programme.
Output 2.4: Develop country-specific tools to help industry express its skills needs to training and educational institutions, and train, hire, retain and promote women in STEM jobs	3 occupational and competency maps for target sectors and countries updated and finalized. 1 skills/competency standard and curricula for data analytics and IT skills implemented. 1 knowledge sharing platform for communication of enterprise-based training programs along with the toolkit to develop soft skills among female workers across ASEAN-3 designed and launched. 2 technical forums to raise awareness and promote participation of girls and women in STEM sectors conducted.	0 0 0 0	3 1 1 2	Various initiatives have been initiated to better link industry skills requirements with TVET prioritization and planning, including through 2 technical fora; working with business in relevant areas to design training curricula on hard skills (e.g. DAV with DSD in Thailand). These have been well received by stakeholders. The development of national STEM-related competency standards could not be progressed to the degree foreseen in the PRODOC although steps have been taken in this direction in both the Philippines and Thailand. In the Philippines the focus was on the integration of STEM-related skills into TVET through engagement with Certification and Standards officials. In Thailand, the complexities of the legislative change required for the development of new competency standards led to the alternative

				approach of working with the relevant national partners to develop and apply new competency standard at the programme level for technical training in DAV. Longer-term work on the upgrading /development of national competency standards relevant to the Women in STEM agenda remains a priority in the ASEAN-3. The PRODOC suggested the establishment of partnerships with local TVET institutions and enterprises for traineeships and/or apprenticeships. The evaluation found limited progress in this regard. In addition to the planned activities two national publications on women in business and management in Indonesia and the Philippines is reported to have been highly relevant. Both have attracted wide stakeholder interest and build on the programme's partnerships with the respective national Business Coalitions for Women Empowerment.
Outcome 3: Job placement				
Output 3.1: TVET level assistance for women participants including training conducted on issues related to recruitment and job placement	1 training tool to support TVET-level training on issues related to recruitment and candidate preparedness developed. 1 communication platform to strengthen public TVET bodies' capacity to reach out and enrol more girls and women in STEM-related technical trainings developed	0 0	1 1	As noted above, the COVID-19 response turn attention to an increased focus on job readiness training in the Philippines and capacitating TVET instructors to go online in Indonesia. The intent to establish a communication platform in order to strengthen TVET

	1 toolkit and capacity development program for TVET instructors to mainstream selected STEM skills developed and implemented.	0	1	institution's outreach capacity was carried forward through directly connecting EOs with TVET system authorities.
Output 3.2: Enhancement of firm partners support for the targeted recruitment of women, in particular those participating in the STEM training programme	3 workshops with employer organizations and relevant enterprises to develop joint action plans for program sustainability and long-term impact conducted, including follow-up activities on recruitment of women	0	3	Five workshops held, but follow-up constrained by COVID-19 and reorientation of the programme. Engagement with private business partners to recruit STEM graduates remains an important priority to be pursued in possible programme follow-up, including in association with national and sector EOs and longer-term implementation of mentorship, internship and quality apprenticeship programmes.
Outcome 4: In-job support				
Output 4.1: Mobilize support of training institutions, sector / employer associations and firm partners in each country, to provide institutional support to programme	3 employer organizations or business groups in ASEAN-3 institutionalized the Program tools developed for enterprise-based training. 3 TVET institutions and enterprise partnerships for on-the-job training established. 3 pieces of communication developed (one per country) documenting the impact of the Program collaborating with relevant	0 0 0	3 3 3	MOUs signed with EOs on I-B promotion and delivery to their member enterprises as a new membership service is an excellent achievement of the program. This provides strong perspectives for sustaining the activities. The program has been successful in tapping into governmental and private company resources to continue to support the programme and the continuation of its work and achievements beyond the lifetime of the program. Some companies indicated to the

	public and private actors and assisting girls and women.			evaluation that they plan to include I-B elements into their regular HR training. In the Philippines TESDA has contributed significant to the technical skills training initiated by the program.
Output 4.2: Thought leadership and advancement of good practices	3 case studies developed –one per country- documenting the impact on female workers and employers of the work-based learning program implemented	0	3	This covers both the technical and soft skills development aspects of the programme. The impact to be seen beyond the lifetime of the program.

Annex 7: Key Questions for final evaluation

Evaluation Questions	Indicator	Sources of Data	Method
Relevance and strategic fit			
1) To what extent the intervention objective, design and approach responds to beneficiaries, national development plans, partners'/institutions'/donor's needs, policies, and priorities?	Project referred to in official documents and stakeholders engage in program activities	Documents and informants	Desk review and interviews with relevant stakeholders
2) How well it meets the needs of the beneficiaries and how well it adapted to the changing needs of beneficiaries in the context of COVID-19?	Beneficiaries report that needs are met, and action taken to meet COVID-19 challenges	Beneficiaries, donor, and social partners	Desk review and interviews with beneficiaries, donor and constituents
3) How well it complements ILO strategic framework and other ILO Programs in the region?	Synergies and joint activities with other ILO projects	Minutes from joint meetings and Progress Reports	Desk review and interviews with ILO staff
4) Is the modality used by the program sufficient and / or appropriate to achieve the objective?	Outcomes are met and Outputs delivered	Implementation Progress Reports	Desk review
Coherence			
5) Has the design and implementation adequately considered cross cutting issues like gender, disability inclusion, social dialogue, and relevant international labour standards?	Cross cutting issues reflected in documents and activities	Implementation Progress Reports	Desk review
6) The extent to which the STEM program support or challenge other interventions (both ILO and others relevant interventions in the countries) and vice versa. Are there any opportunities or recommendations for improved leveraging or alignment to other relevant ILO or non-ILO initiatives?	Synergies with other ILO projects as well as other relevant projects	Relevant stakeholders and Progress Reports	Desk review and interviews with relevant stakeholders
Effectiveness			

7) To what extent the outputs and outcomes have been achieved or likely to be achieved, including any differential results across groups, and what internal and external factors may have influenced the ability of the ILO to meet these?	Level of achievement of Outcomes and Outputs, and unintended results	Partners and project staff, and Progress Reports and other documents	Interviews with staff and partners, and desk review
8) To what extent the outputs produced and delivered have yielded desired outcomes agreed with the donor, including policy and practice changes by private sector partners and constituents?	Project inputs visible in new private partner and constituents' policies and practises	Constituents and private sector partners	Interviews with stakeholderss
9) To what extent has the program management and coordination mechanisms adequately addressed the needs and implementation challenges, including those due to COVID-19?	Outputs delivered in time and of good quality	Progress Reports	Desk review
10) How effective were the chosen strategies and implementation modalities, in achieving the program targets? What are the good practices and lessons to be learned from the project approach and strategy? What are the key lessons learned and recommendations for the design of possible next phase?	Outcomes achieved	Progress Reports	Desk review
11) To what extent program management and implementation were guided by tripartite dialogue and contributed to International Labour Standards (ILS) and gender equality, disability inclusion and non-discrimination?	Constituents and ILO specialists report to have been involved in the project implementation.	Program officers, CO management and constituents	Interviews with ILO staff and constituents
12) To what extent the recommendations of the MTE have been followed up/achieved?	Number of Recommendations acted upon.	Progress Reports and MTE	Desk review
Efficiency of resource use			
13) How efficiently have resources (staff, time, expertise, budget, etc.) been allocated and used to provide the necessary support and to achieve the broader Program objective and results?	Level of budget spending in accordance with budget	Budget, financial reports and program staff	Desk review and interviews with program staff

14) How effectively the Program management monitored program performance and results?	Level of attention to MEP	Program staff	Interviews with program staff
15) To what extent and how successfully has the program leveraged resources and knowledge with other interventions and through partnerships?	Number and size of partner contribution	Partners and progress reports	Interviews with partners and desk review
Impact Orientation and Sustainability			
16) To what extent has the program contributed towards improving the capacity of constituents and other local institutions, involved in skilling in STEM and placement services, to strengthen their focus on women, as a result of the program contribution?	Number of institutions and organizations giving priority to women in STEM promotion	Stakeholders	Interviews with relevant stakeholders
17) To what extent the constituents and local institutions have been successful in getting private sector support?	Level of private sector engagement	Constituents and private sector representatives	Interviews with constituents and private sector representatives
18) To what extent the Program has strengthened an enabling environment (laws, policies, people's skills, attitudes, etc.) and women access to STEM skills?	Positive changes in women's access to STEM skills	Beneficiaries, constituents and other stakeholders	Interviews with beneficiaries and relevant stakeholders
19) Are there any positive or negative, intended or unintended, reversible or irreversible higher- level effects?	N/A	Progress reports	Desk review
20) What strategies have the Program put in place to ensure continuation of the initiative, beyond the Program end? What steps can be taken to enhance the sustainability of Program components and objectives?	Exit plan developed[27]	Exit plan	Desk review

[27] 'Thanks to the internal experience sharing and discussion, several programmes have taken up steps to continue carrying out the initiatives started under the project. Skills for Prosperity in Southeast Asia Programme will support developing competency standards, training curriculum and training regulation related to some of the STEM-related skills not yet having these. Bringing Back Jobs Safely Project will address both the rural access to the internet and the training for MSMEs and informal businesses to digitalize their business operations. And the WomenBiz.PH-DTI-PCW suggested study on women platform workers will address the reskilling and upskilling needs of them. That said, the Office will continue exploring the next phase of WiS as the promotion of STEM career for women remains a key challenge of the Philippines for the years to come, and there remains the need for more women-focused programme.

International Labour Organization

Terms of Reference

Independent Final Evaluation of Women in STEM Workforce Programme

International Labour Organisation (ILO)

December 2021

International Labour Organization

Contents

Terms of Reference

Program Code	RAS/17/04/JPM
Title	Women in STEM Workforce Readiness Programme
Countries Covered	Indonesia, the Philippines, and Thailand
Expected Duration	55 workdays (combined for international and national consultants)
Budget	US$ 2,415,000
Donor	J P Morgan Chase Foundation
P&B linkage	Outcome 4: Sustainable enterprises as generators of employment and promoters of innovation and decent work; and Outcome 5: Skills and lifelong learning to facilitate access to and transitions in the labour market
SDG linkage	SDG 4 (specifically target 4.3, 4.4, 4.5, and 4.7), SDG 5 (specifically target 5.1), and SDG 8 (specifically target 8.3)
ILO Technical Unit	Decent Work Team for Asia Pacific in Bangkok
ILO Administrative Unit	Decent Work Team for Asia Pacific in Bangkok
Languages required	Proficiency in written and spoken English (knowledge of Thai or Bahasa or Filipino required by national consultant in respective countries)
Official Program Duration	September 2017 to May 2022
Type of Evaluation	Independent Final Evaluation
Evaluation Period	February to May 2022

1. Introduction and rationale for the Final Evaluation

The JP Morgan Chase Foundation funded development cooperation Program 'Women in STEM Workforce Readiness Programme' (or Women in STEM). Following formal approval in September 2017, the Program commenced in December 2017, and is due for completion in November 2021. The total Program budget to date is US$ 2,415,000 and covers Indonesia, the Philippines and Thailand.

The Program aims to provide 1,760 women with technical STEM-related skills, employability and leadership training coupled with targeted mentorship to help women gain quality employment and advancement opportunities in STEM-related jobs in Indonesia, the Philippines and Thailand (ASEAN- 3). This is realised through a set of activities outlined in the Program proposal.

The Program underwent a mid-term evaluation (MTE) in November 2020. **Following were the recommendations from MTE :**

- **Recommendation 1:** For remaining programme period, prioritize (i) in-depth implementation and consolidation of current programme commitments vis-à-vis public and private technical and soft-skills training delivery and related capacity development; and (ii) measures to enhance the sustainability of programme investments and achievements and leverage these for maximum value in promoting the Women in STEM agenda within the three focus countries and beyond.
- **Recommendation 2:** Building on current initiatives and resources, prioritize the following impact and sustainability-related initiatives in the remaining period of the current programme period:
    - By programme end, being able to show progress (subject to partner timeframes and priorities) on developing an MOU with both the Indonesian Employers Association (APINDO) and Employers Confederation of Thailand (ECOT) for the promotion, coordination, and delivery of the I-B programme.
    - Depending on national contexts vis-à-vis COVID-19, revisit with national and sector EMBOs the issue of training/employment transition, means of promoting this within the priority sectors and follow-up steps within the programme period and beyond.
    - Where feasible, promote and facilitate progress towards embedding I-B training into company staff development, gender equality and diversity frameworks, especially in the Philippines and Thailand where significant progress has already taken place, including through ongoing efforts to engage EMBO and HR association support to this end.[1]
    - Continue promoting and supporting steps to embed STEM-related skills into national TVET frameworks and curricula in the three focus countries.
    - Further embed online training design, capacities, and delivery modalities in the respective public TVET systems, both for the current COVID-19 period and as part of long-term blended approaches to training.
    - Consider the incorporation of one additional round of TVET-based training in the Philippines to further test and refine the approach.
    - Expand the Philippines STEM Technical Working Group into a full tripartite platform in line with its founding vision
    - In collaboration with relevant EMBOs and corporate partners, embed longer-term impact assessments into technical and soft skills training monitoring and evaluation arrangements.
    - Develop national plans to follow-up (disseminate, promote, and apply) the Indonesia and Philippines reports launched under the programme on increasing the number of women in business and management.
- **Recommendation 3:** Ensure the necessary resources and time are allocated to develop a programme Sustainability Action Plan to provide an enabling framework to carry forward the work, investments, achievements, and lessons of the programme. Arrangements for the preparation of such plan should be in place before the end of 2020 and include either joint development or close synergies with the planned documentation of programme lessons.
- **Recommendation 4:** Consider an **extension of the programme** for at least a further three year period to enable the consolidation and sustainable embedding of progress made, drawing on the above-mentioned Sustainability Action Plan as well as the associated documentation of lessons set out in the current results framework.

[1] Examples include the Federation of Thai Industries, the Personnel Management Association of Thailand, the People Management Association of the Philippines, and the Contact Center Association of the Philippines.

In line with the evaluation policy of the International Labour Organisation (ILO), an independent final evaluation is now envisaged to be carried out during the final months of the Program. This evaluation forms part of the ILO's strategic practice of ensuring that Programs are adequately evaluated.

The independent final evaluation follows the OECD/DAC evaluation criteria and will assess the coherence, relevance, efficiency, effectiveness, impact, and sustainability of the Program interventions, including proposing recommendations on the way forward. The main purpose of this final independent evaluation is to promote accountability to ILO key stakeholders, internal and external constituents, and the donor, and to enhance learning and knowledge building among them. It will also assess and capture learnings on Program's adaptability and responsiveness to the context of COVID-19. The findings will be used to improve the design and implementation of similar future Programs.

The final independent evaluation will be conducted by an external independent evaluation team, and managed by an independent evaluation manager, who is an ILO staff member with no prior involvement in the Program. The evaluation will comply with the United Nations Evaluation Guidelines (UNEG) Norms and Standards, ILO policy guidelines (3rd edition) and the ethical safeguards.

2. Program background

Women in STEM-related sectors across Southeast Asia face a variety of challenges that reduce entry, retention, and advancement in these sectors. First, for a variety of socio-economic-cultural and infrastructural reasons, fewer women tend to enter the vocational training programmes related to these sectors. Second, those who are trained, often face barriers to placement vis a vis their male counterparts. Further, the women employees in these industries are typically faced with challenges both within their firms and from societal expectations, resulting in a higher tendency to drop out than males. And finally, they often are overlooked in terms of career advancement, at both the lower levels and with regard to their consideration for senior managerial roles.

To address these issues, the Program has identified high-growth sectors, automotive (initially and shifted to ICT) in Indonesia; Information and Communication Technology (ICT) and Information Technology and Business Process Management (IT-BPM) in Philippines; and electrical and electronics sectors in Thailand respectively for intervention. The selection of these sectors was based on evidence of significant skills gaps and opportunities for growth for women over the next decade. However, because of contextual and implementation challenges, the Program shifted its focus to the ICT in Indonesia and subsequently included the retail sector as part of its pandemic response. Similarly, women in STEM-related roles in the healthcare sector were further included in Thailand on the advice of the Employers Confederation of Thailand.

The sectors identified for intervention are rapidly evolving and becoming more innovative, requiring a blend of critical soft and technical STEM-related skills. Consequently, low skilled jobs are declining and there is an evident shift from traditional blue-collar jobs to more skilled occupations. Therefore, the Women in STEM Program aims to improve women acquisition and adoption of critical soft and technical STEM-related skills and, in this way, contribute to reduce the skills mismatches that affects workers' productivity and enterprises' competitiveness in this rapidly changing context. Productivity is a key indicator of improved living standards for women and is also a major contributor to economic growth.

The Program was initially intended for 15 months, but received additional grant thus extending the Program period by a year till 30 November 2021. Further, the project has secured 'No cost extension' till May 2022 in August 2021 to complete the activities impacted due to COVID-19.

3. Program Strategy

The ILO's Women in STEM Workforce Readiness Program combines demand-led technical STEM skills and employability and leadership training among women in selected sectors in the three focus countries to support workforce development to contribute to increased enterprise productivity, enhance employability, transition from training to jobs and career advancement. These efforts will be codified in industry tools that will be integrated into the human resource practices of firms committed to training, hiring, retaining, and promoting women in STEM-related positions.
Three broad support strategies underpin the program approach:

1) underprivileged female secondary or post-secondary TVET graduates to sustainable entry-level STEM positions with career prospects;
2) under-employed women in STEM-related fields upgrade their skills to progress to mid-level STEM employment positions; and
3) transition mid-level women working in STEM fields into leadership/managerial roles.

4. Program objectives

The STEM program closely aligns with research findings on STEM-related employment across ASEAN, and addresses ILO's learnings from past program implementations showing that women are significantly under-represented in the sub-region's STEM workforce. The automotive, IT and business process outsourcing (IT-BPO) and electrical/electronics (E&E) sectors are identified as high- growth in Indonesia, the Philippines and Thailand, respectively, presenting significant projected skills gaps and opportunities for growth for women over the next decade. In this context, the 'The *Women in STEM Workforce Readiness Program' aims to* provide 1,760 women with technical STEM-related skills, employability and leadership training coupled with targeted mentorship to help women gain quality employment and advancement opportunities in STEM-related jobs in Indonesia, the Philippines and Thailand (ASEAN-3).

To address the challenges that may lead to job losses and increase inequalities due to automation, especially among low-skilled women workers, as well as lower competitiveness of enterprises, the Program is actively collaborating with government and the private sector -including employers and business membership organizations in - Indonesia, the Philippines and Thailand (ASEAN-3). It intends to improve skills needs identification, strengthen TVET systems' capacity to design and deliver STEM- related training, and lastly support national skills development initiatives with the objective to fulfil the skills requirement of the industry 4.0.

The Program focuses on two major technical areas:

(a) workforce readiness, including pre-employment skills assistance for women to facilitate the acquisition of demand-led STEM-related skills and with this improve their employability;
(b) workforce development, including skills upgrading –combining upskilling and reskilling initiatives- for women workers employed in entry level jobs in STEM sectors but with limited opportunities to advance in their careers.

The **expected outcomes** include:

- Development of sector-specific STEM skills and employability Action Plans for women in each of the ASEAN-3 countries.
- Successfully transition underprivileged female vocational school graduates into STEM-related employment with sustainable career and livelihood prospects.
- Successfully transition women in low-skilled jobs to quality STEM-related employment with sustainable career and livelihood prospects.
- Develop country-specific tools to help industry express its skills needs to training and educational institutions, and train, hire, retain and promote women in STEM jobs.
- (*added to the results framework subsequently)* TVET level assistance for women participants including training conducted on issues related to recruitment and job placement.
- (*added to the results framework subsequently)* Enhancement of firm partners support for the targeted recruitment of women, in particular, those participating in the STEM training programme.
- (*added to the results framework subsequently)* Mobilize support of training institutions, sector employer associations and firm partners in each country, to provide institutional support to the programme.
- (*added to the results framework subsequently)* Thought leadership and advancement of good practices.

5. Management Arrangement

The project operates from offices in Decent Work Technical Team (DWT) in Bangkok under the general guidance of the ILO's Director, DWT Bangkok, and the administrative backstopping by project staff with technical backstopping support from the DWT and Country Offices. The project receives technical backstopping from the ILO's enterprise development and skills development in the Decent Work Team (DWT) Bangkok. The project has been managed on a day-to-day basis by an International Technical Officer (TO), supported by one administrative support staff in Bangkok and National Project Officers working within the country offices in Philippines and Indonesia.

6. Alignment to ILO strategic frameworks and outcomes

The Program aligns with ILO Programme and Budget 2022-23 :

Outcome 4: Sustainable enterprises as generators of employment and promoters of innovation and decent work; and
Outcome 5: Skills and lifelong learning to facilitate access to and transitions in the labour market

It also aligns to :

- ILO Recommendation No.195 (2004), which seeks to provide policy guidelines on human resources development, education, training, and lifelong learning.
- G7 Social Tripartite declaration (2019) that aims to reduce inequalities through promoting skills development in the new world of work as well as closing the gender employment and participation gaps in high growth STEM sectors.

7. Links to International and National Development Priorities and Outcomes

The programme is aligned to SDG 4 (specifically target 4.3, 4.4, 4.5, and 4.7), SDG 5 (specifically target 5.1), and SDG 8 (specifically target 8.3). Further, it is aligned to specific outcomes in Decent Work Country Programmes (DWCPs):

1. **Indonesia.** Outcome 2.1: Enhanced skills development programme and policy, and labour market governance for improved employability of youth.[2]
2. **Philippines.** Outcome 1.1: Men and women (especially the youth and other groups at risk of vulnerability or marginalization) acquire appropriate competencies and have access to and engage in remunerative and productive work.[3]
3. **Thailand.** Outcome 1.1: Increased decent and productive employment as a result of effective demand-based and gender responsive employment services and improved and expanded promotion of technical/ vocational skills for with a particular focus on the employability of youth and older persons of all genders. The Thailand DWCP also has targets with a specific women and STEM focus. These are: Target 1.1.4 (f). At least one sector- specific demand-led and gender-responsive action plan developed, documented, and disseminated for STEM skills for sustainable development and employability for women; and Target 1.1.4 (g). By 2021, at least 1,000 women trained in technical STEM-related skills, using gender-responsive workplace-based learning programmes, increased employability, and leadership training to enhance their employability and advance opportunities in STEM- related jobs in a selected sector.

The programme is aligned to below national plans / strategies:

- **Indonesia:** (i) The Law of the Republic of Indonesia (no. 17, 2007) on the long-term national development plan of 2005-2025, particularly Section iv.1.2., A. on Developing Quality Human Resources;[4] (ii) 'Making Indonesia 4.0,' the country's national plan to meet the needs of Industry 4.0;[5] and (iii) the Presidential Decree (2000) on Gender Mainstreaming in National Development.

- **Philippines:** (i) Philippine Development Plan 2017-2022, Chapter 10; Accelerate Human Capital Development;[6] (ii) Industry 4.0 Roadmap;[7] and (iii) the Republic Act 9710: Magna Carta of Women.[8]
- **Thailand:** Socio - Economic Development Strategy, the Twenty - year National Strategic Framework (2017-2036) and the Twelfth National Economic and Social Development Plan (2017-2021);[9] the Thailand 4.0 Development Plan Skill Development Promotion Act (2002);[10] Thailand Gender Equality Act (2015).[11]

[2] ILO Decent Work Country Programmes by country/subregion. Asia and the Pacific. Available at https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/departments-and-offices/program/dwcp/WCMS_560738/lang--en/index.htm
[3] Ibid
[4] Available at https://www.bappenas.go.id/files/6715/3173/4665/RPJPN_2005-2025.pdf
[5] Available at https://oxfordbusinessgroup.com/analysis/technology-comes-four-making-indonesia-40-seeks-strengthen-digital-economy-and-attract-foreign
[6] Available at http://www.neda.gov.ph/philippine-development-plan-2017-2022/
[7] Refer to https://www.pna.gov.ph/articles/1114871
[8] Available at https://pcw.gov.ph/republic-act-9710-magna-carta-of-women/
[9] ILO-Thailand Decent Work Country Programme (DWCP), 2019-2021.
[10] Ibid
[11] Human Rights Watch. Available at https://www.hrw.org/news/2015/09/21/thailand-gender-equality-act

8. Purpose and scope of the Final Evaluation

The main purpose of this final independent evaluation is to promote accountability to ILO key stakeholders, including the constituents in the three focus countries, and the donor-J P Morgan Chase foundation, and to enhance learning within the ILO and key stakeholders. Knowledge and information (including lessons learned, good practices, challenges and etc.) obtained from this evaluation, will be used to help inform the design and implementation of future skills and enterprise programmes to promote women participation in STEM.

The final independent evaluation has the following specific objectives:

1. Assess the coherence, relevance, efficiency, and effectiveness of the Program interventions, while identifying the supporting factors and constraints that have led to them, including strategies and implementation modalities chosen, and partnership arrangements.
2. Assess contributions and results of the interventions (both expected and unexpected, both positive and negative changes) and examine how and why the changes were caused by the intervention[5] and measure the size of the effect caused by that intervention or tactic.
3. Assess Program impact (including where the Program's support has been most/least effective and why), including the extent to which capacity of partners have been strengthened, and the benefits of the Program's contribution to improvement of Women in STEM.
4. Assess the extent to which the recommendations of the MTE have been followed up/achieved.
5. Assess the Program's contribution to COVID-19 immediate responses and recovery.
6. Assess the extent to which the Program outcomes will be sustainable.
7. Assess the extent to which the Program promote gender equality, disability inclusion and non-discrimination and is gender-responsive.
8. Assess the extent to which the Program management and coordination mechanisms adequately addressed the needs and implementation challenges and how effectively the Program management monitored Program performance and results

Evaluation recommendations should be developed considering the above objectives.

Scope of the evaluation. The scope of the final evaluation is guided by the main objective and the specific objectives as outlined in the above section. The evaluation covers the period of implementation of the Program from its start in December 2017 until the time of the final evaluation, covering key outputs and outcomes (including unexpected results). It involves discussions with ILO Program staff, national counterparts and development partners of the Program, the donor-JP Morgan Chase Foundation, and the ILO technical specialists based in Bangkok, Thailand.

The scope of work includes an assessment of the performance of the Program vis-à-vis:

1. Outputs and outcomes - against targets and indicators;
2. Chosen strategies and implementation modalities;
3. Partnership arrangements;
4. Follow-up on identified constraints/challenges and opportunities/recommendations;
5. Use and management of the financial resources of the Program;
6. Internal and external factors that influence Program implementation;
7. Management and coordination of the Program, including staff management ;
8. The extent of tripartite partners buy-in and participation in the Program;
9. Strategic fit of the initiative ;

10. Relevance of the initiative within national development priorities/frameworks ;
11. Synergies with other enterprise and skills development Programs

The scope of work also includes the formulation of recommendations for the design and implementation of similar future programs.

9. Clients

The primary clients of the evaluation are JP Morgan, as the donor of the initiative, ILO offices of Manila, Jakarta, and Bangkok, including the Decent Work Technical Support Team; ILO HQ Branches (SKILLS and ENTERPRISES), and the Program team as the executing agent of the initiative. The evaluation process should be participatory. The ILO office, the tripartite constituents and other parties involved in the execution of the Program may use, as appropriate, the evaluation findings and lessons learnt.

10. Evaluation Criteria and Questions

The evaluation will address ILO evaluation concerns, such as:

1. Relevance and strategic fit
2. Validity of design
3. Program progress and effectiveness
4. Efficiency of resource use
5. Effectiveness of management arrangements
6. Impact orientation and sustainability as defined in the Office guidelines

The evaluation will integrate gender equality and non-discrimination as cross-cutting concerns throughout the methodology, the deliverables, and the final report of the evaluation. These cross- cutting concerns will be addressed in line with EVAL's Guidance Note n° 4. Similarly, EVAL's Guidance Note n° 7 will be followed as much as practically possible to ensure stakeholder participation (web links to the Guidance Notes are provided in the Annexure).

Gender concerns will be based on the ILO Guidelines on Considering Gender in Monitoring and Evaluation of Programs (September 2007). The evaluation will be conducted following UN evaluation standards and norms and the Glossary of key terms in evaluation and results-based management developed by the OECD's Development Assistance Committee (DAC). In line with the results-based approach applied by the ILO, the evaluation will focus on identifying and analysing results through addressing key questions related to the evaluation concerns and the achievement of the outcomes/immediate objectives of the initiative using the logical framework indicators.

11. Suggested Key Evaluation Questions

The evaluation team shall examine the following key issues. The evaluation team may suggest additional questions in consultation with the evaluation manager. Any fundamental changes to the evaluation criteria and questions should be agreed between the evaluation manager and the evaluation team leader, and reflected in the inception report:

1) Relevance and strategic fit

a. The extent to which the intervention objective, design and approach responds to beneficiaries, national development plans, partners'/institutions'/donor's needs, policies, and priorities
b. How well it meets the needs of the beneficiaries and how well it adapted to the changing needs of beneficiaries in the context of COVID-19
c. How well it complements ILO strategic framework and other ILO Programs in the region
d. Is the modality used by the program sufficient and / or appropriate to achieve the objective?

2) Coherence

a. Has the design and implementation adequately considered cross cutting issues like gender, disability inclusion, social dialogue, and relevant international labour standards
b. The extent to which the STEM program support or undermine other interventions (both ILO and others relevant interventions in the countries) and vice versa. Are there any opportunities or recommendations for improved leveraging or alignment to other relevant ILO or non-ILO initiatives?

3) Effectiveness

a. To what extent the outputs and outcomes have been achieved or likely to be achieved, including any differential results across groups, and what internal and external factors may have influenced the ability of the ILO to meet these
b. To what extent the outputs produced and delivered so far have yielded desired outcomes (stakeholders should be interviewed to gauge how they perceive them) agreed with the donor, including policy and practice changes by private sector partners and constituents
c. To what extent has the program management and coordination mechanisms adequately addressed the needs and implementation challenges, including those due to COVID-19?
d. How effective were the chosen strategies and implementation modalities, in achieving the program targets? What are the good practices and lessons to be learned from the project approach and strategy? What are the key lessons learned and recommendations for the design of possible next phase?
e. To what extent program management and implementation were guided by tripartite dialogue and contributed to International labour standards (ILS) and gender equality, disability inclusion and non-discrimination
f. The extent to which the recommendations of the MTE have been followed up/achieved.

4) Efficiency of resource use

a. How efficiently have resources (staff, time, expertise, budget, etc.) been allocated and used to provide the necessary support and to achieve the broader Program objective and results?
b. How effectively the Program management monitored program performance and results?
c. To what extent and how successfully has the program leveraged resources and knowledge with other interventions and through partnerships?

5) Impact Orientation and Sustainability

a. To what extent has the program contributed towards improving the capacity of constituents and other local institutions, involved in skilling in STEM and placement services, to strengthen their focus on women, as a result of the program contribution
b. To what extent the constituents and local institutions have been successful in getting private sector support

c. To what extent the Program has strengthened an enabling environment (laws, policies, people's skills, attitudes, etc.) and women access to STEM skills
d. Are there any positive or negative, intended or unintended, reversible or irreversible higher-level effects?
e. What strategies have the Program put in place to ensure continuation of the initiative, beyond the Program end? What steps can be taken to enhance the sustainability of Program components and objectives

12. Evaluation Methodology

The ILO's policy guidelines for evaluation (4TH edition, 2020) provides the basic framework. The evaluation will be carried out according to the ILO's standard policies and procedures, and comply with the United Nations Evaluation Group (UNEG) norms and standards and the OECD DAC evaluation quality standards.

This evaluation is guided by 'ILO's implications of COVID-19 on evaluations in the ILO : An internal guide on adapting to the situation'. As the COVID- 19 pandemic continues to persist in the Program countries, data collection will be done remotely using tools : skype, S4Biz, Webex or Zoom, Survey monkey or similar tool.

The evaluation team will apply an appropriate methodology to gather data and information in order to offer diverse perspective to the evaluation and to promote as much participation of key program stakeholders at all levels, as possible, in the exercise. Approximate number of stakeholders to be covered is given below :

Regional : External Stakeholders – 1 (donor); Internal Stakeholders – 8 (ILO, primarily DWT Specialists, work-based evaluators, past Technical Officers)

Philippines : External Stakeholders – 10; Internal Stakeholders - 7 Indonesia :

External Stakeholders - 9 ; Internal Stakeholders - 5

Thailand : External Stakeholders – 10; Internal Stakeholders - 6

To collect the data for analysis, the evaluation will make use of the techniques listed below (but not limited to) :

- **Desk review:** A desk review will analyse documentation provided by the Program management. This will include, program document, MTE report, donor progress reports, minutes of meetings, knowledge products, impact assessment study, financial reports, and other program related documents. It will also refer to United Nations Sustainable Development Cooperation Framework (UNSDCF) and DWCP in the program countries. The desk review will suggest a number of initial findings that in turn may point to additional or fine-tuning of the evaluation questions. This will guide in the drafting of the inception report and the final evaluation instrument, which should be finalized in consultation with the Program team and technical specialists, before conducting any interviews

- **Key informants interviews and focused group discussions :** The evaluation team will undertake group and/or individual discussions with relevant ILO staff, including Program staff, ILO specialists, donor, key stakeholders and program partners (as much as possible). An indicative list of persons to be interviewed will be suggested by the ILO and the contacts will be facilitated by the Program team for the evaluation team.

- **Quantitative survey with beneficiaries :**

Respondents from the list of E4WAY stakeholders are to be invited to complete an anonymous online survey. The survey questions will be developed, disseminated, translated in local language, and analysed by the consultant/team.

13. Key Deliverables

The evaluation team will prepare the following reports (and a final PPT), all in English, in the course of executing his/her assignment:

1. A**n inception report**

a. Describe the conceptual framework that will be used to undertake the evaluation;
b. Elaborate the methodology proposed in the ToR with adjustments and precisions as required;
c. Set out the evaluation matrix to indicate how information and data for addressing each evaluation question and Program's performance indicators will be gathered. This must include data sources, (emphasizing triangulation as much as possible) data collection methods, and sampling;
d. Detail the work plan for the evaluation, indicating the phases in the evaluation, their key deliverables and milestones;
e. Set out the list of key stakeholders to be interviewed and the guides to be used for interviews, observation, focal groups and other techniques that may be applied;
f. Develop data collection tools and questionnaires;
g. Set out the agenda for the stakeholders' workshop.

Field data collection will be initiated after the Evaluation Manager approves the Inception Report in consultation with the Program team.

2. **A debriefing workshop to** present **preliminary findings** at the end of the virtual data collection phase. The evaluation team will organize a half day meeting to discuss the preliminary findings of the evaluation after data collection is completed and an initial analysis has been done. The virtual workshop will be attended by ILO program team and specialists. It will be technically organized by the evaluation team, with the logistic support of the program.
3. **Present key evaluation findings** to the Program Stakeholders, at the virtual **Final Evaluation Meeting**. A PowerPoint presentation should be prepared for the presentation.
4. **First draft of the Evaluation Report** (see outline below) must be submitted as per the agreed timeline. The report will be reviewed by the evaluation manager to ensure the quality of the report. After that, it will be shared with all relevant stakeholders with two weeks given for comments. The comments will be provided to the evaluation team who will then produce a final version that integrates the comments.
5. **Final version of the Evaluation Report**, incorporating comments received (or a specific justification for not integrating comments). The report should be no longer than 50 pages excluding annexes. The quality of the report will be assessed against the ILO EVAL checklist, see Annex 6. The report should also include **a section on output and outcome level results against indicators and targets as well as comments on each one.** The final version is subjected to final approval by ILO EVAL (after initial approval by the Evaluation manager/Regional evaluation officer)

The draft and final versions of the Evaluation Report in English (maximum 50 pages plus annexes) will be developed, as per following **suggested structure:**

a. Cover page with key Program data (Program title, Program number, donor, Program start and completion dates, budget, technical area, managing ILO unit, geographical coverage); and evaluation data (type of evaluation, managing ILO unit, start and completion dates of the evaluation mission, name(s) of evaluation team(s), date of submission of evaluation report).
b. Table of contents
c. Acronyms
d. Executive Summary
e. Background of the Program and its intervention logic
f. Purpose, scope and clients of the evaluation
g. Methodology and limitations
h. Review of Program results
i. Presentation of findings (in accordance with OECD DAC evaluation criteria)
j. Conclusions and recommendations (including to whom they are addressed, resources required to implement the recommendations, and their priority and timing)
k. Lessons learnt and potential good practices
l. Annexes (TOR, indicator table with the status achieved to date of Program indicators/targets and a brief comment per indicator, a list of people interviewed, schedule of the field work, list of documents reviewed, lessons and good practices as per ILO template – one lesson learnt or good practice per template, other relevant information).

All draft and final outputs, including supporting documents, analytical reports and raw data should be provided in electronic versions compatible with Microsoft Office. Use of the data for publication and other presentation can only be made with the written agreement of the International Labour Organization. Key stakeholders can make appropriate use of the evaluation report in line with the original purpose and with appropriate acknowledgment.

14. Management arrangements, work plan and timeframe

a. **Management arrangement :** An Evaluation Manager (from within ILO), Ms. Sudipta Bhadra, who has not had prior involvement in the Program, will manage this final evaluation. The Evaluation team reports to the Evaluation Manager (EM).

The Evaluation Manager is responsible for completing the following specific tasks:

- Draft and finalize the evaluation TORs with inputs from key stakeholders (draft TORs to be circulated for comments)
- Develop the Call for Proposal and the selection of the IE, in coordination with the Regional Monitoring and Evaluation Officer and EVAL
- Brief the Evaluation team on ILO evaluation policies and procedures
- Initial coordination with the Program team on the development of the field mission schedule and the preliminary results workshop
- Approve the Inception Report
- Circulate the first draft of the Evaluation Report for comments by key stakeholders

- Ensure that the final version of the Evaluation Report addresses stakeholders' comments and meets ILO requirements (See Annex 1).
- Share the report with EVAL for final approval and uploading in the public e-discovery repository. Evaluation report will be considered final version when it's approved by ILO Evaluation Office.

b. Evaluation team : The evaluation will be undertaken by a team led by an international evaluator and national consultants based in each program country and proficient in local language. The national consultant will be responsible for field data collection, providing local context, and to ensure that all key stakeholders are consulted, besides assisting the team leader in compiling, analysing data, note taking and drafting of report. The evaluation team will have the final responsibility for the evaluation report and ensure the quality of data (validity, reliability, consistency, and accuracy) throughout the analytical and reporting phases. The evaluation team will agree on the distribution of work and schedule for the evaluation and stakeholders to consult. It is expected that the report will be written objectively based on evidence generated.

c. Evaluation work plan and timeframe:

The final evaluation will be conducted between January to April 2022.

Task	Responsible person	Timeline
Selection of consultant / evaluation team	Evaluation Manager/ROAP/EVAL	Zero week
Sign the contract (vendor registration requires 2 weeks)		Zero to Week 2
Brief evaluation team on ILO evaluation policy	Evaluation Manager	Week 3
Desk review, and audio/skype/video conference with Program, and inception report	Program and evaluation team (at home based)	Week 4 -5
Data collection / stakeholder interviews	Evaluation team	Week 6 - 7 (flexibility to be adopted in the event 2-3 key stakeholders are unable to participate due to COVID-19 related emergencies. The evaluation team will accommodate such requests and conduct interviews at mutually convenient time subsequently)
Debriefing workshop (included in the evaluation mission)	Evaluation team /Program Team	Week 8
Final evaluation meeting with all Program stakeholders either one combined or separate for each country (Stakeholder's workshop)	Evaluation team/ all Program stakeholders	Week 8
Drafting of evaluation report and submitting to the Evaluation Manager	Evaluation team	Week 9/10
Sharing the draft report to all concerned for comments	Evaluation Manager	Week 10/12
Consolidated comments on the draft report, send to the evaluation team	Evaluation Manager	Week 12/13
Finalize the report including explanations on why comments were not included	Evaluation Team	Week 14

Proposed workdays (payable days) for the evaluation team

Phase	Responsible Person	Tasks	# days
I	Evaluation team	● Briefing with the evaluation manager, the Program team ● Desk Review of programme related documents ● Inception report	7
II	Evaluation team (and organisational support from ILO)	● Consultations with programme staff and Specialists in Program countries ● Interviews / FGDs with key stakeholders, including constituents ● Survey	37
III	Evaluation Team	● Draft report based on field consultations / interviews and desk review ● Debriefing workshop ● Final evaluation meeting (Stakeholder's workshop)	8
V	Evaluation Team	● Finalize the report including explanations on why comments were not included	3
TOTAL		**55***	

** These are the maximum working days for Evaluation team (international and three national consultants). The proposed number of working days for each task can be re-adjusted.*

At the beginning of the assignment, the evaluation team is advised to undergo the induction training in this link : h ttp://training.itcilo.org/delta/ILO-EVAL/ILO_Self-i nduction_Module_for_Evaluation_Consultants-Part-I/story_html5.html

15. Required Qualification of Consultants

- **Required Qualifications of the Evaluation team leader**
- Advanced university degree with minimum 7-10 years of relevant experience in international project /project evaluations
- Any nationality, but preferably based in one of the Program countries
- Has good understanding of the country context

- Demonstrated knowledge/experience with the application of gender equality, rights-based approaches, skill development in STEM, and the ILO decent work agenda.
- Experience in evaluating projects related to skilling
- Experience in using the Theory of change approach in evaluations
- Relevant experience with Results Based Management
- Extensive experience in applying, qualitative and quantitative evaluation methodologies
- Knowledge of ILO's roles and mandate and its tripartite structure as well as UN evaluation norms and its Project is desirable
- Proven ability to produce analytical reports and a good command of English
- Ability to bring gender-sensitive and non-discrimination dimensions into the evaluation in the design, data collection, analysis and report writing of the evaluation
- Excellent analytical skills with the ability to analyse and interpret data from a range of sources
- Be flexible and responsive to changes and demand
- Be client oriented and open to feedback
- Be able to work efficiently and effectively in situations with tight and demanding deadlines

- **Required Qualifications of supporting national consultants**

- National and based in one of the Program countries (not more than one consultant from same Program country)
- University Degree with minimum 3 years of experience in project /Project evaluations
- Demonstrates knowledge and experience with the application of rights-based approach
- Experience in using the Theory of change and logframe analysis approach on evaluation is an advantage
- Extensive experience in applying, qualitative and quantitative research methodologies including participatory approaches
- Knowledge of ILO's roles and mandate and its tripartite structure as well as UN evaluation norms and its Programming is desirable
- Proven ability to produce analytical reports in good command of English
- Ability to bring gender and disability dimensions into the evaluation including design, data collection, analysis and report writing.
- Excellent analytical skills with the ability to analyse and interpret data from a range of sources
- Excellent understanding local context in relation to health management and health insurance issues as well relevant international framework pertaining to the subject
- Be flexible and responsive to changes and demand
- Be client oriented and open to feedback

Desirable (for team leader and team members):

- Knowledge and experience of the UN System/s
- Experience in evaluating Programs within Asia

16. Legal and ethical matters

The evaluation will comply with UN Norms and Standards. The evaluator will abide by the EVAL's Code of Conduct for carrying out the evaluations. UN Evaluation Group (UNEG) ethical guidelines will be followed. The evaluator should not have any links to project management, or any other conflict of interest that would interfere with the independence of the evaluation.

Evaluators should have personal and professional integrity and abide by the U NEG Ethical Guidelines for evaluation and the Code of Conduct for Evaluation in the UN system to ensure that the rights of individuals involved in an evaluation are respected. Evaluators must act with cultural sensitivity and pay particular attention to protocols, codes and recommendations that may be relevant to their interactions with women. Evaluators will be expected to sign the respective ILO Code of Conduct to show that they have read and understood the UNEG Code of Conduct for Evaluation in the UN System process.

Ownership of data from the evaluation rests jointly with the ILO and the consultant. The copyright of the evaluation report will rest exclusively with the ILO. The use of data for publication and other presentations can only be made with written agreement of the ILO. Key stakeholders can make appropriate use of the evaluation report in line with the original purpose and with appropriate acknowledgement.

ANNEX 1: RELEVANT POLICIES AND GUIDELINES

17. ILO Policy Guidelines for evaluation: Principles, rationale, planning and managing for evaluations, 4th ed (2020) 3rd ed. http://www.ilo.ch/eval/Evaluationpolicy/WCMS_571339/lang--en/index.htm
18. Code of conduct form (To be signed by the evaluation teams)

h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_206205/lang--en/index.htm

- Checklist No. 3: Writing the inception report

h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_165972/lang--en/index.htm

- Checklist 5: preparing the evaluation report

h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_165967/lang--en/index.htm

- Checklist 6: rating the quality of evaluation report

h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_165968/lang--en/index.htm

- Template for lessons learnt and Emerging Good Practices

h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_206158/lang--en/index.htm h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_206159/lang--en/index.htm

- Guidance note 7: Stakeholders participation in the ILO evaluation h ttps://www.ilo.org/global/docs/WCMS_165982/lang--en/index.htm
- Guidance note 4: Integrating gender equality in the monitoring and evaluation of Projects h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_165986/lang--en/index.htm
- Template for evaluation title page

h ttp://www.ilo.org/eval/Evaluationguidance/WCMS_166357/lang--en/index.htm

- Template for evaluation summary

h ttp://www.ilo.org/legacy/english/edmas/eval/template-summary-en.doc

- UNEG Ethical Guidelines for Evaluation

h ttp://www.unevaluation.org/document/download/548


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