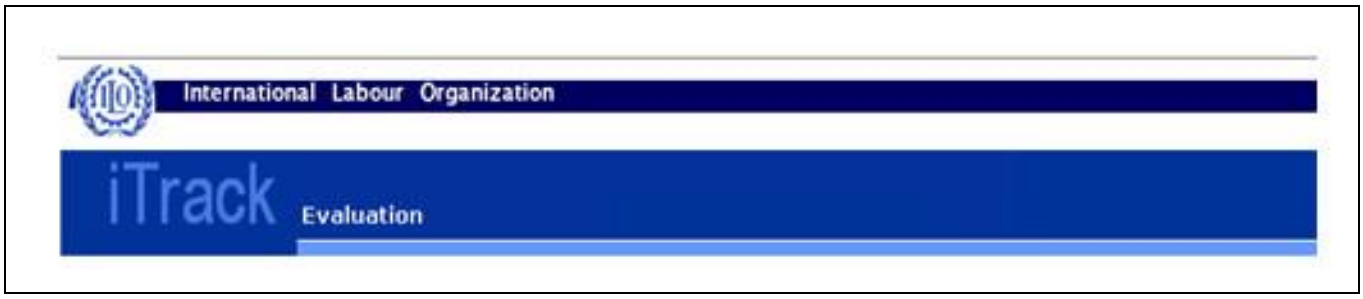

ILO EVALUATION

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This evaluation has been conducted according to ILO's evaluation policies and procedures. It has not been professionally edited, but has undergone quality control by the ILO Evaluation Office

Acronyms and abbreviations

ACT/EMP	Employers Bureau (ILO)
APINDO	Indonesia Employers Association
APRINDO	Indonesia Retailers Association
ASEAN	Association of Southeast Asian Nations
BPM	Business Process Management
CTA	Chief Technical Advisor
DAC	Development Assistance Committee
DSD	Department of Skills Development
ECOP	Employers Confederation of the Philippines
ECOT	Employers Federation 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 Organization
IT	information technology
M&E	monitoring and evaluation
MOM	Ministry of Manpower
MOU	memorandum of understanding
OECD	Organization for Economic Cooperation and Development
STEM	science, technology, engineering and mathematics
TESDA	Technical Education and Skills Development Authority
TO	Technical Officer
TOT	training of trainers
TVET	technical and vocational education and training
TWG	technical working group

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1. Executive summary and recommendations

1.1 Overview and key findings

Funded by the J.P Morgan Chase Foundation, the ILO Women in STEM Workforce Readiness Programme (Women in STEM) commenced in December 2017, following its formal approval in September 2017. Geographically the programme covers Indonesia, the Philippines and Thailand (ASEAN-3), combining regional and country-level delivery components. The official programme duration (as per the ILO financial system) is September, 2017 to November, 2021.

The programme encompasses the ILO's sustainable enterprises development and skills development agendas and objectives. With respect to the former, the programme design responds to the ILO's Programme and Budget (2020-2021) call to "support the role of the private sector as a principal source of economic growth and job creation."[1] Recognizing 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 programme also aligns with the ILO Recommendation No.195 (2004), which provides policy guidelines on human resources development, education, training and lifelong learning.[3] In particular, the programme supports the provision of equal opportunities for training among women and men and provides incentives as well for employers to take responsibility of human resource development through training provision. In addition, the programme supports 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 support the sustainable enterprises development and skills development components of the programme. These are: (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. Central to the enterprise development component of the programme in this context is the ILO's ground-breaking enterprise-based In Business (I-B) soft skills training model.

A broader skills agenda that anchors these two technical areas is to make the skills and TVET system to be more inclusive and respond to the needs of those under served by the existing skills system while responding to the needs of the labour market (especially in the context of Industry 4.0). In this respect, the programme aims to institutionalize the project's concepts (e.g. STEM skills training; women's readiness for STEM jobs) and pilot training programmes as part of the existing system.

The internal mid-term evaluation was conducted in the period September-October 2020 through a blended quantitative/qualitative process drawing on a desk review of available documentation and

[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

online interviews with a small group of selected stakeholders in each of the focus countries, as well as ILO specialist, Country Office and programme staff. Taking account of the reorientation of programme priorities and approach required by the COVID-19 pandemic, as well as adjustments required as a result of implementation experience in the first two years, the evaluation aimed to provide (i) an independent assessment of progress to date of the programme, including performance as per the foreseen targets and indicators of achievement at output level; strategies and implementation modalities; partnership arrangements, constraints and opportunities; and (ii) recommendations for the remaining duration of the programme in terms of strategies, institutional arrangements, partnership arrangements and revisions to the results framework and other areas of programme design and implementation.

The evaluation was conducted in parallel to an impact evaluation of the programme's enterprise-based soft-skills training through the ILO I-B model for women in STEM occupations within the focus countries. This exercise will in particular examine the enterprise development component of the programme, including the extent to which such training has resulted in productivity gains by participating companies and in the achievement of overall company outcomes. This parallel exercise is occurring within a longer timeframe, so the findings are not yet available for reference in this mid-term evaluation report.

Key findings

Relevance: The Women in STEM programme has been found to be relevant to national commitments, policies and programmes around the Sustainable Development Goals (SDGs), gender equality and meeting the skills developments requirements of Industry 4.0. It is furthermore found to be well aligned to ILO sustainable enterprise development and skills development objectives and priorities. While not all national partners were necessarily prioritizing efforts in this area when the programme commenced, the programme demonstrated that generally public and private sector counterparts readily saw the salience of the issue to their own objectives and interests and were open to becoming more actively engaged. In a relatively short time the programme has demonstrated the potential to have a catalytic impact via a range of public and private partners, systems and institutions on the profile and promotion of women in STEM in the countries concerned.

Programme design: The programme design was found to be overly ambitious in some areas for the timeframe and resourcing agreed, particularly with respect to expectations about the levels of training/employment transition and career advancement that would prove possible. Some issues of consistency and clarity within the results framework are also evident and there is further an over-emphasis towards the 'supply side' of the training/employment/career advancement nexus. Greater attention could have been paid in the development of the original design to the particular dynamics and requirements at sector and employer level for recruitment and career movement (noting the resources were limited to do this once implementation commenced). Nonetheless, the design has provided a sufficiently robust framework to guide the work of the programme team towards the establishment of relevant national partnerships (both existing and new within the ILO context), leading to good progress with respect to STEM-related technical and soft-skills development for women in public TVET and private sector settings.

A distinctive feature of the programme as practiced (rather than reflecting the initial design), is the emphasis that emerged on direct formal partnerships with private sector entities for the delivery of enterprise-based soft skills training. This began as part of a pilot-based initiative to test training materials and validate technical approaches. From 2019 onwards, formal agreements with firms were concluded through the ILO Bureau for Employers' Activities (ACT/EMP). Implementation has required a balancing of such relationships with the building over time of engagement at national level with employers' membership based organizations (EMBOs), particularly the respective national umbrella bodies which are the ILO's employer constituent in each country. A 'dual strategy' has been followed

in this context which (i) draws on the demonstrated employee and enterprise benefits of the programme's soft skills training to bring EMBOs 'on board' around the I-B training approach, while (ii) working with the national employers' bodies to strengthen relevant capacities for them to take on the long-term promotion and support of I-B within their constituency. The uptake by companies to date of the I-B programme, along with progress in engaging EMBOs in support of the programme, provide positive indications of the success of this strategy.

Adjustments to the results framework were made as necessary with donor concurrence, particularly around the level of ambition in some targets and indicators. One output was removed as a result of challenges experienced in practice, while others were later added. The strategic sector focus in Indonesia was also adjusted in light of contextual issues and implementation experience. The impacts of the COVID-19 pandemic led to further reorientations to programme design. These particularly focused on developing online training capacities and approaches, as well as an increased emphasis on the promotion of job readiness and employability skills. The shifts were managed efficiently and expeditiously in close consultation with partners and with donor concurrence.

Effectiveness: The programme is assessed as overall effective to date. Progress is evident towards meeting public TVET and enterprise-based targets with respect to STEM-related technical and soft-skills development. With regard to technical STEM-related in-company training, it should be noted that the successful initiation of the ILO/Ministry of Labour technical training programme on Data Analytics and Visualization for low-skilled women in Thailand was a major achievement in this regard, with over 1,500 low-skilled women workers in Thailand upskilled to date. A further 773 workers (mainly women) received STEM-related pre-employment technical training in public TVET institutions in Indonesia and the Philippines. For the soft-skills development component of the programme, some 16,652 workers (approximately 75 percent women) have undergone training. While the successful roll-out of the ILO I-B approach at Seagate Technology in Thailand accounts for a major part of these figures to date, some 23 further companies across the focus countries have been introduced to I-B, of which 15 have formally committed to implementing the model. In a relatively short period the overall training figures could both increase and reflect the diversity of companies engaged. These include additional major multinational companies such as Teleperformance, Samsung, Toshiba, HSBC, H&M, Mitsubishi, Nestle and Ikea.

Progress is also evident against indicators and targets related *inter alia* to (i) strengthening industry/ TVET links (for example, business sector input into the design of the data analytics and visualization training programme in Thailand as well as TVET STEM-related technical training programmes in the Philippines); (ii) enhancing public TVET STEM-related capacities, curricula and systems in Indonesia and the Philippines (including online in the COVID-19 context); (iii) first steps towards influencing national competency standards from a STEM-related perspective in Thailand and the Philippines; (iii) the engagement to varying degrees of the national Employer Membership-based Organizations (EMBOs) in the promotion and delivery of the ILO I-B programme; (iv) developing a multi-stakeholder STEM Technical Working Group (TWG) in the Philippines as the first step towards a STEM tripartite body; and (v) producing initial case study material to support the dissemination of programme good practice.

At the same time, the general absence of involvement of workers' organizations in the programme should be noted. The major exceptions in this context have been the initial outreach in the Philippines to engage several trade union bodies in the above-mentioned tripartite STEM platform; and collaboration with the trade union representative on the TESDA board around the STEM in TVET curriculum and the promotion of STEM within TVET competency standards. Greater attention in future

women in STEM promotion initiatives is needed to workers' organization engagement, as well as to the incorporation of the full set of ILO cross-cutting policy drivers.[5]

The programme has been effectively led and managed at regional and national levels. The commitment, energy and innovative orientation of the programme team is well regarded by partners and has been a key factor in the ability demonstrated to produce results in often challenging and rapidly evolving circumstances. The lack of provision for a dedicated full-time national officer in Thailand, however has proven to be a constraint in terms of adequately and consistently resourcing national implementation. The earlier absence for 6-7 months of a national officer in Indonesia likewise impacted programme implementation.

Efficiency: The programme is assessed as efficient in its use of available in-house and stakeholder human and financial resources, supplemented by the leveraging of additional resources through scholarships and in-kind contributions by public and private partners. All programme activities have been developed with and through national partner institutions and processes, with an orientation to adding value rather establishing parallel arrangements. The self-facilitated/activity-based ILO I-B soft skills training model has been a major factor in programme efficiency, with its demonstrated ability to effectively engage large numbers of training participants at low cost.

A further aspect of efficiency, closely linked to impact and sustainability, is the extent to which the programme synergized with and mutually reinforced other ILO programmes and projects at regional and national levels. Such linkages help to maximize the efficient application of resources, expand stakeholder outreach and ensure that lessons are more widely shared. In this context, the programme was found to be well integrated within the wider ILO Decent Work Country Programmes (DWCPs) in the focus countries. In particular close alignment is evident with national ILO skills development programmes in each case. In Thailand the Women in STEM programme is in fact the main skills development initiative under the DWCP. In the case of the Philippines, Women in STEM perspectives have been further incorporated into the local development of the ILO regional Skills for Prosperity programme, providing a good example of the potential for cross-programme synergies. While alignment is also evident at a 'higher' level with sustainable enterprise outcomes within the respective DWCPs, the associated significant outputs in each case are very much focused at MSME level or on entrepreneurship development.

Impact and sustainability: It is too early to adequately assess longer term technical and soft skills training and capacity development impacts and sustainability. However, the basis for these is clearly evident in STEM-related public TVET capacities developed; technical and soft skills imparted (with consistently high ratings of training provision by participants); the uptake (in particular) of I-B by private sector companies, with initial steps evident towards integration into corporate HR frameworks; new partnerships initiated and existing partnerships strengthened; and STEM-related institutional processes set in motion. One example of the latter is above-mentioned STEM TWG in the Philippines which is seen as a step towards a tripartite STEM cooperation and advocacy platform to *inter alia* contribute to the development of a multi-sectoral strategy for STEM workforce readiness and development.

Examples at a more specific level include (i) the commitments indicated by national and sectoral employer bodies in the three focus countries to the roll-out of the ILO I-B soft skills programme (including the conclusion to date of a first MOU with the Employers Confederation of the Philippines (ECOP) for I-B promotion, coordination and support); (ii) progress towards similar MOUs with the Employers Association of Indonesia (APINDO) and the Employers' Confederation of Thailand (ECOT);

[5] Gender equality and non-discrimination, international labour standards, tripartism and social dialogue, and environmental sustainability.

(iii) progress within the public TVET systems of Indonesia and the Philippines to mainstream STEM-related technical and soft skills and strengthen online training delivery capacities; (iv) the embedding of STEM-related technical skills training for lower-skilled women within the national training framework of Thailand's Department for Skills Development/Ministry of Labour; (v) the initial steps to mainstream STEM-related skills into national competency standards in the Philippines, along with the institutionalization within TESDA of the concepts and pedagogies introduced by the programme; (vi) improved (and new) links between relevant government entities, public TVETs and business in the three focus countries; (vii) steps by Seagate Technology in Thailand to integrate STEM-related technical and soft skills into their wider HR development framework; (viii) the incorporation of STEM-related elements into the design of the ILO regional Skills for Prosperity programme in the Philippines; (ix) the provision of resources and in-kind support by institutional partners (e.g. scholarships provided by TESDA); and (x) 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).

A key element in the above is the impact of the ILO I-B enterprise-based model for soft skills development. Stakeholder and trainee feedback indicates that this has proved to be an innovative, low cost, self-driven, sustainable and empowering training approach, which is eminently suitable for scaling-up within company HR and gender equality/diversity frameworks. The feedback of one major stakeholder indicated already observable benefits such as (i) improvements to the self-confidence of workers; (ii) expanded mutual support and learning networks among staff; (iii) enhanced staff understanding of the company big picture, along with improved strategic thinking; (iv) staff speaking-up more and contributing more actively to problem solving; (v) increased collaboration among staff; and (vi) increased productivity. These and other benefits to date in this case will be further examined in the above-mentioned parallel impact evaluation of the I-B programme.

As indicated in the following recommendations, it is important now to intensify deliberate and specific attention to programme sustainability, both in terms of measures than can be taken in the remaining programme period and in the context of longer term follow-up through ILO and other national and regional mechanisms, programmes and processes. The proposed programme Sustainability Action Plan will be an important driver in this regard.

Key lessons: The following lessons were identified for consideration in the remaining programme period as well as for future ILO engagement in this field. These are elaborated in Section 6 and aim to contribute to the full documentation of lessons learned which is planned under the programme's current results framework.

- Increasing the number of women in STEM is a multi-dimensional and multi-stakeholder agenda, to which this programme is contributing in strategic and targeted ways.
- The programme holds the potential to be an important catalyst for longer-term change vis-à-vis the women in STEM agenda in the focus countries.
- The programme approach and experience demonstrates the importance of investing in partnership development from the beginning as a key element of longer-term sustainability.
- Having a bigger picture view and strategy is critical in achieving the programme's core objectives, as demonstrated by the way in which the programme was able to balance engagement (including capacity development support) with the ILO's core employer constituents at national level on the one hand, and relating directly to private sector entities, on the other. However, requiring greater attention in this context for future women in STEM promotion are (i) engagement with the ILO's workers' organizations constituency, and (ii) incorporation of the full set of ILO cross-cutting policy drivers.
- The strategic sector focus approach in each country has brought focus, greater depth and added-value to programme implementation.

- Within this context, specific analysis of sector and company environments and HR dynamics (the 'demand side' of the training/employment nexus) is critical to (i) appropriately targeting programme resources, (ii) setting realistic indicators and targets and (iii) strengthening the basis to pay attention to the longer-term impact of training vis-à-vis career advancement.
- Effective skills development does not need to be a high cost exercise which is reliant on external expertise and inputs. The ILO I-B enterprise-based model for soft skills development demonstrates an innovative alternative approach which is low cost, self-driven, easily replicable, practical, sustainable and empowering.
- Sufficient time needs to be factored into programme planning to "sell" key concepts such as women in STEM and soft skills, identify champions to promote the programme and its vision, and to develop the critical relationships, institutional public and private capacities and buy-in needed for sustainable progress. Balancing this need with pressure to meet short term performance indicators agreed with the donor can be a challenge.
- M&E approaches and planning by needs to go beyond immediate feedback on training effectiveness to include periodic tracking by partners via their own systems and processes of longer-term impact in terms of career advancement and contributions to broader company objectives.
- Effective training delivery has many inter-related aspects which need to be taken account of. These range from the quality of teaching to the relevance of training content, the accuracy of translation of written materials and the personal learning circumstances of trainees engaging from home.
- Having the right skills and aptitudes within the programme delivery team, with scope to take initiative based on the context and experience, is critical to success.
- Internal programme / institutional dynamics are important – for example, synergies and mutual reinforcement between key institutional units.
- Potential exists for further strengthening links and synergies with other ILO skill development and employment-related programmes and activity at regional and national level.
- A stable and predictable programme funding environment is more conducive to ensuring longer term planning and a consistent focus on sustainability.
- The role, approach and adaptability of the donor can be a critical factor in programme effectiveness and impact.

1.2 Recommendations for consideration by the ILO and donor

Drawing on the findings of this report, and mindful of the remaining time and resources available under the current programme, the following recommendations are made for consideration by the ILO and donor:

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. The latter should include prioritized sustainability-related initiatives within the remaining programme period, the documentation of programme lessons for wider dissemination, and the development of a longer term Women in STEM Sustainability Action Plan to guide follow-up. To the degree feasible, outreach to relevant workers' organizations should be stepped-up in the remaining programme period to strengthen the basis for their ongoing engagement around women in STEM issues.

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:

i. 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. Expand I-B promotion and piloting in the healthcare sector in Thailand in line with commitments made with ECOT to this end.

ii. 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. *Inter alia* draw on the current ICT technical training underway in Indonesia (which includes a target of 100 on-the-job training opportunities / placements) for lessons with wider applicability, and draw on the ILO Indonesia programme's links with public employment services.

iii. 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.[6]

iv. Continue promoting and supporting steps to embed STEM-related skills into national TVET frameworks and curricula in the three focus countries. Further progress the incorporation of STEM-related skills such as team work and problem solving into the national competency framework in the Philippines. Pursue efforts with the Thailand Department of Skills Development / Ministry of Labour to incorporate the ILO I-B soft skills programme into the national training certification framework.

v. 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.

vi. Consider the incorporation of one additional round of TVET-based training in the Philippines to further test and refine the approach.

vii. Expand the Philippines STEM Technical Working Group into a full tripartite platform in line with its founding vision, with at least one tripartite meeting held before the programme end and agreement on measures to ensure ongoing functioning and development, including support as necessary through the ILO Country Office.

viii. In collaboration with relevant EMBOs and corporate partners, embed longer-term impact assessments into technical and soft skills training monitoring and evaluation arrangements.

ix. 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.

As part of the preparation of the plan, convene:

i. Country-level multi-stakeholder dialogues (including the ILO Country Offices and online involvement of ILO regional specialist staff) to review programme progress, lessons and measures for ensuring sustainability during the remaining programme period and beyond, in areas including those set out in Recommendation 2.

[6] 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.

ii. Sector-specific stakeholder dialogues in each country with a similar focus to the above, and including the revisiting of original programme intentions vis-à-vis the development of sector-specific women in STEM action plans.

iii. An online whole-of-programme team dialogue on progress, lessons and measures for ensuring sustainability to be implemented in the remaining programme period and beyond. Such dialogue should *inter alia* identify (i) ways in which specific elements of the programme can be incorporated into other ILO regional programmes (particularly the Skills for Prosperity programme in the Philippines case) and relevant national initiatives under the respective DWCPs; (ii) the human and financial resources needed; and (iii) the specific stakeholders and ILO units who should lead on follow-up.

The Sustainability Action Plan should revisit and consider proposing linkages and ways forward for elements of the current programme not able to be sufficiently progressed within the current programme resources and timeframe due to factors such as the impact of COVID-19 and the pressures of time and resources. Key among these are (i) the development of Women in STEM strategic sector action plans (if not already in place); (ii) the further development of relevant national competency standards (building on progress to date); (iii) increased employer/industry engagement with STEM-related TVET design and delivery; (iv) the capacitation and advancement of mid-skilled women into STEM-related company management and leadership roles, with government, EMBO and individual company support; and (v) attention to training/employment transition (with realistic targets). The latter area should include how to promote and facilitate links with 'job placement offices' (as referred to in the PRODOC).

A regional mapping of relevant initiatives of other multilateral and bilateral agencies should furthermore be conducted as part of the development of the sustainability plan in order to identify potential for synergies and mutual reinforcement to reinforce and continue programme progress to date.

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.

Such extension should (i) continue the overall focus on low-skilled and disadvantaged women; (ii) revisit and move forward key areas of 'unfinished' business from the current implementation period (refer to recommendation 2 on the sustainability plan); (iii) actively engage with workers' organizations in each of the focus countries; and (iv) mainstream the full set of ILO cross-cutting policy drivers (gender equality and non-discrimination, international labour standards, tripartism and social dialogue, and environmental sustainability).

Any such extension should be supported by a rolling three-year budgetary commitment and arrangement to facilitate longer term planning, subject to satisfactory annual progress reporting. The management structure should further aim to maximise the potential for country-based staff to take on responsibility for programme planning, implementation and resource allocation over the programme period, within the overall programme results, coordination and governance framework.

2. Contextual overview

Technological advances including digitalization, automation, robotics and artificial intelligence are rapidly transforming jobs and the skills workers need across Southeast Asia. The impact is greatest in STEM-intensive sectors of national economies where the majority of jobs require both technical knowledge, but also higher cognitive and communication skills.[7] In this context there is a growing demand from employers for STEM competencies, including communication, collaboration, critical thinking and creativity (known as the 4Cs). Processes and attitudes related to these skills are associated with subjects in science and mathematics, engineering and technology.[8]

Box 1: What are STEM competencies

Competencies are the combined knowledge, skills, and attitude of an individual that enable successful performance. STEM competencies are the integrated understanding of concepts, laws, and principles of Science, Technology, Engineering, and Mathematics, their relevant processes and technical skills for inquiry and innovation, as well as, attitudes that enable an individual to address personal, community, industry, and local/global economic needs.

A STEM competency perspective emphasizes holistic STEM in terms of the integration of knowledge, skills, and attitudes. It suggests that for an individual to be competent in STEM, one has to understand scientific/mathematical concepts that support observations, as much as, being able to argue, inquire, or innovate. Moreover, the interplay of knowledge and skills should be guided by scientific attitudes such as objectivity and openness.

Source: 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.

At the same time, technological advances are increasingly putting millions of current jobs at risk across the region, with an estimated 137 million salaried employees facing job displacement within the next 20 years.[9] Despite the increasing number of women STEM tertiary graduates in the region,[10] graduating, women are more at risk of losing jobs as a result of technological change. In 2016, the ILO assessed automation risk of occupations in Cambodia, Indonesia, Philippines, Thailand, and Vietnam, which comprise 80 percent of the total workforce in the 10 ASEAN member states. The study found that 56 percent of employment in the ASEAN-5 are facing high risk of automation. In the case of Indonesia, 56 percent are at high risk and the most affected sector is garments, textiles and footwear (GTF). In the Philippines, 49 percent of jobs face high risk of automation, with the BPM sector as the most affected. 44 percent of jobs in Thailand are at high risk, particularly in the automotive, electrical and electronics (E&E), and GTF sectors.[11]

Ensuring that women and men in the workforce are equipped with STEM-related knowledge and skills which are relevant to the rapidly evolving world of work is a key element of ensuring that they can

[7] Khalid Hassan, Director of the ILO Country Office for the Philippines. Media statement on occasion of launch of ILO report entitled: "Leading to Success: the business case for women in business and management in the Philippines," supported by the ILO Women in STEM programme.
[8] Ibid
[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] For example, in Indonesia, women accounted for 37.5% of tertiary STEM graduates in 2017. In the Philippines, women accounted for 36.3% in 2017. In Thailand they accounted for 29.7% 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
[11] 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.

thrive in the changing environment and have access to decent livelihoods, while contributing to meeting the needs of development across all aspects of the economy. However, female representation is low at all levels of the STEM career pipeline across the region, from initial interest to education, training, prioritizing employment and actual employment. While women are increasingly outnumbering men in higher education enrolment, their engagement drops off when it comes to STEM-related disciplines. Among students surveyed by the International Labour Organization (ILO) in 2016, only one in six who said they were majoring in STEM courses were women.[12]

Women in STEM-related sectors across Southeast Asia face a variety of challenges that reduce entry, retention and advancement, including into senior management and leadership roles. There are many dimensions within these challenges. These include systemic biases, stereotypes and beliefs rooted in discriminatory social norms that represent STEM as more of a "man's world," thus discouraging young women from pursuing STEM-related education, training and careers.[13] Once employed in STEM-intensive sectors, women typically face ongoing barriers to their ongoing skills development and career progression, resulting in a higher tendency to drop out than males. It is this context that the Women in STEM Workforce Readiness Programme was conceived, designed and initiated.

3. Programme background

Overview: The Women in STEM programme collaborates with government and the private sector (including employers and business membership organizations) 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, and (iii) support national skills development strategies, plans and initiatives in responding to the requirements of the 4th Industrial revolution (Industry 4.0).

The programme aligns with ILO Programme and Budget Strategic Policy Outcome 1 (more and better jobs for inclusive growth and improved youth employment prospects) and Outcome 4 (promoting sustainable enterprises). It further aligns with ILO Recommendation No.195 (2004) on human resources development, education, training and lifelong learning. At a more specific level, it aligns with the following country level CPOs:

IDN 126 - Increased capacity of the ILO constituents to strengthen policies and programmes to ensure equal opportunities and treatment for men, women, persons with disabilities and other groups in vulnerable situations.
IDN129 - Improved policies and programmes 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)
PHL101 - Strengthened policies and programmes for employment creation of young people, vulnerable and marginalized 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 programmes implemented to support green, productive and decent employment and income opportunities (Indicator 4.2)
THA228 - Skills Development (Indicator 1.2)

The programme further aligns with the prioritization within the respective Decent Work Country Programmes (DWCPs) of (i) skills development to meet Industry 4.0 needs; (ii) sustainable enterprise

[12] 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/
[13] Ibid

development; and (iii) gender equality as a cross-cutting policy driver (including specific STEM for women elements).

Within this framework, the initial programme design focused on two major technical areas:

(i) workforce readiness, including pre-employment skills development for women to facilitate the acquisition of demand-led STEM-related skills and improve their employability
(ii) workforce development, including skills 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 mutually reinforcing development of soft skills alongside STEM-related technical skills is an integral element of the programme concept and approach.

Programme strategy: The original programme concept centred on the development of demand-led STEM and soft skills among women in selected sectors in the three focus countries in order to support workforce development to contribute to increased enterprise productivity, enhance employability, transition from training to jobs and career advancement (and at the same time contribute to increased company productivity and competiveness). Three broad strategies underpinned the approach: (i) Supporting underprivileged female secondary or post-secondary TVET graduates into sustainable entry-level STEM positions with career prospects; (ii) supporting already employed women in STEM-related fields to upgrade their technical and soft skills to move up to mid-level STEM employment; and (iii) supporting mid-level women working in STEM fields into leadership/managerial roles (this component later removed) as a result of programme implementation experience). The intention was to codify such efforts into TVET systems and practices as well as into industry tools that can integrated into the human resource practices of firms committed to training, hiring, retaining and promoting women in STEM-related positions.

A further key element of the original programme strategy was to implement the above approaches within prioritized sectors of the respective focus countries. The strategic sectors selected in each country were the automotive sector in Indonesia, the IT and Business Process Management (IT-BPM) sector in the Philippines and the electrical and electronics sector in Thailand. These were assessed as high-growth sectors which presented significant STEM-related and soft skills needs; were rapidly evolving and becoming more innovative; and offered opportunities for growth for women's employment over the next decade. As a result of contextual and implementation challenges, however, the programme shifted its focus to the ICT sector in Indonesia and subsequently included the retail sector as part of its pandemic response. Women in STEM-related roles in the healthcare sector were further included in Thailand on the advice of the Employers Confederation of Thailand.

Synergies and mutually reinforcing links between STEM-related technical and soft skills training: As the programme demonstrates in practice, skills development in these two areas are both integrally-linked and mutually reinforcing, with skills development around communication, collaboration, critical thinking and creativity (the '4Cs') at the core of both. In this context, the soft skills dimension of the Women in STEM programme can 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. Training supported by the programme of a more technical nature already includes elements of soft skills development – for example the planned inclusion of public speaking skills in the second phase of training for TVET instructors to develop and present online learning in Indonesia.

Key partners: The programme collaborates with:

(i) 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) National and sectoral EMBOs to develop long-term arrangements and capacities to provide soft skill training programmes for workforce readiness and development.
(iii) private sector companies in STEM-intensive sectors for delivery of soft-skill training through the ILO I-B programme to their employees, with a focus on low-skilled women within the workforce.

The programme aims to support implementing partners in the following key areas:
(i) industry engagement in skills needs identification as well as training design and delivery
(ii) developing mechanisms for public-private dialogue and collaboration in order to improve school-to-work transition of TVET graduates
(iii) enhancing the capacity of TVET instructors to mainstream higher order thinking skills within public TVETs
(iv) developing 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) promoting public-private collaboration to jointly design and deliver enterprise-based training programmes with particular focus on low-skilled women workers
(vi) raising awareness among young women of the career opportunities in STEM and improving enrolment rates of women in TVET in related areas.

Outputs of the programme: In the ILO/J.P. Morgan Chase Foundation programme agreement, the following were listed as Expected Outcomes. However, as later elaborated noted, they are identified as outputs in subsequent programme documentation.
1.1 Development of sector-specific STEM skills and employability action plans for women in each of the ASEAN-3 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 (*Later dropped from the results framework*) 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.
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.

To these, the following were subsequently added 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 programme.
4.1 Mobilize support of training institutions, sector employer associations and firm partners in each country, to provide institutional support to the programme.
4.2 Carry out in-company training programmes leading to career advancement of participants.

Programme management: At the regional level, the programme operates from offices within the ILO's Decent Work Technical Support Team (DWT) in the ILO Regional Office for Asia and the Pacific in Bangkok. Under the general guidance of the DWT Director, the programme has been managed on a day-to-day basis by a Technical Officer (TO), Enterprise Development and Skills. This role reports directly to the DWT enterprise development and skills development specialists based in Bangkok. At country level, the programme is managed and supported by two programme officers and one full-

time finance officer in Indonesia; and one programme officer and a full-time finance officer in the Philippines. The regional TO role is responsible for programme implementation in Thailand, supported by a part-time finance officer. The national programme and finance/administration staff in Indonesia and the Philippines report directly to the ILO Country Director. Further technical and administrative backstopping is provided by a part-time administrative officer in the ILO Regional Office for Asia-Pacific in Bangkok.

4. Evaluation background

Purpose: Taking account of the reorientation of programme priorities and approach required by the COVID-19 pandemic, as well as adjustments required as a result of implementation experience in the first two years, the evaluation aims to provide:

1. an independent assessment of progress to date of the programme, including performance as per the foreseen targets and indicators of achievement at output level; strategies and implementation modalities; partnership arrangements, constraints and opportunities; and
2. recommendations for the remaining duration of the programme in terms of strategies, institutional arrangements, partnership arrangements and revisions to the results framework and other areas of programme design and implementation.

The evaluation is being conducted in parallel to an impact evaluation of the ILO's In Business soft skills programme for women in STEM occupations within the focus countries. This will *inter alia* assess the extent to which In Business training has resulted to date in productivity gains by participating companies and in the achievement of overall company outcomes.

Scope: The evaluation is an internal mid-term exercise which covers the period September, 2017 until July, 2020. The scope includes all outcomes of the programme with particular attention to synergies across and between components. The evaluation assessed key outputs produced since the start of the initiative and where relevant makes recommendations with respect to:

(i) achieving the programme outcomes (as appropriate in the COVID-19 pandemic context)
(ii) achieving quality outputs
(iii) managing internal and external factors that influence programme implementation
(iv) programme management and coordination, including staff management
(v) the extent of tripartite partners buy-in, ownership and participation
(vi) strategic fit of the initiative with national development priorities/frameworks; national business association policies and priorities; participating private sector policies; and priorities and ILO policy and programming priorities globally, regionally and nationally.
(vii) synergies with other ILO enterprise and skills development programmes in the region.

Evaluation clients: The primary clients of the evaluation are the J.P. Morgan Chase Foundation, as the donor of the initiative, ILO Regional and Country Offices in Manilla, Jakarta and Bangkok and the programme team itself.

Evaluation criteria and questions: These provide the basis of Section 5 of this report and are detailed in the Terms of Reference (Annex 7). They set out specific lines of enquiry in the following areas:

(i) relevance and strategic fit
(ii) validity of design
(iii) programme progress and effectiveness
(iv) efficiency of resource use
(v) effectiveness of management arrangements

(vi) impact orientation and sustainability.

Addressing gender concerns: Promoting gender equality and women's empowerment is at the centre of programme design, focus and expected outcomes. A key reference in this context is the set of ILO Guidelines on Considering Gender in Monitoring and Evaluation of Programmes (September 2007). A key consideration in this context is the extent to which gender considerations are owned, institutionalized and mainstreamed by the project's governmental and business partners.

Evaluation quality: The evaluation was conducted in line with 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). A mixed methods approach was applied, bringing together available quantitative data with qualitative data based on semi-structured interviews with selected programme interlocutors, with rigorous triangulation of information. The evaluation's overall approach is guided by the principle of credibility – that is, ensuring that the best evidence available is harnessed, and that it is analysed appropriately to generate findings, conclusions and recommendations that ILO management and the programme team can feel confident acting upon.

Methodology: The evaluation was carried out through a desk review and interviews by phone/skype/zoom with ILO staff and key stakeholders.

The desk review covered programme and other relevant documentation provided by the programme management. Interviews with ILO staff covered Regional and Country Offices, programme staff at regional and country level, and Skills Development, Enterprise and ACT/EMP specialists who are providing technical backstopping for the programme. Interviews with selected partner representatives included public sector TVET counterparts; national employers' organization representatives; and two private sector counterparts (Seagate Technology in Thailand and Teleperformance in the Philippines).

Evaluation oversight and management: The evaluation was conducted under the direct supervision of the regional Women in STEM programme TO, with reference as necessary to the programme specialists who are providing technical backstopping. The ILO Regional Evaluation Office provided overall oversight and evaluation quality assurance. The workplan for the evaluation is set out in Annex 6.

Evaluation limitations: In line with the evaluation's status as a mid-term internal exercise conducted late in the programme implementation period, the qualitative component of the process was restricted to a small number of strategically selected interviews. Available programme documentation and follow-up email correspondence was used to the extent possible to address gaps in this context. A lack of consistency (as elaborated later) in the use of the terms 'outcomes' and 'outputs, along with quite extensive annual changes to indicators and targets were navigated in tracking progress in a coherent way. The shift in programming priorities and approach due to the impacts of the COVID-19 pandemic meant that this became a key focus of evaluation enquiries and was an important factor in the ability of the programme to progress certain outputs. Due to pandemic-related restrictions, all interviews were conducted online.

5. Key evaluation findings

5.1 Strategic fit

a. Is the programme relevant to national development plans, Decent Work Country Programmes (DWCPs) and the SDGs?

A review of women and STEM expected outcomes, outputs, indicators and targets affirms the alignment of the programme with the following SDG targets in particular:

SDG 4 (Quality education and lifelong learning*):* Target 4.3 - Ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education; Target 4.4 – Substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship; Target 4.5 -Eliminate gender disparities in education and ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations; Target 4.7 - Ensure that all learners acquire the knowledge and skills needed to promote sustainable development.

SDG 5 (Gender equality): Target 5.1 – End all forms of discrimination against all women and girls everywhere; Target 5.5 – Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.

SDG 8 (Decent Work and Economic Growth): Target 8.3 - Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage formalization and growth of micro-, small- and medium-sized enterprises including through access to financial services

With respect to alignment at national level in the focus countries, a review of relevant documentation affirms that the Women in STEM programme links directly to national development, Industry 4.0, skills development and gender equality laws, policy frameworks, strategies and plans as follows:

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;[14] (ii) 'Making Indonesia 4.0,' the country's national plan to meet the needs of Industry 4.0;[15] 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;[16] (ii) Industry 4.0 Roadmap;[17] and (iii) the Republic Act 9710: Magna Carta of Women.[18]

Thailand: Socio - Economic Development Strategy, the Twenty - year National Strategic Framework

[14] Available at https://www.bappenas.go.id/files/6715/3173/4665/RPJPN_2005-2025.pdf

[15] Available at https://oxfordbusinessgroup.com/analysis/technology-comes-four-making-indonesia-40-seeks-strengthen-digital-economy-and-attract-foreign

[16] Available at http://www.neda.gov.ph/philippine-development-plan-2017-2022/

[17] Refer to https://www.pna.gov.ph/articles/1114871

[18] Available at https://pcw.gov.ph/republic-act-9710-magna-carta-of-women/

(2017-2036) and the Twelfth National Economic and Social Development Plan (2017-2021);[19] the Thailand 4.0 Development Plan Skill Development Promotion Act (2002);[20] Thailand Gender Equality Act (2015).[21]

With respect to **DWCPs** in the focus countries, the Women in STEM programme aligns with outcomes in each case related to skills development and/or competencies and (at a 'higher' level) with outcomes related to sustainable enterprise development. In the latter category the associated significant outputs are very much focused at MSME level or on entrepreneurship development. Hence the direct programme/DWCP synergies are not as strong for this component of the programme. The following summary highlights the alignments with the skills development outcomes within each of the focus country DWCPs.

- **Indonesia.** Outcome 2.1: Enhanced skills development programme and policy, and labour market governance for improved employability of youth.[22]
- **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.[23]
- **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.[24]

Current DWCP commitments (those related to both skills and sustainable enterprise development) offer links around which the Women in STEM programme can build with a view to strengthening women in STEM momentum and profile. The prioritization in the current Indonesia DWCP of quality apprenticeships further links to the specific references in this regard under four of the five expected outcomes of the original Women in STEM programme agreement with the J.P Morgan Chase Foundation. Apprenticeships are proposed in one outcome, for example, 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, the experience of implementation of DWCP commitments to quality apprenticeship in Indonesia indicates limited potential at this stage for integration of women in STEM perspectives.

b. How well does it complement the ILO strategic framework and other ILO programmes in the region?

[19] ILO-Thailand Decent Work Country Programme (DWCP), 2019-2021.
[20] Ibid
[21] Human Rights Watch. Available at https://www.hrw.org/news/2015/09/21/thailand-gender-equality-act
[22] 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
[23] Ibid
[24] Ibid

Seven Centenary Initiatives provide integral elements of the ILO's Strategic Plan for 2018–21. Key among these for the Women in STEM programme are the Women at Work Initiative, the Enterprises Initiative and the Future of Work Initiative. The ILO Programme and Budget 2020-2021 applies the strategy in practical terms to the organization's programming at global, regional and national levels. Key outcomes and outputs in this context are:

Outcome 4: Sustainable enterprises as generators of employment and promoters of innovation and decent work; Output 4.2. Strengthened capacity of enterprises to adopt new business models, technology and techniques 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 the ILO constituents to design and deliver innovative, flexible and inclusive learning options, encompassing work-based learning and quality apprenticeships

Paragraph 151 under this outcome further prioritizes ILO support to constituents in diversifying learning options for women through lifelong learning in non-traditional occupations, encouraging young women to engage and remain in science, technology, engineering and mathematics occupations. The emergence in the COVID-19 context of a focus within the programme on capacities, skills and curricula for online learning have subsequently brought the following commitment under paragraph 151 into sharper profile: Promoting the use of new and emerging digital technologies to strengthen the delivery, assessment and certification of learning, with emphasis on gender equality and social inclusion.

At regional level, priorities and directions for ILO engagement in Asia and the Pacific are set out in the ILO Bali Declaration adopted at the 16th Asia and the Pacific Regional Meeting in Bali, Indonesia, on 9 December 2016. The programme aligns in this context with the commitment under 'Priorities for national policy and action' to (i) an enabling environment for sustainable enterprises and entrepreneurship; (ii) 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 (iii) 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 barriers to women's labour force participation and advancement.

Multi-country programmes and projects are a core component of ILO engagement in the region.[25] One current initiative of particular relevance to the Women in STEM programme is the UK-funded Skills for Prosperity in Southeast Asia Programme (SfP-SEA), 2019-2023. This aims to contribute to increasing national capacity to achieve sustained and inclusive growth through the enhancement of skills development and TVET systems in Malaysia, Indonesia and the Philippines (overlapping with two of the Women in STEM focus countries). To achieve this, the programme works with government agencies, employers' organisations, trade unions, educational institutions and other partners the three countries to facilitate review and reform of their skills development and TVET system strategies and policies. Expected results of particular relevance to the Women in STEM programme include (i) increased equity in access to TVET, male-dominated job markets and entrepreneurship opportunities for women and vulnerable populations through changes to skills development and TVET/HE system programmes and policies; and (ii) improved quality of skills development and TVET systems through

[25] In addition to the Skills for Prosperity in Southeast Asia Programme (SfP-SEA), Oother current ILO multi-country skill development projects in Asia and the Pacific include (i) the ILO/China Project on Strengthening Skills Development in Cambodia, Lao PDR and Myanmar through South-South and Triangular Cooperation (SSTC); and (ii) Industry Skills for Inclusive Growth (InSIGHT) Phase 2 – Philippines. The latter focuses on a skills-driven approach as a sustainable pathway to support and maintain inclusive growth.

upgrading curriculums and occupational competency standards, capacity development of instructors, promotion of lifelong learning, and improvement in labour market data collection and analysis.

Looking ahead to measures to ensure the sustainability of achievements of the Women and STEM programme, the Skills for Prosperity Programme 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 around the IT-BPM sector. The Women in STEM programme has furthermore contributed to the incorporation of STEM into local SfP-SEA design (see later elaboration).

Efforts of the programme to link STEM-related skills development, job quality and productivity will also continue to be synergized by the ILO regional enterprise development unit with other relevant ILO initiatives in the region. These include the following projects: Supporting Soft Skills for Youth in Cambodia funded under the ILO/Japan collaboration and implemented with the Ministry of Tourism, Ministry of Education and Ministry of Labour; and the Decent Work in the Garment Sector Supply Chains in Asia' project funded by the Government of Sweden. This project has spearheaded the design and implementation of the Factory Improvement Toolset (FIT) programme in the garment industry. As a self-facilitated, activity-based learning programme, FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

At **national level**, the relevant women in STEM alignments to ILO DWCPs in the three focus countries are set out under Question above 1 (a) above.

c. How well does it fit with the J.P. Morgan strategy.

The programme aligns well with the J.P. Morgan Chase Foundation focus on supporting programmes "designed to promote workforce readiness; small business expansion; financial capability; and community development."[26] In this context, the foundation's 'New Skills at Work' programme aims to identify strategies and support data-driven solutions that help improve labour market infrastructure and develop the skilled workforce globally. Under this programme, the foundation has partnered with the ILO globally to support a 'Skills that Work Project: Improving the employability of low and middle-skilled workers' (2017-2019). This 18-month 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 well-paying jobs in growing industry sectors. The current Women in STEM programme fits well into this previous ILO/foundation cooperation. It further aligns 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 programmes.[27]

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

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

5.2 Validity of design

a. How adequate was the design process, e.g. is the programme design logical and coherent and based on relevant evidence?

The driving assumption underpinning the programme (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 organizations will be interested and able, with ILO support, to deliver relevant TVET-level skills and enterprise-level women's employment support activities. Programme experience to date indicates that private company demand can be variable in practice, at least in Indonesia. While the demand for STEM-trained women in the male-intensive automotive sector proved to not be strong enough to sustain the development of programme 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 are still advertising for new recruits.

In terms of analysis and available ILO tools, the original programme design was weighted more to the 'supply side' of the women-in-STEM training/employment/career advancement continuum, with greater clarity and understanding of the dynamics of the demand side developed through commissioned research and experience as implementation progressed. One lesson learned concerned the importance of sector and company specific analysis of employment and career pathways – i.e. the approach that applies in one case does not necessary apply in the same way in another case. Although an initial skills demand analysis was carried out at the beginning of the programme, subsequent experience has indicated that further analysis and measures were needed to ensure progress towards the ambitious training-to-employment indicators and targets agreed with the donor at the programme's commencement. Further efforts to address this transition are needed, in collaboration with partners and albeit constrained by COVID-19, during the remaining programme period. One such initiative already underway in this regard, as noted elsewhere, is the current technical training activity underway in Indonesia, which includes provision for the creation of 100 on-the job training /employment opportunities.

At the same time, as indicated in Programme Snapshot 1, Seagate Technology in Thailand has noted an increased orientation among staff trained in soft-skills towards teamwork, networking and active participation in workplace discussions, among others.
Therefore, the project started with the. However the analysis was only a part of the equation to facilitate training-to-work transition, and what we needed was to put My personal assessment is that there was shortcoming in putting these 'measures' in place during the review period of implementation and the project needs further efforts to address this during the remaining period.

Initial impressions gathered by the evaluation (but not tested via survey or other means) indicate that likely 'up-take' of the programme is enhanced where the concerned entity (EMBO 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, linked to global commitments including the Sustainable Development Goals (SDGs) and Beijing Platform for Action, 1995. But these do not necessarily translate into practice at the operational level and require continuous promotion and reinforcement.

With respect to potential programme risks, the PRODOC recognized that capacity gaps among TVET institutions as well as private companies would require analysis and targeted attention under the programme. However, while the possibility of political tensions and natural disasters was recognized as risks in the countries concerned, no-one could have foreseen the impact of the COVID-19 pandemic,

striking as it did at a crucial time in programme development as key training components were gaining traction and partnerships with public and private counterparts were firming-up. The PRODOC 'Assumptions and Risks' table provides for mitigating actions that (i) might include changing sector selection (as proved necessary with respect to the automotive sector in Indonesia, with healthcare also being added to programme focus in Thailand); and (ii) assessment of partner capacities and consolidating partnerships at the early stage of implementation, with adjustments made to programme planning and approach accordingly (as also proved necessary).

The programme design further drew on a number of lessons from previous similar engagements. These included (i) the potential added value of the ILO 'Skills for Trade and Economic Diversification (STED) tool (explored but in the end not applied); (ii) the potential for linkages with the ILO's quality apprenticeships programme (built into the programme design but not yet followed-up to any meaningful extent in practice); (iii) the expertise developed by the ILO in the review and development of national (and ASEAN) competency standards (also built into programme design, but only progressed to a limited extent to date with respect to competency development as against competency mapping); and (iv) the comparative advantages of the ILO In Business soft skills training methodology (the application of which has been a major success area within the programme).

One aspect of programme design which complicated the mid-term evaluation process is the lack of clarity and consistency in documentation about the distinction between outcomes and outputs. For example**,** the Expected Outcomes in the Agreement between the ILO and the J.P Morgan Chase Foundation of 7 September, 2018 are shown as Outputs in subsequent programme documentation and reporting. The original PRODOC used both terms in different sections for the same set of commitments. The original agreement with the donor also did not include the set of Immediate Objectives shown in the PRODOC, which have also been used in subsequent programme planning and reporting documentation. The PRODOC furthermore does not set out a clear Development Objective to underpin the programme. Rather it includes a descriptive paragraph outlining key alignments and elements of the programme.

Taking these observations into account, it is concluded that the programme design nonetheless does sufficiently make clear the rationale for the attention to women in STEM, the methodologies to be applied, and the overall results to be achieved (albeit revised as the programme progressed). That further development of these will follow as a result of further research and consultations in specific areas is anticipated in the PRODOC (e.g. via partner consultations, market research on gender gaps and skills shortages, skills gaps assessments, review of competency standards, etc). However, while the annual adjustments to programme KPIs and targets proved necessary in light of implementation experience, the associated annual stop/start approach applied to the programme before further funding was agreed for the following year proved to be a source of uncertainty for programme staff and an impediment to longer-term continuous planning.

With respect to the grounding of programme design on the available evidence, on the surface the rationale presented in the PRODOC for selection of the automotive sector in Indonesia as a strategic focus appears justified (in terms of importance of the industry within the national economy). However, a more in-depth analysis drawing on stakeholder local inputs may have brought the barriers to progress at this time into greater focus. In practice these barriers were assessed as being sufficient to justify a decision to withdraw (at least for now), with a redirection of efforts and resources to Indonesia's ICT sector. But at the same time it can be said that momentum was lost in the first year of the programme as a result of the initial sector selection the first year of the programme as a result of the initial sector selection (compounded by the absence of a national officer for 6-7 months in the second year of programme implementation). The positive aspects of the experience included (i) the establishment of initial industry links that could be picked-up in future ILO programming; (ii) a demonstration in practice of the importance of flexibility, adaptability and openness to learning; and

(iii) 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 programme design of early consultation with key national stakeholders was also highlighted in the Thailand context, where the Employers Confederation of Thailand reported that they were not engaged in the original strategic sector selection.

Another example of the importance of a strong programme grounding in locally specific analysis is provided by the Indonesian ILO experience with respect to TVET provision. Participation in TVET and other training courses is often residentially-based, requiring two or more months living in a dormitory. Prevailing gender norms can create barriers in this context for young women and their families. 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 programme design and expectations, particularly with respect to engagement with disadvantaged women.

Given the importance attached in initial programme planning documentation to the review and development of national competency standards, the grounding of the programme could also have been strengthened by an initial summary analysis within the PRODOC of the national competency and qualifications architecture of each focus country (e.g. the requirement for legislative change to change the national competency framework in Thailand). This would have been helpful to guide initial decision-making on the approach, capacities, resources and investment of time required to advance work in this area.

b. Are the activities and outputs causally linked to the intended outcomes that in turn link to the broader development objectives?

As noted above, there is lack of clarity and consistency in and between the PRODOC, donor agreement and subsequent results frameworks on outcomes and outputs. Additionally, a clear and concise overarching development objective is also not set out in the PRODOC. The programme indicators and outputs were furthermore revised annually in light of experience, mainly to reduce initially high expectations in key areas as detailed elsewhere.

However, stakeholder feedback and document review indicates that a clear working understanding exists across the programme on its objective as follows: 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 account of the annual and COVID-19 related adjustments to the results framework made with donor concurrence, it can be see that there is a solid causal link between the (above) development objective and programme outputs and activities.[28] These are briefly summarized 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 (including employability) skills which would enable them to be better positioned to transition into STEM-elated employment in due course, subject to recruitment demand and opportunities, particularly in the post-COVID-19 job market.
- Output 2.2 saw an increased number of currently employed low-skilled women employees equipped with technical and soft skills which will better position them for lateral or upward career movement in due course in the context of particular sector and company HR polices and practices.

[28] As already noted, Output 2.3 on the movement of mid-skilled women into leadership and management pathways was removed from the programme results framework.

Such skills further contribute to the achievement of enterprise development objectives, including with respect to productivity improvement.

- Output 2.4 saw a number of initial initiatives move forward to better link industry, government training units and public TVET institutions around training design and delivery, and (in the Philippines case) 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) saw an increased focus on TVET graduate /STEM-related job readiness, including through skills to establish online businesses and development of public TVET capacities and systems for improving graduate job readiness.
- Output 3.2 saw increased awareness on the part of selected EMBO and individual corporate partners of the value to them of increasing their support for recruitment of women into STEM roles (although the onset of COVID-19 delayed further progress in practice).
- Output 4.1 saw increased EMBO support (formalized in one case) for the promotion and delivery of the ILO I-B soft skills training programme, public sector contributions through scholarships to supplement programme resources, and company coverage of staff costs related to technical and soft skill training activities.
- Output 4.2 saw the production of initial case study material to promote good practice in enterprise-based soft skills development.

Through all the above, relevant public and private STEM-related entities have been strengthened in critical targeted areas through capacity development activities under the programme. Taken together, these outputs and their delivery to date (despite the overly ambitious targets and indicators in certain areas) have contributed tangibly 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.

c. Are the targets and indicators realistically and sufficiently defined for the programme? d. Considering the results that were achieved so far, was the programme design was realistic?

These two questions combined due to the overlaps and synergies between them.

Even before the programme reorientation required as a result of the COVID-19 pandemic, a number of other adjustments had been necessary due to experience with programme delivery, in each case with donor concurrence. As indicated earlier, these were largely associated with adjustments to original targets and indicators which had been pitched too high in the context of the available programme resources and timeframe. Key among these 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) were identified as having a low probability of achievement, particularly within the COVID-19 pandemic context. Accordingly, the programme has adjusted the focus of implementation in this context to on-the-job training opportunities and employability training for training beneficiaries, rather than solely on placement in full-time employment per se. This shift was reinforced by the programme reorientations required in response to COVID-19.

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 (the assessment of which is still subject to longer term tracking).

Output 2.3: This output with its (unrealistically high) 60 percent target for the transition of trained mid-skilled women into STEM-related leadership and management positions was dropped from the results framework, with resources transferred to support implementation of Output 2.2.

This decision was taken in close consultation with the donor. The focus of implementation of 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 had been to also 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. This is currently available in the DSD portfolio. However, data from the latest Labour Force Survey alongside a number of firm visits confirmed the number of women in such positions (i.e. technician) was very limited (10 to 15 percent of the total). 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 receiving training already from their firms. The assessment was made in this context that those at higher risk of being displaced by automation and subsequently in most need for training provision were the majority of women workers in entry-level jobs, both on the production floor and clerical support. A decision was accordingly taken prioritize this large segment of the workforce in Thailand for both technical and soft skills training, the latter through the ILO I-B programme.

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 along with those in entry-level jobs in soft-skills training through the ILO I-B programme. 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, in part the original intent of Output 2.3 was carried forward in the Philippines I-B implementation context. It should be also noted in this regard that that the programme had no upskilling and/or reskilling component through technical skills provision in Indonesia or the Philippines, unlike in Thailand.

While acknowledging the rationale for the removal of Output 2.3 and its subsuming under Outcome 2.2, the shift leaves an important gap in the original programme concept. This 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 over time would in turn contribute to creating opportunities for other women due to factors such as the 'role model effect' and the priorities women would bring into such roles.

Two major companies which are part of the programme, Seagate Technology (Thailand) and Teleperformance (Philippines), have indicated that their internal gender equality and diversity polices are an important factor in their involvement. The Employers Confederation of the Philippines (ECOP) also emphasizes this factor and sees the programme as adding value to the implementation of their commitments in this regard. ECOP and the Philippines Business Coalition for Women Empowerment (PBCWE – also a programme partner) have further publically committed themselves to supporting more women in business leadership and management (see later reference). Factors such as these could have lent themselves to at least a pilot training exercise in line with the intent of Output 2.3. Accordingly the evaluation recommends that the intent behind the output be revisited and appropriately carried forward to any programme extension, as well as in the formulation of the Sustainability Action Plan.

As elaborated above, the initial sector focus on the automotive sector in Indonesia was also removed from the programme due to an initial underestimation of the complexities involved in shifting gender dynamics within the highly male-centric industry. With the decision to shift the strategic sector focus to ICT, the programme began to move ahead. Implementation experience to date indicates that the ICT offers more opportunities for women with relevant STEM-related skills. It is also possible for

training to be undertaken online at home and for work to be conducted from home in lock-down circumstances if necessary.

Taking the above into account, the original programme concept and design (as reflected in the original targets and indicators) was clearly overly ambitious in certain key areas in light of the programme timeframe and available resources. An underestimation is apparent of the complexities involved and time required to move training/employment and career transitions forward in the context of labour market and in-company factors such as (i) the particularities of company and sector career paths, and (ii) the impact of discriminatory gender-related social norms on the engagement of women in training and employment.

As noted above, the stronger anchoring of the programme design within local training/employment transition and sector dynamics would have benefitted from more engagement with locally-based stakeholders. This could have provided in-depth analysis to support the development of realistic indicators and targets. The designation of the first six months (if not 12 months) as an inception phase during which key assumptions and the results framework were tested and refined, would have also proved helpful.

e. Has the design and implementation adequately considered cross cutting issues like gender?

Gender equality and non-discrimination is one of the ILO's core cross-cutting policy drivers (ILO Strategic Plan for 2018–21). The focus of the programme on Women IN STEM puts gender equality considerations at the core of design, implementation, monitoring and evaluation. Already it is clear that a major factor inhibiting 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.

At the same time, other cross-cutting policy drivers set out in the current ILO Strategic Plan are not explicitly reflected in the current programme design. These are international labour standards, and tripartism and social dialogue, and environmental sustainability. The reference to non-discrimination further points to the position of person with disabilities, among other groups experiencing discrimination in education, training and the workplace.

These further cross-cutting considerations are applicable to the programme, and have already been demonstrated to a limited extent in practice. International labour standards are a crucial consideration related to the quality of STEM-related employment, while social dialogue and tripartism are foundational to the ILO institutional make-up and modus operandi. However, it is notable that, outside the planning for the Philippines tripartite STEM platform, there is no explicit reference to the position and role of workers' organizations in current programme delivery, even though trade unions have a well-demonstrated interest in training provision for their members in many countries. Environmental sustainability (including green skills) is increasingly being integrated into ILO training design (e.g. in the Philippines) and is an important consideration for participating enterprises in light of national and global commitments in this regard. And 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 (CRPD). In Indonesia, it is encouraging to note that the e-commerce training in the retail sector as part of the programme's COVID-19 response included the provision of sign language to enable participants with hearing disabilities to participate.

It is proposed that the wider set of ILO cross-cutting policy drivers be reflected in the design of any extension to the current programme that may eventuate.

5.3 Programme effectiveness

a. To what extent the outputs and outcomes have been achieved or likely to be achieved?

Overview on outcomes and outputs

The following commentary takes as its basis the outputs set out in current programme planning and reporting documents (refer Annex 3 for elaboration), noting that these have been extended beyond the original donor agreement in subsequent programme planning iterations.

High level overview of progress to date (refer Annex 3 for detail per output)

As elaborated later, the impact of the COVID-19 pandemic led to a reorientation with donor concurrence of programme design, planning and implementation since March 2020. Key elements of the reorientation were shifts in focus towards (i) design, capacities and curricula for online public TVET training in Indonesia and the Philippines; (ii) support for the shifting of all training online; and (iii) shifting attention from training/employment transition per se to STEM-related job readiness training and inclusion of e-commerce training for low skilled workers or potential entrepreneurs. As of August 2020, the programme had demonstrated the following key high level progress, including as a result of the reorientations triggered by COVID-19 (where more up-to-date data is available, this is included) :

- Three skills and career mapping studies were developed, one per country, to provide a basis for programme planning and implementation.
- 16,652 workers (approximately 75 percent women) have received soft skills training to date in Indonesia, Philippines and Thailand through the ILO I-B training programme. This has been reached through collaboration with more than 25 leading enterprises in the priority sectors. Of this number, upon completion of an initial target of 1,000, Seagate Technology in Thailand expanded the programme to reach a total of 14,804. Up to a further 5,000 workers were expected to be trained under existing MOUs with companies across the ASEAN-3 during the project period (refer to Table 1 below).
- 20 agreements have been 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 programme.
- Five workshops were held with national EMBOs on promoting the I-B soft skills programme as well as identify other areas for cooperation depending on the context at national level. One case study was produced on the impact on women workers and employers of the I-B soft-skills enterprise-based training programme as part of the programme commitment to promoting good practice.
- 773 workers (mainly women) received STEM-related pre-employment technical training in public TVET institutions in Indonesia and the Philippines. Plans are in place in both countries for ongoing training.
- Over 1,500 low-skilled women workers in Thailand have been upskilled through a training programme on Data Analytics and Visualization for Manufacturing co-designed by the ILO and the Department for Skills Development (DSD), Ministry of Labour, with industry input. A further 694 from five companies are currently undergoing training in the same field until December 2020. At least 1,550 of those trained to date were at Seagate Technology. This was the Ministry's first-ever such collaboration for in-company technical training targeting low-skilled women workers. DSD has indicated an intention to continue rolling out the training at provincial level through Skills Development Institutes, aiming for 300 additional trainees reached per year.
- Steps were initiated in the Philippines to institutionalize ILO 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 response in Indonesia, 60 public TVET instructors were trained in the creation and delivery of online training and 624 people (60 percent female) were trained in the establishment of online small retail businesses in Indonesia. Plans are in place for follow-up training and mentoring.
- New competency standards were developed for the above Data Analytics and Visualization training programme. This drew inter alia on a benchmarking of international practices in the field. Due to the requirement that adoption of new national competency standards in Thailand requires legislative change, the standards were adopted at programme 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. The advent of COVID-19 has paused further movement in this regard.
- Steps are currently also being taken in Indonesia to influence national competency standards through the integration of STEM-related skills into TVET, including through 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 participation of all relevant ministries and public bodies. This development is seen as a basis around which to develop a broader tripartite body on STEM education and training which *inter alia* would inform government policy making in this area.
- An MOU was finalized for long-term collaboration between the programme, the Ministry of Manpower and BBPLK Bekasi (a national 'Centre of Excellence' TVET institution) in Indonesia. A draft MOU is also in place with wider ILO support and already being enacted for collaboration between APINDO and the BBPLK Bekasi for STEM-related technical training.
- Active engagement was maintained with national employers' organizations in Indonesia, Philippines and Thailand to increase programme outreach, involve business more in TVET prioritization/development and promote and implement the ILO I-B soft skills training package.
- In this context, five agreements were reached with national and sector-based EMBOs for collaboration with the programme, particularly on promotion and delivery of the ILO I-B soft skills training programme. These included an MOU with the Employers' Confederation of the Philippines to roll-out the I-B programme as part of their membership services and growth strategy. Progress towards a similar agreement with the Indonesian Employers Association has been temporarily paused due to current pandemic impacts, as was the implementation of a public-private partnership agreements with the Indonesia Business Coalition for Women Empowerment (IBCWE)) for the roll-out of I-B among its members. The Employers' Confederation of Thailand has also committed to moving towards an MOU with the ILO to roll-out I-B within Thailand's electronics and electrical sector and (potentially) 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 programmes. It includes information on relevant enterprise based, activity based and peer to peer learning training programmes.
- Research briefs 'Leading to Success: The business case for women in business and management' were launched as part of the programme in collaboration with PBCWE and ECOP in the Philippines and IBCWE and APINDO in Indonesia. The briefs linked to a similar brief for Vietnam under the auspices of a partnership between Investing with Women and ILO ACT/EMP. The true value of the briefs comes from the engagement with stakeholders to discuss the findings (e.g. via the launch event), with a view to bringing attention and recognition to the value of investing in women in the workplace.

- Programme resources were supplemented across the focus countries through government commitments of 500 scholarships in the Philippines for TVET-based training programmes; further financial support for up to 800 additional scholarships to be utilized in 2020; 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 recent commissioning of a private IT / STEM-related training provider in Indonesia also includes an in-kind agreement to utilize the provider's own resources and connections to provide up to 100 on-the-job training opportunities/placements for trainees during the remainder of the programme period.

Table 1. Number of training participants under the ILO I-B enterprise-based soft skills component of the programme

Thailand	Indonesia	Philippines
BDMS (36)	Toyota (44)	IBM (33)
Seagate (14,147)	Samsung (1278)	Women Who Code (19)
Toshiba(48)	H&M (85)	Accenture (11)
Samsung(26)	PT Gajah Tungal (61)	Teleperformance (200)
Mitsubishi(15)	PT Ban Brothers (42)	HSBC (167)
Delta (35)	Kantar (28)	IngramMicro (54)
Thai Summit (133)	PT Tira (30)	Emerson (38)
Ikea (22)		Point West (28)
Vibhavadi (51)		Educasyon (27)
		DICT (23)
		Cloud Employee (9)
		Sutherland (7)
		Nestle (commitment to 350 in MOU bettween Nestle and ECOP)
Total = 14,513	Total = 1524	Total= 966

Note: Current MOUs signed with companies to deliver and support the ILO I-B programme indicate the potential to reach up to 5,000 more workers (mainly women) during the programme period. The MOUs further signal company buy-in to the I-B content, model and overall approach. For example:

- In Thailand, Delta electronics signed an MoU to reach 1,500, Mitsubishi signed an MoU for 300, and Thai Summit signed an MoU for 1579.
- In Indonesia, H&M have provided an indication that they would like to expand to 10 additional factories (in addition to the six already planned for in 2019). This would reach at least a further 625 workers. This is part of a separate project managed by H&M with a focus on promoting women's health and wellbeing at H&M's suppliers (garment factories) and in collaboration with other organizations (ILO, USAID, UNFPA, and the Ministry of Health).
- In the Philippines, the 10 MoUs currently signed could reach at least another 1,500 workers.

While the impact of COVID-19 has slowed progress in the direction indicated by these figures, the expectation is that MOU agreements will be met, with increased online training an important part of the approach. As noted in Programme Snapshot 1, the I-B programme has produced a number of observable benefits from company culture and staff advancement perspectives. These include increased confidence to engage with managers and peers, an increased collaborative and networking orientation and greater awareness of 'big picture' considerations.

High-level assessment of likelihood of outputs being achieved by programme end

The following table examines the current status of each programme output and the likelihood of progress by mid-2021. Apart from Output 2.3 which has in effect been subsumed into Output 2.2, all outputs are either on track or partially on track with reference to current indicators and targets.

Table 2: Assessment of output status and likelihood of achievement

Note: Outputs based on those shown in current programme planning and reporting documentation. Outputs 1.1 - 2.4 are based on Expected Outcomes listed in the original results framework agreed with the J.P Morgan Chase Foundation on 7 September 2018.	
Immediate Objective 1: Sector selection and skills gap identification	
Outputs as per above note.	**Assessment of likelihood to be achieved in remaining programme period.**
1.1 Development of sector-specific STEM and employability Action plans for women in each of the ASEAN-3 countries.	On track: This output has been accepted as being on track by the ILO and donor due to the development of annual work plans which are aligned with the agreed KPIs and are sector specific. However, the original agreement between the ILO and the J.P. Morgan Chase Foundation would appear to envisage something rather more akin to fully-fledged sector-level action plans which involve "stakeholder review and buy-in." Implementation at this level has not proceeded. It is proposed in this report's recommendations that the 'larger' sector plan concept stated in the original programme agreement be revisited in the context of the proposed Sustainability Action Plan via multi-stakeholder consultations during the current programme period (1 sector per country) to assess the support for, viability of and key elements of such plans, and (if agreed) key steps that could be taken to move planning forward. The stakeholders involved in such consultations would include relevant public agencies, TVET, EBMOs and selected company representatives at national and sector levels.
Immediate objective 2: Skills development and upgrading for entry-level, mid-skilled and high-skilled STEM jobs	
2.1 Successfully transition underprivileged female vocational school graduates into STEM-related employment with sustainable career and livelihood prospects. *Also refer to Output 3.1 below, which highlights the shift in programme orientation towards job readiness training for TVET graduates, as*	On track for training targets (subject to final overall trainee numbers in light of COVID impact), Not on track for transition to employment. The placement rate (even when reduced from 70-50%) was ambitious within programme resources and timeframe and not met. Only six women placed in STEM-related jobs from the initial 242 trained in Indonesia, for example. The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and apprenticeships to assist with job placements. Limited progress in this regard is reported to date. 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 still largely a new concept and require a period of socialization over time, while the immediate need is to focus on bringing greater structure to internship arrangements.

against placement per se.	The COVID-19 context makes transition into employment even more problematical, most likely for the remaining programme period. As a result, the programme focus in this regard has shifted to public capacities and curricula for employability training, to enhance employment prospects on the 'supply side' when labour market conditions improve. This should remain a priority focus for the duration of the programme. Longer term, increased attention to the 'demand' side of the training/employment transition dynamic is required, linking in with the role of EMBOs to assist in 'opening door' and as well as the role of public employment services.
2.2 Successfully transition women in low-skilled jobs to quality STEM-related employment with sustainable career and livelihood prospects.	On track for training targets, with the significant soft and technical skills training exercise at Seagate Technology, Thailand, a major contributor to progress to date. The indicator set for the movement of trainees into mid-skilled positions was not realistic in terms of (i) the number of workers who could potentially move into available positions and (ii) the time and educational attainment levels required for workers to move through the career pathways of the companies and sectors concerned. The indicator concerning retention of staff who have received training requires ongoing monitoring in collaboration with the companies concerned. No initial data in this regard was yet available to the evaluation.
2.3 Successfully transition 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.	Not on track/removed: As noted in Section 6.2 (c), while acknowledging the rationale for subsuming this output under Outcome 2.2 in agreement with the donor, the evaluation observes that this has left an important gap in terms of carrying forward the original integrated concept for the programme. The intent of the original output remains valid as part of a holistic and comprehensive approach to promoting women in STEM and should be considered in the context of any programme extension, as part of the programme Sustainability Action Plan and in the context of other ILO regional and/or national skills development, enterprise development and gender equality programmes.
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. *Note: The term 'tools' in this context has been interpreted in practice by the ILO and donor as being akin to 'initiatives' implemented to*	Partially on track: Various initiatives completed and underway to better link industry skills requirements with TVET prioritization and planning, including through (i) 2 technical forums ; (ii) working with business in relevant areas to design training curricula (e.g. Data Analytics and Visualization in Manufacturing with DSD in Thailand); and (iii) the first steps to establish a national tripartite STEM cooperation and advocacy platform in the Philippines. The development of national STEM-related competency standards was not able to be progressed to the degree envisaged in the period until July 2020, although steps have been taken in this direction in both the Philippines and Thailand. In the Philippines the focus is 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 Data Analytics and Visualization. This was done via approval by the DSD and in a way that enables the standards to be applied at Skills Development Institutes nationwide. Longer-term work on the upgrading

meet the KPIs specified.	/development of national competency standards relevant to the Women in STEM agenda remains a priority in the ASEAN-3. Steps to progress such developments should be part of the programme Sustainability Action Plan, linked to other ILO skills engagement at regional and national levels. The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and/or apprenticeships. No progress is this regard is reported to date, but this area too should be included in programme sustainability planning. Although not reflected in the programme design per se, the addition to the programme in practice of the two national publications on women in business and management in Indonesia and the Philippines has been a highly relevant addition to the work. Both have attracted wide stakeholder interest and build on the programme's partnerships with the respective national Business Coalitions for Women Empowerment. As with other points above, follow-up to the launch of these reports to maximize their value-addition should be included in the programme Sustainability Action Plan.
3.1 TVET level assistance for women participants including training conducted on issues related to recruitment and job placement. *Also refer to Output 2.1 above.*	On track (related to Output 2.1): As noted above, the COVID-19 response has seen an increased focus on job readiness training in the Philippines and capacitating TVET instructors to go online in Indonesia. This foci should be retained and strengthened for remainder of current programme period, and beyond. The intent to establish a communication platform set out in revised indicators and targets (in order to strengthen TVET institution's outreach capacity) was carried forward through directly connecting EMBOs with TVET system authorities and the establishment of the STEM Thematic Working Group in the Philippines.
3.2 Enhancement of firm partners support for the targeted recruitment of women, in particular those participating in the STEM training programme	Partially on track: 5 workshops held, but follow-up constrained by COVID-19 and reorientation of programme. Engagement with corporate partners to recruit STEM graduates remains an important priority to be pursued in programme follow-up planning, including in association with (i) national and sector EBMOs and (ii) longer-term implementation of mentorship, traineeship and quality apprenticeship programmes where relevant and feasible.
Immediate Objective 4: In-job support	
4.1 Mobilize support of training institutions, sector / employer associations and firm partners in each country, to provide institutional support to programme	On track: The programme should aim to progress MOUs with APINDO and ECOT for I-B promotion and delivery to the degree possible by the end of the current funding period, taking into account partner capacities and priorities. The agreements with the Philippines and Indonesian Business Coalitions for Women Empowerment should be leveraged to support ECOP and APINDO respectively in promoting and delivering the I-B soft skills programme.

	Options and possibilities for tapping into national and company resources should continue to be explored to support the current programme and the continuation of its work and achievements. In this regard, the Federation of Thai Industries (FIT) and the Personnel Management Association of Thailand (PMAT) have indicated their keen interest in collaborating with the Women in STEM programme, including through an MOU arrangement. The development of communications on programme impact and collaboration for stakeholder, public and potential funder attention should continue (note related reference below on production of programme case studies).
4.2 Carry out in-company training programmes leading to career advancement of participants	Partially on track. This encompasses both the technical and soft skills development aspects of the programme. However, to date there hasn't been sufficient time to show evidence of training leading to career advancement in either sphere. It should also be noted that (i) the output overlaps with coverage under Output 2.2 above of in-company technical and soft skills training; and (ii) there is little direct correlation between the output and the KPIs which are listed for 2019-2020. The final report on lessons learned and future opportunities for programme implementation should remain a priority for the programme, developed either jointly or in synergy with the above-mentioned programme Sustainability Action Plan.

b. To what extent the outputs produced and delivered so far follow the work plan, considering also the quantity and quality of the outputs and whether they are satisfactory from stakeholder perspectives?

Regular workplan revision has been required at national and regional levels in line with the annual adjustments agreed with the donor to programme indicators and targets. Apart from the impacts of COVID-19, contributing factors to the adjustments included partner capacity gaps and the longer time required than originally envisaged to develop some key relationships and build trust and partner buy-in to women in STEM key concepts ("selling the product" as one programme staff member described it). Overall, the strongest area of delivery across the focus countries has been in meeting STEM-related technical and soft skill training targets, while targets related to transition from training to employment and career progression, as well as the development of larger sector action plans, have proven to be the most challenging to date, as elaborated elsewhere.

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

The value-addition and attributes of the ILO In Business 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 (although it was observed that this requires a "mind-set" adjustment for staff more familiar with traditional classroom teaching approaches).

- The activity-based learning orientation based on case studies with which all participants engage (although the need for case studies to be more specifically grounded in sector and company experience, culture and processes was noted as an area for future attention).
- Facilitators don't need to be subject matter experts, but can focus on ensuring the quality of the process.
- 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 (noted as an important factor in building teamwork and mutual support in the workplace, as well as being an important attribute for career advancement).

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.
- Ensuring the quality of translation of learning materials.
- Ensuring that facilitators are well trained and prepared.
- Grounding case studies to the extent possible in the sector and company context within which the learning is taking place.
- In online training situations, taking account of the needs of participants in flexible working situations, working night shifts, in crowded living circumstances and/or not able to access a device to link in.
- Developing longer-term monitoring approaches linked to staff performance management systems to track trainee career development over time (both lateral and into more senior roles).
- Exploring with the ILO the possibility of international companies being able to take I-B training applied at national level to other countries within their operation as part of a unified and coherent approach, thus reaching greater numbers and potentially being incorporated into the global corporate HR framework (current agreements allow the application of the I-B methodology only in the country specified). One major corporate I-B partner suggested that the programme be made available on an open-source basis.

A key element of the sustainability strategy of the programme for its soft skills component is the taking-on by national EMBOs of responsibility for promotion and support of delivery of the I-B programme. Progress in this regard to date varies by focus country, with the ECOP having concluded an MOU with the ILO to take on such role in the Philippines; agreement in-principle to move this direction by APINDO in Indonesia (with progress paused by COVID-19); and discussions continuing 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 company level and a "cutting edge" element of membership services and expansion strategies. Since the MOU, ECOP is still at a piloting stage for implementation. This will build on and incorporate ILO progress to date in engaging 10 Philippines companies in the I-B programme.

Recognizing the growing demand across the business sector for enhanced soft skills for new and current employees, ECOP has set targets for the engagement of members in I-B delivery and three sectors / business groups have been prioritized for follow-up. These are the hotels and ICT-BPM sectors via their respective EMBOs, and the Philippines Chamber of Commerce and Industry. MOUs to be developed with each participating company will *inter alia* specify support provided by ECOP and ILO.

The identification of "ambassador companies" (four to date) is a key element of the roll-out approach, with the aim being for these companies to be long-term champions and "demonstrators" of the programme, as well as a source of good practice advice and support for others. ECOP is further planning to institutionalize I-B into the curriculum of its EMBO Academy to reinforce its sustainability.

While the I-B approach is seen as being relevant for everyone, ECOP intend to keep the gender quality focus through a requirement that at least 50 percent of participants are women. As well as promoting and supporting delivery of I-B via member companies, ECOP is also looking at availability via mixed company training groups. Already, ECOP staff describe I-B as a "game-changer" in helping to institutionalize its own gender and diversity commitments, including through the establishment of a gender equality and diversity committee. They observed that the programme and its approach have added momentum, energy and visibility to internal efforts.

The above stakeholder feedback is backed-up by the findings of technical and soft skills training evaluations through the Qualtrics survey software (see later elaboration) and other similar approaches employed by training providers. All such surveys reviewed by this evaluation showed positive ratings of content, learning outcomes and training approach across the board. Annex 4 provides a more detailed overview of such findings.

Programme snapshot 1: Seagate Technology experience demonstrates value of In Business soft skills training approach

Overview: Seagate Technology in Thailand have been a leading implementing partner for soft and STEM technical skills training under the programme. Since cooperation began in August 2018, 14,804 staff at mainly the operator level have undergone soft skills training through selected modules of the ILO In Business course. A total of 1,550 lead operator staff have also undergone 'hard' skills training in data analytics and visualization for manufacturing, with a focus on women in lower skill roles. The curriculum for the latter was jointly designed by ILO and the Department for Skills Development (DSD) of Thailand's Ministry of Labour, with input from industry sources.

Key benefits: Those identified by the company to date for the two training streams include (i) improvements to the self-confidence of operators; (ii) expanded mutual support and learning networks among staff; (iii) enhanced staff understanding of the company big picture, along with improved strategic thinking; (iv) staff speaking-up more and contributing more actively to problem solving; (v) increased collaboration among staff; (v) enhanced technical skills, including at basic computer literacy levels; and (vi) increased productivity. The latter in particular will be examined in detail by the parallel impact assessment currently underway of the soft skills component of the programme.

Challenges: At the same time, certain challenges had to be navigated by the company with ILO support. These included issues of interpretation in the pilot phase of the soft skills training; translation issues in initial material provided by the ILO; the adjustments required by staff to feel comfortable with simultaneous translation during the pilot; and the cultural / mind-set adjustments required for staff to engage actively with the self-facilitated, case study and activity-based learning approach of In Business. Seagate's experience was that the latter takes some time.

Key lessons: Several key lessons have been identified to date, as follows: (i) Key factors in Seagate's adoption of the In Business approach were the programme's practical case study/activity-based approach, its adaptability to company values and culture and the ability to co-design the instructional approach; (ii) the importance of thorough pilot testing, but the need in the future to also ensure involvement of lead operators and supervisors to ensure/reinforce relevance; (iii) the importance of high quality translation of materials from the beginning; (iv) the need to take time for all concerned to adjust to the self-facilitation collective learning approach (vis-à-vis classroom-style instruction); (v) online training modalities were found to be better suited to soft skills, rather than technical skills; (vi) more investment in needs assessment is important at the design stage of the technical skills training programme; (vii) a more consistent quality of teaching is required in the presentation of the technical training: and (viii) engaging with government process and requirements takes time and required a joint Seagate/ILO stakeholder management approach.

Looking ahead: The sustainability of programme impacts look to be assured, with the Seagate senior management team seeing ongoing value for the company in both training streams. The team is committed to keeping the soft skills programme rolling, with two existing modules per year as well as new modules which are

introduced by the ILO. Work is underway on developing and introducing a module on working as a team (paused currently due to COVID-19). The technical training has been internalized with the company staff development system, based on the ILO/DSD curriculum and the internal Seagate trainer approach. It is planned to expand this to operator level one, including a focus on basic computer skills for those staff requiring support in this area. Seagate would like to see ongoing strategic engagement with the ILO, including the sharing of relevant ILO global research on sector needs and trends and looking at how to incorporate LGBTIQ dimensions into training

Summarized from discussion of personal reflections with Ms. Cattreeya Thithiwongsawet, Thailand Regional Lead, HR - Global Talent Management, Seagate Technology. Included in this report with permission of Ms.Thithiwongsawet.

c. Have programme activities and impact been evenly distributed across the geographic areas (explore why or why not)?

Most of the programme outcomes/outputs apply 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 programme budget has been directed to programme implementation in the Philippines. To date, close to USD 1.8 million of the total USD 2.4 million budget has been spent, leaving USD 600,000 for the remaining project period to cover operational and delivery costs. Based on current programme planning, Indonesia and Thailand will each receive USD 132,000 of these funds, while the Philippines will receive USD 246,000.

At the same time (as previously noted), a staffing imbalance exists across the three focus countries, with no dedicated national programme staff in Thailand, two in Indonesia and one in the Philippines. The former and current TO roles also had/have responsibility for Thailand implementation and partnership interactions. In the case of Indonesia, the double-programme officer arrangement has evolved due to particular needs arising out of the need to switch the strategic sector focus of the programme and the absence a national officer for 6-7 months during the second year of implementation. However, the main issue in this context is the lack of dedicated programme resourcing over the programme duration for its Thailand component. The current arrangement of relying on the TO role is assessed as contributing to an unreasonable workload, given the intensive demands at both regional and Thailand national levels. The pressures are currently compounded by the inability of the TO to be on the ground in Thailand due to COVID-19 international travel restrictions.

Another important consideration in this context is the value-added of the regional dimensions of the programme. These include the profile generated by the 'Leading to Success: the business case for women and management' reports in the Philippines and Indonesia; 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; the development and dissemination of communications on programme impact and progress; and the interaction and cooperation for mutual support and learning between the respective country staff (particularly between Indonesia and the Philippines), as well as through the role of the programme TO. These various cross-country interactions and initiatives are assessed as adding value to implementation at national level through the sharing of knowledge and lessons as well as the generation of greater profile for the women in STEM agenda.

d. Are there any unintended results of the programme, e.g. what internal and external factors may have influenced the ability of the ILO to meet targets and what measures were taken in particular in the context of COVID-19?

As elaborated elsewhere, the initial prioritization of the automotive sector in Indonesia proved to be not viable and certain indicators for 'larger' change were not able to be met (e.g. sector strategies and indicators for promotion and training/employment transition). At the same time, initial engagement was opened-up for soft skills engagement with a new sector in Thailand (healthcare) at the suggestion of ECOT and an additional component was added to the programme through the ILO ACT/EMP-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 by two leading Philippines business groupings to promote gender equality and diversity, with soft skills development highlighted as an integral component.

With respect to ILO / programme internal factors, the main areas which stood out in evaluation feedback were (i) the positive impact of energy, commitment, enterprise and adaptability of the programme staff in getting the most out of available resources within tight timeframes; (ii) the imbalance in the allocation of resources at country level for staffing (particularly the absence of a dedicated full-time programme officer in Thailand); and (iii) the scope for enhanced coherence and synergies between the respective units supporting the programme in the absence of the regional governance structure proposed in the PRODOC. Each of these factors is considered further elsewhere.

As already indicated, the major external factor influencing programme planning and implementation has undoubtedly been the **impact of the COVID-19 pandemic** in the three focus countries. A rapid adjustment of priorities and approaches was required across the whole Women in STEM programme to respond to the changed circumstances from March 2020 onwards.

Generally the shift in orientation had three main components. These were (i) prioritization of online training capacities, skills and design within TVET institutions (including training of trainers, curriculum guidance and development, and development of learning materials); (ii) a shift of focus from training/employment transition to the provision of job readiness training for TVET graduates; and (iii) piloting and moving company-based technical and I-B soft skills training online.

Particular specific initiatives at country level in this context included (i) 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 programmes in this area); and (ii) the expansion of the Indonesia programme scope to include training in demand-driven ICT related skills for online small business establishment in the hard-hit retail sector, in partnership with the Indonesia Retailers Association (APRINDO).

In the context of the above reorientations, programme implementation during April-August 2020 included:

Indonesia: (i) Training of 60 public TVET instructors on the creation and delivery of online training (in partnership with the Ministry of Manpower), with planning for the training of an additional 120 TVET instructors; (ii) ICT skills training for 624 people (60% women) on establishing online retail businesses (in partnership with the Indonesia Retailers Association, APRINDO).

Philippines: Planning for TOT on the online delivery of job readiness and STEM related technical skills training, and the training of 190 women in this area; the involvement of 140 TVET instructors in design/thinking workshops on integrating STEM-related skills; development of a curriculum guide for

integrating STEM-related skills into TVET IT-BPM training (based on a STEM in TVET learning design framework and linked to relevant competencies within national frameworks on 21st Century Skills; capacity development for TESDA staff on designing online training programmes; online I-B soft skills training with partner companies; and capacity development for ECOP and sector business associations for delivering I-B online.

Thailand: Ongoing I-B and technical training shifted online, requiring adaptions with ILO support of instructional and learning approaches by (i) DSD for the ongoing roll-out of training for an additional 694 women on Data Analytics and Visualization for Manufacturing, and (ii) Seagate Technology for the ongoing roll-out the I-B soft skills training. The roll-out of I-B training was also scheduled for Delta Electronics and Mitsubishi in Thailand during April and May respectively, but was postponed due to the impact of COVID-19. .As noted elsewhere, design also commenced of a new I-B module on team-based approaches, which will *inter alia* be incorporated into Seagate Technology's soft-skills I-B training framework.

Programme snapshot 2: Shifting priorities in Indonesia to respond to COVID-19 impacts

The following snapshot looks at the reorientation within the Indonesia component of the programme towards providing online skills for small retail business development. This is presented as an example of 'thinking outside the box' and responding in real time to a pressing STEM-related ICT need that had a primarily (but not completely) women's focus.

Overview: This particular reorientation within the Indonesia programme related to Output 2.1 - Pre-employment technical and employability skills for TVET students/ graduates to facilitate their entry into full-time jobs. In collaboration with the Indonesian Retailers' Association (APRINDO), trainings were designed and delivered through a contracted training facilitator on coding for online shop application and administration of e-commerce. The training was targeted towards owners of SMEs and workers who have been laid off and lost income due to the pandemic. 58 percent of the 624 participants from across the country were women, who have been disproportionately affected by the pandemic. The group included 19 participants with disabilities. The sessions covered key skills including online store design, platforms, databases, transaction and customer management, inventory and sales administration as well as digital marketing. Participant feedback on the training was generally positive, with the main area identified for improvement being the need for a longer training timeframe to allow more in-depth learning.

The focus has now moved to follow-up coaching and mentoring, as well as formal certification from the Indonesian Professional Certification Authority. 10 training participants were selected for three months of follow-up mentoring, to be provided by the training team. APRINDO has indicated that its priority for further training and support is expanding online outreach to international markets. The intention has also been to use the online course to encourage networking among participants for mutual learning and support purposes. APRINDO reports that progress in this regard is limited to date, although there are some signs of participants exchanging good practices.

A post training report by the online training facilitator highlighted a desire from participants for longer and more in-depth training sessions, follow-up training and more opportunities for haring and consultation. 10 participants from the online store administration component of the programme will receive Certificates of Competence from the.

Lessons: The rapid reorientation of direction and approach in response to the pandemic demonstrated the importance of being well attuned to the operating context, flexibility and adaptability, important elements of good practice in programme management. The shift of focus fitted both national circumstances and the organizational capabilities of the ILO and APRINDO. At the same time, a number of participants indicated in their training feedback that a longer training period, with greater depth and more opportunity interaction would have been helpful.

Sources. (i) Women in STEM Workforce Readiness and Development Programme. Progress update: April to August 2020; and (ii) interviews with APRINDO representative and Women in STEM programme team, Jakarta.

5.4 Efficiency of resource use

a. Have the available technical and financial resources been adequate to fulfil the programme work plan?

Technical resources and advice have been accessed from several sources. These include the specialist staff of the ILO DWT, training providers, consultants commissioned for delivery of particular programme components and already existing technical expertise within partner agencies, organizations and companies. Available documentation and stakeholder feedback indicates that this has been adequate to meet programme requirements. Where programme indicators and targets have not been met, the issue has not been a lack of technical resources, but rather the impact of larger contextual and capacity factors.

Given the ambition of original programme design, the available resources have been relatively limited. USD 750,000 was provided to cover the first year of implementation, including analytical research and establishment of partnerships, with a total of USD 2.4 million made available across the focus countries for the overall programme period. Annual budget instalments have been conditional on progress against KPIs, which (as noted elsewhere) has affected multi-year planning at country level and conditioned the strategy the ILO developed to deliver outputs and outcomes over the programme duration.

Resource supplementation through the financial (scholarships) and in-kind contributions of partner agencies has thus been required to ensure that training activities can proceed at the level agreed (refer summary, Section 5.3). At the same time, it can be seen that the commitment of supplementary resources has been an indication of partner commitment to the programme outcomes and outputs, thus constituting a potentially important factor in helping to ensure the sustainability of programme achievements. In the Philippines case, the average cost per technical training, based on TESDA costings, is USD 600 per student. A total of USD 318,000 is thus required to fund the graduation of 530 students targeted by the programme. To date, TESDA has already earmarked 365 scholarship slots to be covered by its own resourcing, amounting to a contribution of USD 223,0000 for technical trainings alone.

A key element of programme efficiency has been the progressive roll-out at company level of the I-B soft skills training methodology, with its emphasis on self-facilitated activity-based learning. The approach doesn't require the use of expensive external technical experts and facilitators, but draws on the experience and active learning engagement of participants. Implementing partners highlighted this attribute of the approach, along with the ease with which it can be incorporated into wider company HR frameworks.

b. Have the management and governance arrangements of the programme been adequate; is there a clear understanding of roles and responsibilities?

The programme's management arrangements have proven adequate to date in ensuring effective programme oversight, management and reporting, albeit with a gap at regional coordination level due to the transition between the former and new TO. In light of the extent of engagement with national EMBOs for the promotion and delivery of the I-B soft skills programme, as well as the launch of the two national women in business and management publications, it makes sense for ACT/EMP to also be closely looped into all decision-making and advisory support at regional level. A major stress point, as elsewhere indicated, has been the requirement on the TO to provide regional oversight and

coordination as well as leading implementation at country level in Thailand. Scope also exists to strengthen the degree of synergy and collaboration at the ILO regional office between the respective units involved.

With respect to programme governance, reference is made in the PRODOC to the establishment of a regional Project Advisory Committee (PAC). This is envisaged as consisting of representatives of relevant national ministries, sector business associations, the donor and the relevant ILO staff. In the event, a PAC on this basis did not eventuate. The existence of such an oversight body, even meeting annually, may have helped to facilitate closer internal working relations between ILO regional units concerned. More regular joint strategizing and planning at regional ILO oversight level would have in turn enhanced the support given to the TO role.

Regional and country-level programme staff feedback indicated clarity about their respective roles and responsibilities, with recognition of the scope that exists for local initiative based on contextual considerations (including the impacts of COVID-19). The allowance of space for the in-country teams to take initiative (and in the words of one programme team, to "follow their instincts"), has been an important element in driving progress to date within the overall programme scope and results framework.

c. How effectively has the programme management monitored performance and results; is a monitoring and evaluation system in place and how effective is it; is relevant information systematically collected and collated; is data disaggregated by gender and other relevant demographics?

At a whole of programme level, further data and feedback are gathered by the regional programme coordinator for presentation to the ILO and donor in regular progress reports (most recently a full Progress Report in March 2020 and Progress Update in August 2020 for the period April-August 2020). Such reports are sex-disaggregated and provide the basis for annual adjustments to targets and indicators agreed with the donor.

A specific Monitoring and Evaluation Plan has been developed for the soft skills (In Business) component of the programme. This revolves around the following key questions: (i) Is the programme helping women acquire and apply soft skills?; is the programme increasing women's employability?; (iii) is the programme helping women gain better quality employment?; and (iv) does the programme benefit the firm? The soft skills M&E approach uses 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 programme, the feedback has proven useful for both ILO programme team training design considerations and I-B promotional purposes. Qualtrics is also being used for the jointly developed data analytics and visualization training in Thailand and has the ability for follow up six- month feedback assessments.

As part of internalizing the I-B programme within their wider training frameworks, one major I-B user has indicated that they plan to supplement the use of Qualtrics data with their own follow-up monitoring of training participants in areas such as promotions and lateral movement (i.e taking transferable soft and technical skills to other areas within the company). The Thailand Department for Skills Development also indicated that the development of monitoring tools is a priority for the ongoing rolling out of the data analytics and visualization training.

d. Has the programme received adequate administrative, technical and – if needed – political support from the ILO Offices (Manila, Jakarta and Bangkok) and technical specialists in the region?

Technical support for the design, development and implementation of the programme has been provided by the Bangkok-based specialists (including ACT/EMP) through the role of the TO, rather than directly to the in-country programme officers. This has helped to ensure coherence and reinforce the oversight and coordination elements of the programme coordination role. Feedback from all levels indicates that the backstopping support has been both responsive and effective, contributing to key programme design and planning decisions locally that were required as implementation progressed and needs or issues became evident.

Administrative support is assessed as adequate and is provided through dedicated full and part-time finance and administrative officers funded by the programme, as described elsewhere. The programme staff are based within the respective ILO Country Offices (COs), enabling regular interaction with the Country Director and other staff (in Thailand the CO also covers Cambodia and Lao PDR). Public and media statements on behalf of the programme are made by the respective Country Directors when required.

In Indonesia and the Philippines, the national Women and STEM programme components are well integrated into the ILO's wider skills-related programming. In Thailand, the programme constitutes the major focus of skills engagement. In the first two country cases, the resulting synergies and mutual reinforcement contribute to overall programme efficiency, impact and sustainability through helping to maximize the efficient application of resources, expanding stakeholder outreach and ensuring that lessons are more widely shared. In all countries, the programme is found to have contributed both to the strengthening of existing partnerships and to the initiation of new ones (e.g. the Department of Information and Communications Technology in the Philippines and private sector entities in each of the focus countries). In the Philippines, Women in STEM perspectives have been further incorporated into the local development of the ILO regional Skills for Prosperity programme. Further details at country level follow.

Indonesia: the Women in STEM programme is an integral part of a wider ILO skills development engagement which also brings together the Skills for Prosperity Programme (focus on maritime skills and skills strategies); the ILO/Japan Multi-bilateral programme (work-based learning, online TVET and skills systems); and the Fast Retailing project (employment insurance and active labour market policies). The ILO's Indonesia programme skills development priorities (with Women and STEM links) are as follows:

- Online TVET and distance learning (supported by Women in STEM focus on strengthening TVET online training design and delivery capacities).
- Industry engagement in TVET and work-based learning (supported by Women in STEM promotion of the I-B soft skills training).
- Skills development systems, especially sector level skills development coordination (potential for Women and STEM input into ICT component of this engagement).
- Active labour market policies, including training and employment services elements (potential for Women and STEM lessons and experience to contribute to the development of this work area)
- Gender and social inclusion (Women in STEM contributing through its focus on disadvantaged women; the development of relevant capacities and skills for both trainers and trainees, including employability skills for the latter; and a specific current focus on supporting 100 female trainees into STEM-related employment).

The Philippines: The programme links closely 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), are a key part of the programme, 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 regional 'Skills for Prosperity' programme: Priority sectors are (i) agriculture, with focus on food production/processing; (ii) construction, with focus on skills for green building practices; and (iii) IT-BPM, with focus on emerging skills needs for e-commerce. The latter priority in particular offers strong potential for synergies with the Women in STEM programme and for carrying forward its agenda beyond the programme period.

  There are also links with the work of the ILO on labour migration in the Philippines, through the engagement of the respective workstreams with TESDA.

In **Thailand** where the national skills development infrastructure is more developed, the Women in STEM programme is the main skills initiative under the DWCP, which includes specific targets relevant to the programme.

As the focus shift towards programme sustainability in the remaining implementation period, active engagement with the above and other relevant initiatives under the respective DWCPs will be necessary to strategize about ways to incorporate the women in STEM agenda, lessons and progress within other workstreams, where feasible and appropriate.

e. Is the programme receiving adequate political, technical, financial and administrative support from its national partners/implementing partners?

Interviews with selected public and private implementing partners indicated a strong commitment to the programme at all levels, linked at the political/policy level to government and corporate gender equality and diversity commitments. This has been developed and fostered through active interaction with the programme team at TO and country level. Partner technical expertise has joined with that of the ILO in training design and delivery (e.g. the DSD in Thailand in developing the Analytics and Visualization for Manufacturing programme). As detailed elsewhere, partners have supplemented programme resources through provision of scholarships and covering-in company costs for STEM-related technical and soft skills training. In the Philippines case, the initial steps to establish a tripartite platform for STEM coordination and advocacy will potentially reinforce the political, technical, financial and administrative engagement of key partners, providing an important basis for the sustainability of programme activities. The longer term test in this context will be the extent to which programme initiatives are carried forward through national budget and corporate resourcing, without any requirement external resourcing apart from ongoing technical support where necessary.

f. Is the programme collaborating with other ILO programmes and with other donors in the country/region to increase its effectiveness and impact; e.g. are the relevant stakeholders involved in an appropriate and sufficient manner?

While this evaluation notes the potential for stronger engagement with or incorporation within other relevant ILO programmes at regional and national levels, no evidence was visible at this stage of active collaboration. It is recommended that realizing such potential is a priority focus from a programme sustainability perspective in the remaining implementation period.

Potential also exists to link the current Women and STEM programme with other relevant regional initiatives to amplify overall impact by identifying and leveraging synergies and sharing lessons and approaches. A regional mapping of such initiatives and the potential for synergies and mutual reinforcement should be part of the programme Sustainability Action Plan. The Asian Development Bank, World Bank, GIZ and the Australian Government are among the multilateral and bilateral donors with a Women in STEM focus. Events such as the annual United Nations International Day of Women and Girls in Science (11 February) and the planned ASEAN Women in Innovation Leadership Dialogue (affected in 2020 by COVID-19) also provide opportunities for STEM-related networking and profiling the ILO Women in STEM programme, its progress and lessons for others.

5.5 Impact orientation and sustainability

a. Is the programme strategy and management steering towards impact and sustainability?
b. Has the programme started building the capacity of people and national institutions or strengthened an enabling environment (laws, policies, people's skills, attitudes, etc.)?
c. Do the programme activities appear sustainable; what steps can be taken to enhance the sustainability of programme components and objectives?

The three questions on programme impact and sustainability have been combined, as they are highly interrelated.

The PRODOC states that the programme "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 set out is aimed at setting a "mid-long term change in motion through creating an institutional and workplace environment for supporting women's career development and advancement in STEM-related jobs."

The programme strategy can thus be seen as having a clear underpinning impact and sustainability orientation. This orientation has been evident in practice, as summarized below, although it has had to be balanced alongside a pressing focus on meeting training targets agreed with the donor and managing the immediate impacts of COVID-19 during the major part of 2020. As highlighted in the evaluation recommendations, ensuring impact and sustainability to the extent possible should be an explicit driving factor in the remaining programme implementation period. Reference is further made in the March 2020 Progress Report to the development of a programme Sustainability Action Plan. Evaluation recommendations that follow highlight the importance of prioritizing the development and early implementation of such plan in the midst of ongoing implementation and the harvesting of lessons.

In the meantime, no new institutions per se have been initiated by the programme, with the proposed Philippines Tripartite STEM platform (see below) conceived as a mechanism to bring existing intuitions together around shared larger objectives, rather than an institution in itself.

Examples of programme initiatives, partnerships and developments which hold the promise of contributing to sustainability in key areas include the following:

- The establishment of the Philippines Technical Working Group (TWG) to develop a multi-sectoral strategy for STEM workforce readiness and development. While currently the active membership consists only of relevant government entities, the intention is to develop it step-by-step into a tripartite platform to share approaches and plans; propose actions towards designing a STEM skills and employability action plan; formulate a national strategy for the development of STEM skills for the current and future workforce; and develop STEM policy recommendations for relevant government committees, bodies or agencies. Such a platform, if fully realized, will play an important role in embedding the general STEM and specific Women in STEM agendas within relevant national laws, policies, institutions, frameworks and process.

- Efforts to develop and formalize agreements with ECOP, ECOT and APINDO for their ongoing promotion, coordination and support for the ILO I-B soft skills programme within their respective memberships. The successfully concluded MOU with ECOP provides a template for similar arrangements in Indonesia and Thailand.

- 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.

- The adaption of technical and I-B soft skills training to online modalities in each of the three countries, accelerated as a result of the COVID-19 reorientations. This has included the provision of technical and capacity development support in both the public/TVET and private company contexts in areas such online training design, development and delivery. As noted elsewhere, some issues have been identified to date with respect to the quality of training; access to the necessary ICT infrastructure; and the need to take account of access by some trainees to the necessary technology and a supportive learning environment. However overall public and private sector feedback indicated that e-learning is 'here to stay' and will be an important component of future blended training approaches.

- Efforts to facilitate links between relevant government entities, public TVETs and business in the three focus countries, contributing to the design of training initiatives and strengthening the basis for increased business engagement in TVET design and delivery. Examples include business sector input into the design of the data analytics and visualization training programme in Thailand as well as TVET STEM-related technical training programmes in the Philippines. Such linkages have been reinforced in Indonesia by an MOU developed with programme support between BBPLK-Bekasi (the country's preeminent national TVET institution) and the Ministry of Labour. Although progress to date has been relatively limited (and now has been further slowed by COVID-19), 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. 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 IT world. They saw increased business input into TVET design and delivery, on the lines being fostered by the programme, as essential in this context.

- Steps by Seagate Technology in Thailand to integrate the I-B soft skills programme into their wider HR development framework, and interest in doing the same within Teleperformance, a major company (42,000 employees) in the Philippines IT-BPM sector. In the latter case, the I-B vision-setting module was seen as potentially a standard one for all trainees, with a customized set of modules to follow in line with employee roles and expectations within the company. Moving in this direction was seen as offering more possibility of (i) an increased volume of training delivered; (ii) the likelihood that trainees can use company time (currently training is carried out in personal time); (iii) links with existing company training to promote gender equality as well as pipelines for the promotion of women; and (iv) the tracking of the career development of training participants. Further discussion will be required within the company to pursue these possibilities. At the same time it was noted that offering the I-B programme more broadly to women and men would help facilitate its integration into the company HR framework.

- Steps towards influencing and extending national competency standards through the development and application of programme level standards for Data Analytics and Visualization for Manufacturing in Thailand and engagement with national competency and standards officials in the Philippines to look at the integration of STEM-related skills and requirements in TVET.

- The 'unanticipated' indication of longer term influence of the programme through 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 ECOT and the Philippines Business Coalition for Women Empowerment (PBCWE). This was made public during the launch in Manila of the ILO Report on 'Leading to Success: The Business Case for Women in Business and Management in the Philippines' which was supported by the Women in STEM programme. Linked to this initiative, as well as ongoing work done together ILO-ACT/EMP and PBCWE on gender equality and women's empowerment, ECOP has announced the formation of the Diversity and Inclusion Committee. This committee is seen as a key driver for institutionalizing I-B soft skills and other gender-based trainings training within member companies.[29]

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 has not been evident in programme implementation and partnerships to date, as it is not specifically reflected in the results framework and would require extensive additional engagement to build the necessary relationships and design the approach. The ILO has engaged with public employment services in other countries of the region, but no specific programmes with this particular orientation are currently in place in the programme's three focus countries. Follow-up in this respect is highlighted in the evaluation recommendations for consideration in the Sustainability Action Plan.

To date, the implementation of the programme has not seen change initiated in national laws or policies, although the aim of the Philippines TWG described above is to create a sustainable basis for just this purpose. Changes in national competency and/or qualification frameworks would constitute an important programme contribution in this regard and is envisaged in the PRODOC and agreement with the donor. The greatest likelihood of such a development currently is within the Philippines component of the programme, where the integration of STEM-related soft skills into the national competency framework is on the agenda. A workshop to this end was planned for November 2020, involving Certification and Standards officials, as well as TESDA trainers. It is not yet clear how quickly and how this may proceed within the current programme timeframe.

[29] 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

While the longer term impact and sustainability of technical and soft skills training is at this stage difficult to ascertain, initial anecdotal feedback from selected corporate partner training personnel indicates attitudinal change among key HR staff on 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 via the Qualtrics survey system from 17,756 technical and soft skills training participants across 23 companies in three countries indicated that training modules were well received, with high levels of satisfaction overall and positive learning outcomes indicated.[30] Likewise, a high proportion of trainee supervisors reported behavioural change as a result of training that was conducted (refer Annex 4 for elaboration).[31]

Programme snapshot 3: STEM Technical Working Group part of sustainability agenda in the Philippines

Overview: An important development arising from implementation of the programme in the Philippines has been the establishment of a multi-stakeholder Technical Working Group (TWG) to develop a multi-sectoral strategy for STEM workforce readiness and development. Meeting for the first time on 30 January 2020, the working group has initially brought together representatives from the Department of Science and Technology (DOST), Department of Information and Communications Technology (DICT), Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE), Department of Education (DEPED), National Economic Development Authority (NEDA) and the University of the Philippines College of Education Center for STEM Education.

While progress and planned meetings have been delayed by the COVID-19 pandemic, the TWG's aim is to provide a tripartite platform that will review, discuss and plan the implementation of activities, programmes and ultimately policies for STEM education and training for workforce readiness and development in the Philippines. In this context, it is intended that the TWG will evaluate and propose actions towards designing a STEM skills and employability action plan. This will contribute to the revision of existing public and private STEM programmes, studies and initiatives; address existing skills gaps; and ultimately contribute to meeting STEM skill requirements in the labour market. In the longer term, the TWG will draw on this work to formulate a national strategy for the development of STEM skills for the current and future workforce, as well as develop STEM policy recommendations for relevant government committees, bodies or agencies.

A phased approach for development of the TWG as a tripartite entity is being followed, beginning with consolidating the engagement of a core of key government departments and agencies, then broadening the process to employers' and workers' organizations. The draft TWG Terms of Reference sets out an intended membership of three employer bodies and nine trade union bodies. On the employer side, initial support has been indicated by the STEM-PH Alliance, a group of employers from different industries who are keen on STEM education for workforce readiness.

Key lessons: An important aspect of sustainability is the institutionalization of national ownership through appropriate locally-based mechanisms. The establishment of the TWG responds to a gap in the national skills architecture for a multi-stakeholder voice on STEM skills generally, and women in STEM specifically. The approach taken recognizes that shared interests exist in this respect across government, employer and worker organizations and agencies, underpinned by the demands of Industry 4.0 and the rapidly evolving world of work. Bringing these interests together institutionally has required the articulation by the programme of a vision of the added-value of a multi-stakeholder approach. This has been supported by a step-by-step investment of time

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

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

by programme staff for individual and collective engagement with stakeholders. The approach has helped to ensure a shared basis of awareness and understanding among stakeholders of (i) the relevance of the women in STEM agenda to their respective mandates and roles, and (ii) the potential for improved national traction on this and wider STEM issues through a structured joint process.

Sources. (i) ILO. (March 2020). Progress Report. Women in STEM Workforce Readiness Programme; (ii) Draft Terms of Reference for the establishment of a STEM for Workforce Readiness and Resilience Technical Working Group; (iii) interview with Philippines programme coordinator, ILO Women in STEM programme, Manila.

6. Summary of key lessons

A number of key lessons stand out from programme implementation experience to date, based on feedback from stakeholders, training participant feedback and document review. These include:

1. **Increasing the number of women in STEM is a multi-dimensional and multi-stakeholder agenda**: Stakeholders include ministries and agencies of education, labour, science, technology, planning and finance; public and private education and training systems; business associations; employers' and workers' organizations; professional associations; women's networks and organizations, private training providers and a host of others. While this programme very specifically targeted only very specific elements of this broad ecosystem, it is important to be mindful of the bigger picture and where the programme can best contribute in ways which are complementary, mutually reinforcing and add value alongside other initiatives. The tripartite Technical Working Group which is foreseen as an achievement of the programme in the Philippines will provide a platform for the leveraging of the influence, capacities and synergies of many of the stakeholders listed above.

2. **The potential of the programme as a catalyst for longer-term change:** Despite its limited duration and resources, the programme has helped to catalyse women in STEM profile, awareness and understandings within the public TVET systems and the private sector of the three focus countries. It has further set in motion a range of capacity development and other initiatives that provide the basis for ongoing momentum and sustainability when the current programme period comes to an end. One example of influence beyond the strict scope of the programme per se is the public commitment by key national business entities in the Philippines to soft skills development as part of their diversity and inclusion agenda.

3. **The programme approach and experience demonstrates 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 to date demonstrates both of these factors beginning to emerge (accelerated by the COVID-19 pandemic with respect to online modalities and capacities). In this context, arrangements for the development of the planned programme Sustainability Action Plan should be in place by the end of 2020 at the latest to deepen the analysis of drivers and lessons for sustainability and how to ensure the conditions for these to carry forward beyond mid-2021.

4. **The importance of a bigger picture view and strategy in achieving core objectives:** The impact of a bigger picture view and strategy on achieving core objectives is demonstrated by the way in which the programme was able to balance engagement (including capacity development support) with the ILO's core employer constituents at national level on the one hand, while relating directly

to private sector entities on the other in the course of implementing the ILO I-B training package. The private sector entities included both individual companies and sector associations.
When early programme engagements indicated that time, relationship building and capacity development support would be needed to realize the intention of national employers' organizations taking on national I-B responsibilities as part of their membership services, the decision was taken with ILO ACT/EMP support to follow a twin-track strategy. This involved continuing to work with the national association to build capacity and develop arrangements for the envisaged role vis-à-vis I-B, while working directly at the same time with sector associations (where they existed), HR associations and companies to pilot and roll-out the training. Cooperation was thus enabled around national EMBO capacities and understandings, while the comparative advantages and value of I-B was being demonstrated in practice at enterprise level, helping to generate both 'champions' and a demand for soft skills training. This approach both brought benefits to training participants and their employers, and helped to strengthen the confidence of national business bodies in the benefits of becoming national focal point for soft skills development through I-B. Two further related factors have also been important in this context. These are (i) ensuring transparency and openness among all stakeholders so that all concerned are aware of where the strategy is moving, and (ii) the role of the respective Indonesia and Philippines Business Coalitions for Women Empowerment as champions for women in STEM among their own members, as well as within their respective national employer associations.

Also requiring greater attention in this context for future women in STEM promotion are (i) engagement with the ILO's workers' organizations constituency (noted as a gap in overall programme design and implementation to date, despite some positive developments in the Philippines), and (ii) incorporation of the full set of ILO cross-cutting policy drivers.

5. **The valued-addition of a strategic sector approach:** Initial selection was based on assessment of the strategic importance and growth potential of STEM-intensive sectors in each country. While, as outlined, the automotive sector in Indonesia didn't offer the potential for women in STEM promotion that was initially envisaged, other sectors proved to be worthy priorities for attention and have demonstrated potential for long-term improvement of the status of women in STEM through workplace-based technical and soft skills training. The strategic sector approach has proven itself to provide the opportunity for in-depth building of awareness, relationships, capacities, ownership and momentum over time. One question will be whether and how progress to date will be sustained, which points back to the role of EMBOs as promotors and supports of the I-B programme in particular, and the embedding of women in STEM-related training into company HR frameworks.

6. **The need to complement the strategic sector approach with specific analysis of sector and company HR contexts (the 'demand side' of the training/employment nexus):** One factor that has been identified with respect to meeting targets and indicators for career progression following training is the vital importance of specific analysis of the particular career pathways and processes of different sectors and companies. Such analysis was developed by the programme for the Philippines IT-BPM sector and the Thailand electrical and electronics sector. However, experience has shown that the employment and career advancement elements of the programme play out over longer timeframes than was allowed for in initial programme targets and indicators, and regular deepening of the analysis is required. Specific such analysis of sector and company environments and HR dynamics is critical to (i) appropriately targeting programme resources, (ii) setting realistic indicators and targets and (iii) paying attention to the longer-term impact of training vis-à-vis career advancement. The capacity of EMBOs to play an active role in helping to open recruitment opportunities for TVET graduates was also shown to be overestimated, at least in the time period of the current programme (with COVID-19 further temporarily closing off the

possibility of movement in this regard). This element of facilitating training-to-employment transitions also needs further attention in the remaining programme period and beyond.

- **The need to allow time to "sell" a concept, identify and promote public and private sector champions, and build the critical relationships, buy-in and momentum needed for sustainable progress:** This applies both to the concept of women in STEM and the means (including technical and soft skills training) to generate change. Programme staff described the time and effort that need to be invested in bringing identified potential partners and counterparts on board conceptually as well as in practical terms, and to also support the development of relevant capacities. Balancing this need with pressure to meet short term performance indicators agreed with the donor can be a challenge. At the corporate level, senior level buy-in was shown to be a key enabler of progress, as this provides the high-level signals and directions to enable staff at operational level to move ahead. Where this is not evident, more attention to starting small, piloting the training and showing results may be required. A further key factor in progress is being able to demonstrate clear alignment to public and corporate gender, diversity and HR policy priorities and objectives.

  One pivotal factor in this context was the influence of prevailing discriminatory gender-related social norms which played out in more or less overt ways to delay progress or require investment of time in getting key counterparts fully on board with the programme's core thrust. As noted elsewhere, progress in the private sector moved forward quickest where the entities concerned have and apply policies and commitments to gender equality and diversity. On the other hand, the fact that that government commitments and shifts are made more slowly, despite high-level national commitments to gender equality in all spheres, has needed to be taken into account in planning and resource allocation.

7. **M&E approaches and planning needs to include periodic tracking of longer-term impact:** The promotion and use of the Qualtrics software package to consolidate and present participants' feedback on training effectiveness (content and approach) has been an asset within the programme. However it needs to be systematically balanced by periodic longer term follow-up by partners via their own systems and processes(noting that Qualtrics also offers relevant capacities) to track longer term impact in terms of career progression, work satisfaction and benefits to the employer.

8. **Effective skills development does not need to be a high cost exercise which is reliant on external expertise and inputs:** The ILO I-B enterprise-based model for soft skills development demonstrates an innovative alternative approach which is low cost, self-driven, easily replicable, practical, sustainable and empowering. While noting that a period of adjustment from a traditional classroom style of learning to self-directed learning was required, stakeholder feedback positively affirmed the learning benefits of the 'we are all experts' orientation of the model which was grounded in the company context and drew on participant's knowledge and experience.

9. **Effective training delivery has many inter-related aspects:** Several considerations were highlighted by stakeholder feedback as being important in light of their experience with the programme. These included (i) the importance teaching quality (some early inconsistencies, since rectified, in teaching quality were reported in the Thailand online data analytics and visualization programme); (ii) the quality and relevance of training content (the added-value of being able to adapt I-B case studies to the sector and company context was highlighted by one user); (iii) the importance of accurate translation of written materials (in light of issues requiring re-translation by one major corporate partner); and (iv) taking account of trainees' work and personal learning

circumstances (e.g. flexible work, night shifts, learning on personal time, no access to devices, home conditions not conducive to learning, and national connectivity – with the latter highlighted as an issue in Indonesia, in particular).

10. **The importance of having the right skills and aptitudes within the programme delivery team:** However well a programme such as this may be designed, in the end the value of having the right balance of skills and experience within the programme team cannot be overstated. The current programme team has demonstrated resilience, a commitment to results and partners, openness to innovation and new opportunities, and an ability to change tack when needed. These attributes were in evidence in the rapid adjustments to approach made after COVID-19 struck, while still maintaining the overall integrity of the programme and its core directions.

11. **Internal programme / institutional dynamics are important:** Programme staff feedback indicated scope for stronger internal synergies and joint strategizing between the key programme components and related internal ILO units. This would *inter alia* have helped to provide more coherent and "joined-up' support and advice to the TO role. The establishment of a regional governance framework to bring the key external and internal actors periodically around the same table (or screen) may have helped to strengthen such an approach.

12. **Potential exists for continuing to strengthen links and synergies with other ILO skill development and employment-related programmes and activity at regional and national level**: This is particularly the case within the DWCPs in the three focus countries, as well as the ILO regional Skills for Prosperity programme in the Philippines. The planned documentation of lessons of the programme and development of a Sustainability Action Plan will contribute further in this direction.

13. **A stable programme funding environment is more conducive to ensuring longer term planning and a sustained focus on sustainability than a stop/start approach:** The annual short term stop/start nature of the funding arrangement with the donor has created uncertainties among programme staff because of their insecure job tenure, accentuating a focus at activity level to meet short term training targets.

14. **The role and approach of the donor can be a critical factor in programme effectiveness and impact.** In this case, while the J.P Morgan Chase Foundation had been part of the original highly ambitious target and indicator development, they showed commendable flexibility in the period covered by this evaluation, as well as trust and confidence in the professionalization and judgement of the programme team, when obstacles to progress were evident and adjustments were required. This empowered the programme team to look for solutions and ways forward, particularly in the context of the programme reorientation required as a result of COVID-19.

7 Conclusion and recommendations

7.1 Conclusion

The Women in STEM programme has been found to be relevant to SDG, gender equality, Industry 4.0, stakeholder and ILO agendas. In a short time it has demonstrated the potential to have a catalytic impact via a range of public and private partners (existing and new), systems and institutions on the profile and promotion of Women in STEM. While the programme design was found to be overly ambitious in some key areas (and would have benefited from a 12-month formal inception period to test and revise key elements), it has enabled the development of important 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. The programme's reorientation in the COVID-19 context was well managed in close consultation with partners and has *inter alia* seen an important focus on sustainable capacities, training content and systems for online learning in public and private (company) settings. These will remain an important element of future training provision for the institutions and companies concerned.

From an efficiency perspective, the programme has leveraged and supplemented limited human and financial resources to good effect, with the self-facilitated ILO I-B soft skills model demonstrating an ability to effectively engage large numbers at a low cost. At the same time it is too early to adequately assess longer term training and capacity developments impacts, although the foundations for these are clearly evident and require ongoing nurturing in the remaining programme period. The parallel assessment of the impact of the enterprise-based soft skills programme will provide data and analysis in this respect.

As indicated in the following recommendations, it is important now to intensify deliberate and specific attention to programme sustainability, both in terms of measures than can be taken in the remaining programme period and in the context of longer term follow-up through ILO and other national mechanisms, programmes and processes. Already the programme is demonstrating indications of sustainability through developments such as the engagement of EMBOs in the promotion and delivery of the I-B programme; capacity and systems development (including online) around STEM-related technical and soft skills TVET; corporate commitments to embedding the I-B programme within their own gender, diversity and HR frameworks; and the step-by-step development of a tripartite STEM cooperation and advocacy platform in the Philippines.

7.2 Recommendations for consideration by the ILO and donor

Drawing on the findings of this report, and mindful of the remaining time and resources available under the current programme, the following recommendations are made for consideration by the ILO and donor:

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. The latter should include prioritized sustainability-related initiatives within the remaining programme period, the documentation of programme lessons for wider dissemination, and the development of a longer term Women in STEM Sustainability Action Plan to guide follow-up. To the degree feasible, outreach to relevant workers' organizations should be stepped-up in the remaining programme period to strengthen the basis for their ongoing engagement around women in STEM issues.

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:

i. 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. Expand I-B promotion and piloting in the healthcare sector in Thailand in line with commitments made with ECOT to this end.
ii. 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. *Inter alia* draw on the current ICT technical training underway in Indonesia (which includes a target of 100 job placements) for lessons with wider applicability, and draw on the ILO Indonesia programme's links with public employment services.
iii. 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, including through ongoing efforts to engage EMBO and HR association support to this end.[32]
iv. Continue promoting and supporting steps to embed STEM-related skills into national TVET frameworks and curricula in the three focus countries. Further progress the incorporation of STEM-related skills such as team work and problem solving into the national competency framework in the Philippines. Pursue efforts with the Thailand Department of Skills Development / Ministry of Labour to incorporate the ILO I-B soft skills programme into the national training certification framework.
v. 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.
vi. Consider the incorporation of one additional round of TVET-based training in the Philippines to further test and refine the approach.
vii. Expand the Philippines STEM Technical Working Group into a full tripartite platform, with at least one tripartite meeting held before the programme end and agreement on measures to ensure ongoing functioning and development, including support as necessary through the ILO Country Office.
viii. In collaboration with relevant EMBOs and corporate partners, embed longer-term impact assessments into technical and soft skills training monitoring and evaluation arrangements.
ix. 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.

As part of the preparation of the plan, convene:

i. Country-level multi-stakeholder dialogues (including the ILO Country Offices and online involvement of ILO regional specialist staff) to review programme progress, lessons and measures

[32] 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.

for ensuring sustainability during the remaining programme period and beyond, in areas including those set out in Recommendation 2.

ii. Sector-specific stakeholder dialogues in each country with a similar focus to the above, and including the revisiting of original programme intentions vis-à-vis the development of sector-specific women in STEM action plans.

iii. An online whole-of-programme team dialogue on progress, lessons and measures for ensuring sustainability to be implemented in the remaining programme period and beyond. Such dialogue should *inter alia* identify (i) ways in which specific elements of the programme can be incorporated into other ILO regional programmes (particularly the Skills for Prosperity programme in the Philippines case) and relevant national initiatives under the respective DWCPs; (ii) the human and financial resources needed; and (iii) the specific stakeholders and ILO units who should lead on follow-up.

The Sustainability Action Plan should revisit and consider proposing linkages and ways forward for elements of the current programme not able to be sufficiently progressed within the current programme resources and timeframe due to factors such as the impact of COVID-19 and the pressures of time and resources. Key among these are (i) the development of Women in STEM strategic sector action plans (if not already in place); (ii) the further development of relevant national competency standards (building on progress to date); (iii) increased employer/industry engagement with STEM-related TVET design and delivery; (iv) the capacitation and advancement of mid-skilled women into STEM-related company management and leadership roles, with government, EMBO and individual company support; and (v) attention to training/employment transition (with realistic targets). The latter area should include how to promote and facilitate links with 'job placement offices' (as referred to in the PRODOC).

A regional mapping of relevant initiatives of other multilateral and bilateral agencies should furthermore be conducted as part of the development of the sustainability plan in order to identify potential for synergies and mutual reinforcement to reinforce and continue programme progress to date.

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.

Such extension should (i) continue the overall focus on low-skilled and disadvantaged women; (ii) revisit and move forward key areas of 'unfinished' business from the current implementation period (refer to recommendation 2 on the sustainability plan); (iii) actively engage with workers' organizations in each of the focus countries; and (iv) mainstream the full set of ILO cross-cutting policy drivers (gender equality and non-discrimination, international labour standards, tripartism and social dialogue, and environmental sustainability).

Any such extension should be supported by a rolling three-year budgetary commitment and arrangement to facilitate longer term planning, subject to satisfactory annual progress reporting. The management structure should further aim to maximise the potential for country-based staff to take on responsibility for programme planning, implementation and resource allocation over the programme period, within the overall programme results, coordination and governance framework.

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Annex 2: Stakeholder interviewees

Name	Position/role	Organization
ILO specialists		
Ms. Akiko Sakamoto	Specialist on Skills and Employability	Decent Work Technical Support Team (DWT), ILO Regional Office for Asia and Pacific, Bangkok
Mr. Charles Bodwell	Senior Specialist on Enterprises Development	DWT, ILO Regional Office for Asia and Pacific, Bangkok
Mr. Wade Bromley	Senior Specialist on Employers' Activities	DWT, ILO Regional Office for Asia and Pacific, Bangkok
Mr. Dong Eung Lee	Senior Specialist on Employers' Activities	DWT, ILO Regional Office for Asia and Pacific, Bangkok
ILO Women in STEM programme staff		
Ms. Anjali Patel	Technical Officer, Women in STEM (WIS) programme	WIS Office, ILO Regional Office for Asia and Pacific, Bangkok
Mr. Jordi Prattuca	Former Technical Officer and Advisor, Women in STEM (WIS) programme	WIS Office, ILO Regional Office for Asia and the Pacific, Bangkok
Ms. Navitri Guillaume Patri	National Project Coordinator, WIS programme	WIS Programme Office, ILO Country Office, Jakarta
Ms. Santy Otto	National Project Coordinator , WIS progamme	WIS Programme Office, ILO Country Office, Jakarta
Ms. Linartes Viloria	National Project Coordinator. WIS programme	WIS Programme Office, ILO Country Office, Jakarta
ILO Country Office staff		
Mr. Graeme Buckley	Director	ILO Country Office for Thailand, Cambodia and Lao PDR; and ILO Decent Work Technical Support Team, Bangkok
Ms. Jittima Srisuknam	Programme Officer	ILO Country Office for Thailand and Lao PDR, Bangkok
Mr. Kazutoshi Chatani	Employment Specialist	ILO Country Office for Indonesia, Jakarta
Ma. Concepcion E. Sardaña	Senior Programme Officer	ILO Country Office for the Philippines, Manila
Partner representatives		
Indonesia		
Ms. Fauziah	Director, Bina Intala (Directorate of Instructors Training)	Ministry of Manpower, Jakarta
Ms. Diana Savitri	Operation Director, International Strategic Partnership Centre	Indonesia Employers Association (APINDO), Jakarta

Mr. Danang Girindrawardana	Executive Director	APINDO, Jakarta
Mr. Miftahudin	Management of HR Training and Development Committee	APINDO, Jakarta
Ms. Ratelia	Administration Officer	APINDO, Jakarta
Ms. Sumarni	Head of Retail Training Centre	National Retailers Association (APRINDO), Jakarta
Philippines		
Mr. Jose Roland Moya	Director General	Employers Confederation of the Philippines (ECOP), Manila
Ms. Marissa G. Legaspi Mr. Vencel Y. Consoles Engr. Roy Louie Mingaracal Ms. Cynthia Javier Mr. Emil Mendoza, Jr. Ms. Arvee Sagun --, Ms. Gemma Lorena A. Reyes	Executive Director, Senior Technical Education and Skills Development (TESD) Specialist, Supervising Administrative Officer; Trainer, 2D/ 3D Animation, KorPhil HRDI; Administrative Officer, Senior TESD Specialist, Planning Office-Project Development Division	Technical Education and Skills Development Authority (TESDA), Manila Planning Office; Qualifications and Standards Office;
Ms. Olive Ybanez	Director, Human Resources(OD)	Teleperformance
Mr. Philip Del Rosario	Global Diversity & Inclusion	Teleperformance
Thailand		
Ms. Cattreeya Thithiwongasawet	Staff Program / Project Manager	Seagate Technology, Bangkok
Mr. Chinapop Kooramasuvan	Foreign Relations Officer	International Cooperation Division, Department of Skill Development, Ministry of Labour, Bangkok
Mr. Ukrish Kanchanaketu	Secretary General	Employers Confederation of Thailand (ECOT), Advisor

Annex 3: Summary of Outcomes/Outputs delivery, as at August 2020

Principle sources: (1) Progress Report, March 31 2020. Women in STEM Workforce Readiness Programme; (2) Progress Update, April to August 2020; (iii) Women in STEM Workforce Readiness and Development Program – Update Brief (undated 2019); (iv) ILO Update Brief, April 16 2018; (v) interviews with Women in STEM programme staff at regional and national level (September-October 2020).

The following table has two parts:

Part 1: Based on the Expected Outcomes set out in the Agreement between the ILO and J.P Morgan Chase Foundation of 7 September, 2018. These were shown as Outputs in subsequent programme documentation. The set of Immediate Objectives below were not included in the J.P Morgan Agreement, but are included in subsequent programme documentation in line with the original PRODOC.

Part 2: In addition to the original agreement with the donor, as shown in the 2019/2020 results framework.

Note: Not included below but stated in the March 2020 Women in STEM Progress Report is the following Output: Long-term action plan for post-project sustainability, including assessment of skills needs being developed during 2020. Reference to such plan is included in the comments column below.

Part 1. Expected outcomes and KPIs for 2017/2018 and 2019/2019 based on results framework agreed with J.P Morgan					
Immediate Objective 1: Sector selection and skills gap identification					
Outputs **Shown as expected outcomes in original agreement with the donor.**	**Key performance indicators 1 September 2017-August 31, 2018**	**Key performance indicators September 1 2018 – August 31, 2019**	**Key performance indicators September 1 2019 – August 31 2020**	**Progress as of July 2020**	**Comment and likelihood of delivery by project end**
2.1 Development of sector-specific STEM and employability Action plans for women in each of	Sector-specific demand-led Action Plans for STEM skills development and employability in each of the ASEAN-3 countries.	Sector-specific demand-led Action Plans for improvement of the skills needs identification. The plans will be used to drive change in the skills	Long-term action plans, including reports on skills needs developed and updated per country and sector.	Annually-updated programme workplans developed for each country. Revised in context of COVID-19.	On track: This output has been accepted as being on track by the ILO and donor due to the development of annual work plans which are

the ASEAN-3 countries.		identification and delivery systems in each of the ASEAN-3 countries.		Although relevant EBMO relationship development and training initiatives have been undertaken by the programme in the current main focus sectors (ICT/ Indonesia, IT-BPO/ Philippines and E&E/ Thailand), no fully-fledged sector action plans (with sector engagement and agreement) developed in the areas specified. The following adjustments were made to the sector focus of the programme during implementation: (i) stepping back from the automotive sector in Indonesia due to the challenges of making progress in a highly male dominated industry within existing resources and timeframe; and opening engagement with the healthcare sector of Thailand, with ECOT support and facilitation. The advent of COVID-19 has affected further progress in	aligned with the agreed KPIs and are sector specific. However, the original agreement between the ILO and the J.P. Morgan Chase Foundation would appear to envisage something rather more akin to fully-fledged sector-level action plans which involve "stakeholder review and buy-in." Implementation at this level has not proceeded. It is proposed in this report's recommendations that the 'larger' sector plan concept stated in the original programme agreement be revisited in the context of the proposed Sustainability Action Plan via multi-stakeholder consultations during the current programme period (1 sector per country) to assess the support for, viability of and key elements of such plans, and (if agreed) key steps

				piloting I-B in the latter case.	that could be taken to move planning forward. The stakeholders involved in such consultations would include relevant public agencies, TVET, EBMOs and selected company representatives at national and sector levels.
Immediate objective 2: Skills development and upgrading for entry-level, mid-skilled and high-skilled STEM jobs					
2.1 Successfully transition underprivileged female vocational school graduates into STEM-related employment with sustainable career and livelihood prospects. *Also refer to Output 3.1 below, which highlights the shift in programme orientation towards <u>job readiness training</u> for TVET graduates, as against placement per se.*	Train 530 TVET graduates across ASEAN-3 in STEM-related technical and soft skills. Place 80% of these women in full-time STEM related jobs with 3 months of completing the training programme. Engage at least 30 firms in work.	Train 300 TVET graduates in STEM-related technical skills in Indonesia and the Philippines. Place 70% of these women in full-time STEM related jobs within 6 months of completing the training programme Engage at least 10 firms in work-based learning opportunities.	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).	<u>Philippines</u> (target 665): 301 beneficiaries (65% women) trained on animation, game development, software programming, e-commerce and web development. 230 (TBC gender rates) trained on animation, game development, and web development. <u>Indonesia</u> (target 565): 242 women trained on graphic design, IT software solution, network professional and web development. Plans underway for further training to meet the target (only six obtain	<u>On track</u> for training targets (subject to final overall trainee numbers in light of COVID impact), <u>Not on track</u> for transition to employment. The placement rate (even when reduced from 70-50%) was ambitious within programme resources and timeframe and not met. Only six women placed in STEM-related jobs from the initial 242 trained in Indonesia, for example. The agreement with the donor envisaged the establishment of partnerships with TVET

				STEM-related employment). 624 people (60% female) trained in establishment of online small businesses as part of COVID-19 response in collaboration with Indonesia Retailers Association (APRINDO). Follow-up on certification and mentoring and networking underway.	institutions and enterprises for traineeships and apprenticeships to assist with job placements. Limited progress in this regard is reported to date. 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 still largely a new concept and require a period of socialization over time, while the immediate need is to focus on bringing greater structure to internship arrangements. The COVID-19 context makes transition into employment even more problematical, most likely for the remaining programme period. As a result, the programme focus in this regard has

					shifted to public capacities and curricula for employability training, to enhance employment prospects on the 'supply side' when labour market conditions improve. This should remain a priority focus for the duration of the programme. Longer term, increased attention to the 'demand' side of the training/employment transition dynamic is required, linking in with the role of EMBOs to assist in 'opening door' and as well as the role of public employment services.
2.2 Successfully transition women in low-skilled jobs to quality STEM-related employment with sustainable career and livelihood prospects.	Train 310 women in low-skilled jobs across ASEAN-3 in STEM-related technical and soft skills. 70% of these women move up to mid-skilled level STEM positions within 3 months of completing the training program.	Train 500 women in low-skilled jobs in STEM-related technical skills through workplace learning in Thailand. At least 70% of these women will be retained in their companies for at least two more years. At least 1,500 low-skilled women in ASEAN-3 trained in-company in critical soft and life-long	Train 500 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 (this indicator is conditional to the duration of the grant agreement) 3,000 low-skilled women in ASEAN-3 trained in	Over 1,500 low-skilled women workers in Thailand have been upskilled through a training programme on Data Analytics and Visualization for Manufacturing co-designed by the ILO and the Department for Skills Development (DSD), Ministry of Labour, with industry input. A further 694 from five companies are currently undergoing	<u>On track</u> for training targets, largely due to the significant training exercise at Seagate Technology, Thailand. <u>Not on track</u> for transition to employment. The indicator set for the movement of trainees into mid-skilled positions was not able to be met due to factors including time required for workers

		learning skills through peer assisted learning. 12 month turn-over rate is reduced by 30% among these women after training.	critical soft skills in-company through peer assisted learning 12-month turnover rate is reduced by 30% among these women after receiving training (this indicator is conditional to the duration of the grant agreement)	training in the same field until December 2020. At least 1,550 of those trained to date were at Seagate Technology. Over 15,000 beneficiaries (76% women) trained in-company to date on soft skills through the ILO I-B training programme. Of these, 14,804 were staff at mainly operator level at Seagate Technology, Thailand.	to move through the career pathways and timeframes of the companies and sectors concerned. The indicator concerning retention of staff who have received training requires ongoing monitoring in collaboration with the companies concerned. No initial data in this regard was yet available to the evaluation. The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships/ apprenticeships. No progress is this regard is reported to date.
2.3 Successfully transition mid-skilled women in STEM fields into leadership and management positions to ensure women not only enter, but also stay	Train 160 women in mid-skilled positions in leadership, management and high-end technical skills. At least 60% of these mid-skilled women will	Train 100 women in mid-skilled STEM positions in technical skills through workplace learning across ASEAN-3. At least 70% of these women will be retained	No KPI for 2019/2020. This Expected / Outcome/Output was removed from the programme. Focus and resources were shifted to low-skilled female workers across ASEAN-3.	Removed from results framework.	As noted in Section 6.2 (c), while acknowledging the rationale for subsuming this output under Outcome 2.2 in agreement with the donor, the evaluation observes that this has

and get promoted in STEM fields.	move up to higher of managerial positions within 24 months	in their companies for at least two more years. 300 mid-skilled women in ASEA-3 trained in-company in critical soft and life-long learning skills through peer assisted learning. 12 month turn-over rate is reduced by 20% among these women after receiving training.	The numbers for in-company training were incorporated into targets for low-skilled workers.		left an important gap in terms of carrying forward the original integrated concept for the programme.
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. *<u>Note:</u> The term 'tools' in this context has been interpreted in practice by the ILO and donor as being akin to 'initiatives' implemented to meet the KPIs specified.*	1 industry tool to communicate industry needs to TVETs. 1 industry tool to train, hire, retain and promote women in STEM fields. At least 30 companies review and provide feedback on tools.	3 occupational and competency maps in automotive, IT-BPO and electrical and electronics sectors developed to communicate skills needs to public training providers. 2 new skills/competency standards developed for data analytics and digital skills – designed and delivered through public private partnerships. At least 15 firms across ASEAN-3 institutionalize the ILO soft skills training methodology and modules developed for	3 occupational and competency maps for target sectors and countries updated and finalized (2019-2020). 1 skills/competency standard and curricula for data analytics and IT skills implemented (2019-2020). 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.	3 skills and career mapping studies developed at programme level, one per country. Also produced to support programme planning were (i) Rapid Assessment of ICT Skills and Career Opportunities for Women in Automotive Industries in Indonesia; and (ii) a Labour Market Analysis of ICT Courses at BBPLK Bekasi, Indonesia. Competency standards and curricula developed at <u>programme</u> level and delivered for Data Analytics and	<u>Partially on track:</u> Various initiatives completed and underway to better link industry skills requirements with TVET prioritization and planning, including through (i) 2 technical forums ; (ii) working with business in relevant areas to design training curricula (e.g. Data Analytics and Visualization in Manufacturing with DSD in Thailand); and (iii) the first steps to establish a national tripartite STEM cooperation and

		long-term skills development of female employees in-company.	2 technical forums to raise awareness and promote participation of girls and women in STEM sectors conducted.	Visualization jointly with DSD, with industry input, in Thailand. Engagement underway in the Philippines to integrate STEM-related skills into the national competency framework where relevant, including through engagement with Certification and Standards officials. Technical Working Group (TWG) established in the Philippines. Seen as step towards a comprehensive tripartite platform on national STEM policy and programmes. 5 agreements reached with national /sector employers' and business membership organizations for collaboration with the programme, particularly on promotion and application of ILO IB soft skills programme. 20 agreements reached with companies across ASEAN-3 for soft and	advocacy platform in the Philippines. The development of national STEM-related competency standards was not able to be progressed to the degree envisaged in the period until July 2020, although steps have been taken in this direction in both the Philippines and Thailand. 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 Data Analytics and Visualization. This was done via approval by the DSD and in a way that enables the standards to be applied at Skills Development Institutes nationwide.

				technical skills development. 15 training modules and supporting materials for in-company soft skills development developed. Worked started on developing team-work IB module on team work. Knowledge sharing platform developed as a regional learning hub/website that targets EMBOs, training service providers and companies. It includes information on relevant enterprise based, activity based and peer to peer learning training programmes. 2 national multi-stakeholder technical forums held. Initiatives underway to better link industry skills requirements with TVET prioritization and planning through (i) working with business in relevant areas to design training curricula (e.g. data analytics with DSD in	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. Steps to progress such developments should be part of the programme Sustainability Action Plan, linked to other ILO skills engagement at regional and national levels. The agreement with the donor envisaged the establishment of partnerships with TVET institutions and enterprises for traineeships and/or apprenticeships. No progress is this regard is reported to date, but this area too should be included in programme sustainability planning. Although not reflected in the programme design per se, the addition to the programme in practice of the two national publications on women in business and

				Thailand) and (ii) the 1st steps to establish a tripartite STEM cooperation platform in the Philippines. 1 regional experts meeting/event on the future of STEM education and training in TVETs in Southeast Asia conducted with participation of relevant public bodies from ASEAN-3 (Bangkok, 11-12 December 2019). 2 publications on women in business and management launched in with multi-stakeholder support ('Leading to Success Leading: The business case for women in business and management in Indonesia / Philippines'). The research findings and recommendations in each case links to the global focus of ILO-ACT/EMP on women in business and management (WIBM). Women in STEM technical and soft skills development is an integral part of this	management in Indonesia and the Philippines has been a highly relevant addition to the work. Both have attracted wide stakeholder interest and build on the programme's partnerships with the respective national Business Coalitions for Women Empowerment. As with other points above, follow-up to the launch of these reports to maximize their value-addition should be included in the programme Sustainability Action Plan.

				agenda in the Industry 4.0 context.	
Part 2: Included in the results framework for 2019/2020					
Immediate Objective 3: Job Placement					
Outputs	**Key performance Indicators 2018**	**Key Performance Indicators 2019**	**Key Performance Indicators 2020**	**Progress as of July 2020**	**Comment and likelihood of delivery by project end**
3.1 TVET level assistance for women participants including training conducted on issues related to recruitment and job placement. *Also refer to Output 2.1 above.*			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	Philippines: 87 women trained (2019) through Job Preparation Training Program for Women in STEM with selected TVETs/TESDA and DICT. Linked to obtaining work related to technical training. Inclusion of job readiness modules within the TESDA #WOMENCANDOIT scholarship programme on web development/ design, animation and game programming.	On track (related to Output 2.1): As noted above, the COVID-19 response has seen an increased focus on job readiness training in the Philippines and capacitating TVET instructors to go online in Indonesia. This foci should be retained and strengthened for remainder of current programme period, and beyond. This focus should be retained and

			STEM skills developed and implemented.	Planning for TOT for ICT-related TESDA instructors on how to carry out the above job readiness training modules. To ensure sustainability, the online job readiness modules will be compatible with TESDA's national online programme for 21st Century Skills. Development underway for a curriculum guide for TESDA instructors to help them integrate higher order thinking skills into teaching materials and methods for ICT-related online training. I-B training moved online as part of COVID response. Piloted with 3 companies. Follow-up planned with ECOP to strengthen EBMO capacities to support online delivery of modules at enterprise level. <u>Indonesia:</u>	strengthened for remainder of current programme period, and beyond. The intent to establish a communication platform set out in revised indicators and targets (in order to strengthen TVET institution's outreach capacity) was carried forward through directly connecting EMBOs with TVET system authorities and the establishment of the STEM Thematic Working Group in the Philippines.

				60 public TVET instructors trained in creation and delivery of online training. Plans underway to extend training to 120 more instructors. <u>Communication platform</u>: Carried forward through directly connecting EMBOs with TVET system authorities and the establishment of the STEM Thematic Working Group in the Philippines.	
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	5 workshops with national employers' organizations and relevant enterprises across ASEAN-3 to develop joint action plans conducted (2 workshops in the Philippines, 2 in Thailand and 1 in Indonesia). While not producing formal action plans per se, the workshops led to agreement on priorities for individual and joint action with programme support.	<u>Partially on track:</u> Workshops held, but follow-up constrained by COVID-19 and reorientation of programme. Engagement with corporate partners to recruit STEM graduates remains an important priority to be pursued in programme follow-up planning, including in association with national and sector EBMOs and longer-term implementation of

					mentorship, traineeship and quality apprenticeship programmes where relevant and feasible.
Immediate Objective 4: In-job support					
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 public and private actors and assisting girls and women.	MOU signed with ECOP for promotion and use of IB soft skills training modules as part of their national membership services. Progress towards similar MOU underway with APINDO, but paused due to COVID-19. Discussions continue with ECOT to similar end. MOUs signed with Philippine Business Coalition for Women Empowerment (PBCWE) and Indonesia Business Coalition for Women Empowerment (IBCWE). MOU facilitated / supported between Indonesia Ministry of Manpower and BBPLK Bekasi (national TVET 'centre of excellence').	<u>On track:</u> The programme should aim to progress MOUs with APINDO and ECOT for I-B promotion and delivery to the degree possible by the end of the current funding period, taking into account partner capacities and priorities. Leverage/support the agreements with the PBCWE and IBCWE to support ECOP and APINDO respectively in promoting and delivering the I-B soft skills programme. Continue to explore options and possibilities for tapping into national and company resources to support the current programme and the continuation of its work

				Supplementation of programme resources through (i) government commitments of up to 1,300 scholarships for TVET-based training programmes and (ii) coverage by private sector partners of workers' salaries and social protection in order to establish and deliver paid, enterprise-based training programmes for women workers.	and achievements. In this regard, the Federation of Thai Industries (FIT) and the Personnel Management Association of Thailand (PMAT) have indicated their keen interest in collaborating with the Women in STEM programme, including through an MOU arrangement. The production of communications on programme impact and collaboration remains to be fully implemented, although the case study summarized below can be seen as contributing towards this indicator.
4.2 Carry out in-company training programmes leading to career advancement of participants			3 case studies developed –one per country- documenting the impact on female workers and employers of the work-based learning program implemented 1 final report documenting lessons learned and opportunities for programme	1 case study produced to date. This includes 1 'long' video and 6 short clips with human stories- documenting the impact on female workers and employers of the work-based learning program implemented in Thailand.	<u>Partially on track</u> (noting that: (i) the Output overlaps with coverage above of in-company technical and soft skills training, and (ii) there is little direct correlation between the Output and the 2019-2020 KPIs listed. The final report on lessons learned and future opportunities for

			implementation beyond 2020		programme implementation should remain a priority for the programme, developed either jointly or in synergy with the above-mentioned programme Sustainability Action Plan.

Annex 4: Summary of key consolidated findings from Qualtrics training evaluation feedback

The programme has been rigorous about conducting post training surveys and presenting the findings on satisfaction with content, learning outcomes and dynamics. Following are two sample sets of training assessments provided through the Qualtrics online survey package (other training providers have used different assessment approaches). As noted in the main report, trainee satisfaction ratings have been consistently high for all trainings.

Women in STEM programme post training surveys: In Business soft skills training

The following shows selected key results of surveys conducted with participants who were part of the In Business trainings conducted in the electronics sector in Thailand, automotive and ICT sectors in Indonesia and IT-BPM sector in Philippines.

Overall level of trainees' satisfaction with the trainings: 14,153 responses. Extremely happy 81%, moderately happy 18%.
The content of the training was applicable to trainees' daily work life: 14,606 responses. Strongly agree 61%, agree 39%.
Would trainees recommend these trainings to colleagues? 14,170 responses. Definitely yes 91 %, probably yes 8%.
Trainees preferred this type of training (in group, no teacher) to traditional training methods: 14,583 responses. Strongly agree 51%, agree 47%.
How much trainees learned on the selected soft skills modules: 14,086 responses. A lot 54%, a great deal 39%.
Trainees learned new strategies or techniques to apply in their daily work life: 14,521 responses. Definitely yes 89%, probably yes 10%.
Taking these trainings made trainees feel more committed to their jobs and companies: 13,965 responses. Strongly agree 50%, agree 48%.
Trainees are determined to apply their new skills and knowledge in their jobs: 14,233 responses. Strongly agree 55%, agree 44%.

Women in STEM programme: Technical post-training surveys in Thailand

The following shows key results of surveys conducted with participants who were part of the Data Analytics and Visualization for Manufacturing training in the electronics sector in Thailand.

Overall level of trainees' satisfaction with the trainings: 1,101 responses. Extremely happy 73%, moderately happy 26%.
The content of the training was applicable to trainees' daily work life: 1,102 responses. Strongly agree 56%, Agree 41%.
Trainees learned new strategies or techniques to apply in their daily work life: 1,102 responses. Definitely yes 61%, probably yes 37%.
How much Power Point trainees learned (as one category within the training): 1,102 responses. A great deal 41%, a lot 39%.
Trainees are determined to apply their new skills and knowledge in their jobs: 1,102 responses. Strongly agree 63%, agree 35%.
Trainees would like to take similar data analysis trainings in the future: 1,102 responses. Definitely yes 80%, probably yes 15%.

Women in STEM programme: Supervisor feedback

Survey demographics

- The survey was conducted with 413 supervisors;
- Of total respondents:
  - 78 percent were from Thailand, 13 per cent were from the Philippines and 9 percent were from Indonesia;
  - 55 percent were women and 45 per cent were men;
  - 82 per cent were supervisors, 10 per cent were managers and 8 percent held other positions at surveyed companies;
  - Half of respondents were aged between 43 and 52 years, and 12 percent of respondents were aged between 38-42 years.

Work-related changes upon completing ILO's training

Of total respondents:

- 95 percent reported seeing positive changes in their teams credited to the ILO soft skills training program;
- 48 pe cent agreed and 45 percent strongly agreed that their team acquired relevant skills to apply in their daily work;
- 51 percent agreed and 38 per cent strongly agreed that their team was more motivated to do their job;
- 51 pe cent agreed and 39 percent strongly agreed their team had a more positive attitude towards their job;
- 54 percent agreed and 37 percent strongly agreed that self-confidence among their team improved;
- 55 percent agreed and 31 percent strongly agreed that their team was able to handle new or different tasks at work;
- 52 percent agreed and 35 percent strongly agreed that relationships among their team improved;
- 51 percent agreed and 39 percent strongly agreed that relationships between supervisors/managers and subordinates improved;
- 53 percent agreed and 33 percent strongly agreed that performance of their team at work improved;
- 51 percent agreed and 34 percent strongly agreed that productivity in their team increased.

Behavioural changes on trainee as a result of ILO's training

Of total respondents:

- 57 percent agreed and 35 percent strongly agreed that communication of their team with them improved;
- 62 percent agreed and 24 percent strongly agreed that the ability of their team to solve problems at work without needing management support improved;
- 56 percent agreed and 34 percent strongly agreed that collaboration among members of their team improved;
- 54 percent agreed and 31 pe cent strongly agreed that the ability of their team to think creatively and generate new ideas at work improved;
- 57 per ent agreed and 30 percent strongly agreed that the ability of your team to take the lead at work improved;
- 57 percent agreed and 32 percent strongly agreed that the ability of their team to think in a logic and rational manner improved;
- 56 percent agreed and 30 percent strongly agreed that their team was better prepared to speak in front of others at work;
- 58 percent agreed and 27 percent strongly agreed that the ability of their team to effectively reach consensus on issues at work improved.

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.

Annex 6: Evaluation workplan (revised):

Task	Timing	Number of days	Comment
Desk review and preparation of inception report.	7 – 18 September 2020	2.5 days	Key documents for perusal agreed with and provided by the regional programme coordinator
Interviews with ILO programme/ specialist staff and partners (including preparation and follow-up)	10 September – 3 November 2020	3 days	Due to commitments of key stakeholders, it was necessary to extend this phase to accommodate their availability
1st draft report	By 30 October 2020	2 days	Including all interviews it has been possible to schedule to date
Final report	By 7 November October 2020	1 day	Incorporating feedback on draft report from ILO programme and specialist staff. Finalized in consultation with TO.
Evaluation summary	By 7 November 2020	0.5 day	
Total days		9	

Annex 7: Evaluation Terms of Reference

Terms of reference for the Internal Mid-Term Evaluation of the Women in STEM Workforce Readiness and Development Programme

Project Code	RAS/17/04/JPM)
Title	Women in STEM Workforce Readiness Programme
Countries Covered	Indonesia, the Phillipines and Thailand
Strategic Policy Outcome (s)	Outcome 1 - More and better jobs for inclusive growth and improved youth employment prospects Outcome 4 - Promoting sustainable enterprises
P&B Outcome (s)	IDN 126 *(initially IDN 105)*, IDN 129, IDN 131, PHL101, PHL104, THA228
Administrative Unit	DWT/CO-Bangkok
Donor	JPMorgan Chase Foundation
Official Project Duration (as per financial system)	September, 2017 to November, 2021
Type of Evaluation	Internal Mid-Term
Evaluation Period	September, 2017 till July, 2020

1. Introduction and rationale for the Mid-Term Evaluation

The Women in STEM Workforce Readiness Programme (Women in STEM) started implementation in December 2017, following the official approval in September 2017. The Programme is funded by the JPMorgan Chase Foundation with a total project budget to date of US$ 2,415,0000 covering Indonesia, the Philippines and Thailand.

This term of reference (TOR) is designed for an independent mid-term evaluation of the Women in STEM Programme. This evaluation forms part of the International Labour Organisation's (ILO) strategic practice of ensuring that projects and programmes are adequately evaluated.

The mid-term evaluation will analyse progress made towards achieving project outcomes, identify lessons learned, challenges faced and propose recommendations for improved delivery of quality outputs and achievement of the outcomes. The evaluation will also provide the opportunity to take stock, reflect, learn and share knowledge and facilitate improvements in the implementation and monitoring of progress and also make adjustments to the results based framework to ensure that tangible and sustainable results are achieved by the end of the project.

The evaluation will also assess the projects progress in the context of Covid19 and the extent to which the project was able to adapt and respond.

2. Project 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 reasons fewer women tend to enter the vocational training programmes related to these sectors. Second, those that do often face challenges of placement vis a vis their male counterparts. Once within firms, 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 higher rates than males. And finally, they

often are overlooked in terms of career advancement, at both the lower levels and with regard to their moving into senior managerial roles.

To address these issues, the automotive and ICT, IT-BPM, and electrical and electronics 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. These sectors are rapidly evolving and becoming more innovative, requiring critical soft and technical STEM-related skills. As a result, low skilled-jobs are clearly declining and traditional blue-collar jobs are shifting to more skilled occupations. To change this, 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 are affecting workers' productivity and enterprises' competitiveness in this rapidly changing context. In turn, productivity is a key source of improved living standards for women and also a major contributor to economic growth.

Project Strategy
The ILO's 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.

Project objectives
The collaboration of the Programme with relevant public bodies and the private sector across ASEAN-3 aims to address the challenges that may lead to job losses and increasing inequalities due to automation, especially among low-skilled women workers, as well as to lower competitiveness of enterprises. For the past two years, the Women in STEM has been working in four sectors in three countries –the Electrical and Electronics sector in Thailand, automotive, ICT and most recently retail sectors in Indonesia and IT-BPM sector in the Philippines.

The Programme is actively collaborating with government and the private sector -including employers and business membership organizations- in Indonesia, the Philippines and Thailand (ASEAN-3) 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 Programme 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
- Successfully transition 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
- 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

Alignment to strategic frameworks and outcomes

- 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.

3. Purpose and scope of the Mid-Term Evaluation (MTE)

The MTE serves two main **purposes:**

1. It provides an independent assessment of progress to date of the project, assessing performance as per the foreseen targets and indicators of achievement at output level; strategies and implementation modalities chosen; partnership arrangements, constraints and opportunities; and
2. It provides recommendations for the remainder duration of the project in terms of strategies, institutional arrangements, partnership arrangements and any revisions to the results based framework and other areas within which the evaluation team may wish to make recommendations.

4. Scope

The independent MTE will cover all outcomes of the project with particular attention to synergies across components. The MTE will assess key outputs produced since the start of the initiative and where relevant make recommendations regarding:

- Progress made towards achieving the project outcomes
- Quality outputs in the project period
- Likelihood of reaching outcomes within the project period
- Internal and external factors that influence project implementation
- Management and coordination of the project, including staff management
- The extent of tripartite partners buy-in and participation in the project
- Strategic fit of the initiative
- Relevance of the initiative within national development priorities/frameworks
- Synergies with other enterprise and skills development programmes

5. Clients

The primary clients of the evaluation are JP Morgan, as the donor of the initiative, ILO offices of Manilla, Jakarta and Bangkok, including the decent work support team, as the executing agent of the initiative and the project team itself. The evaluation process should be participatory. As such, the ILO office, the tripartite constituents and other parties involved in the execution of the project may use, as appropriate, the evaluation findings and lessons learnt.

6. Evaluation Criteria and Questions

The evaluation will address ILO evaluation concerns, such as:

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

Gender concerns will be based on the ILO Guidelines on Considering Gender in Monitoring and Evaluation of Projects (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.

7. Key Evaluation Questions

The evaluator shall examine the following key issues:

1. Relevance and strategic fit
   a. Project relevance to national development plans, Decent Work Country Programme (DWCP) and the SDGs
   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 Covid19
   c. How well it complements ILO strategic framework and other ILO programmes in the region
   d. Strategic fit with the JP Morgan strategy

2. Validity of design
   a. Adequacy of the design process, e.g. is the project design logical and coherent and based on relevant evidence
   b. Whether the activities and outputs are causally linked to the intended outcomes that in turn link to the broader development objectives
   c. Whether the targets and indicators have been realistically and sufficiently defined for the project
   d. Considering the results that were achieved so far, whether the project design was realistic
   e. Has the design and implementation adequately considered cross cutting issues like gender?

3. Project effectiveness
   a. To what extent the outputs and outcomes have been achieved or likely to be achieved b. To what extent the outputs produced and delivered so far follow the work plan, considering also the quantity and quality of the outputs and whether they are satisfactory (stakeholders should be interviewed to gauge how they perceive them)

c. The effectiveness of the backstopping support provided so far by the various units in the ILO to the project

d. Have the project activities and impact been evenly distributed across the geographic areas (explore why or why not)

e. Are there any unintended results of the project g. What internal and external factors may have influenced the ability of the ILO to meet the project targets and what measures were taken in particular in the context of Covi19.

4. Efficiency of resource use

a. Have the available technical and financial resources been adequate to fulfil the project work plan

b. Have the management and governance arrangements of the project been adequate; is there a clear understanding of roles and responsibilities

c. How effectively has the project management monitored the project performance and results; is a monitoring and evaluation system in place and how effective is it; is relevant information systematically collected and collated; is data disaggregated by gender and other relevant demographics

d. Has the project received adequate administrative, technical and – if needed – political support from the ILO Offices (Manila, Jakarta and Bangkok) and technical specialists in the region

e. Is the project receiving adequate political, technical and administrative support from its national partners/implementing partners

f. Is the project collaborating with other ILO programmes and with other donors in the country/region to increase its effectiveness and impact

g. Are the relevant stakeholders involved in an appropriate and sufficient manner

5. Impact Orientation and Sustainability

a. Is the programme strategy and programme management steering towards impact and sustainability

b. Has the project started building the capacity of people and national institutions or strengthened an enabling environment (laws, policies, people's skills, attitudes, etc.)

c. Do the project activities appear sustainable; what steps can be taken to enhance the sustainability of project components and objectives

6. Lessons learned

a. What good practices can be learned from the project that can be applied to similar future projects

b. What are the ILO, the donor and partners' opinions about the following questions:

   i. What works well?
   ii. What does not work well?
   iii. What would we do the same?
   iv. What would you do differently

8. Methodology

The evaluation will be carried out through a desk review and through interviews over the phone/skype/zoom with ILO staff and key stakeholders.

Desk review: A desk review will analyse project and other documentation provided by the project management. 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 the inception report and the final evaluation instrument, which should be finalized in consultation with the project manager. The project team and technical specialists will review the documents before conducting any interviews

Interviews with ILO staff: The evaluation team will undertake group and/or individual discussions with relevant ILO staff, including project staff. The evaluation team will also interview key ILO staff responsible for financial, administrative and technical backstopping of the programme An indicative list of persons to be interviewed will be suggested by the project management and evaluation focal point as appointed in CO Bangkok**.**

Interviews with key stakeholders: The project team will prepare a list of stakeholders to be interviewed and will facilitate the contact for the evaluation team.

9. Main Outputs

The evaluator will prepare the following reports (and a final PPT) in the course of executing his/her assignment:

1. An inception report (no more than 6 pages)
2. First Draft report (10-15 pages)
3. Final Report incorporating comments (10-15 pages)
4. An evaluation summary according to the ILO's template for summaries of independent evaluation reports.

The Evaluation Report should be presented as per the proposed structure in the ILO Evaluation Guidelines:

- Cover page with key project and evaluation data
- Executive Summary
- Acronyms
- Description of the project
- Purpose, scope and clients of the evaluation
- Methodology
- Clearly identified findings by criterion
- Conclusions
- Recommendations
- Lessons learned and good practices
- Annexes

Terms of Reference
Project Work Plan
List of Interviews
Any other relevant documents

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 agreement of ILO CO Bangkok. Key stakeholders can make appropriate use of the evaluation report in line with the original purpose and with appropriate acknowledgment.

10. Management arrangements, work plan and timeframe

Composition of the evaluation team: The consultant or evaluation team should have the following qualifications:

Required

- Masters Degree in business, development management, or related graduate qualifications
- A minimum of ten years of professional experience in evaluating in mid-term, final or post-project evaluations and/or impact assessments of externally funded projects

- Experience in enterprise development and/or skills development
- Proven experience with logical framework approaches and other strategic planning approaches, M&E methods and approaches (including quantitative, qualitative and participatory), information analysis and report writing

Desirable:
- Knowledge and experience of the UN System/s
- Experience in evaluating projects within Asia

Management Arrangements: The evaluation team will report to the Evaluation Manager to be assigned by CO Bangkok, who will work closely with the regional evaluation focal point in the regional office. The Evaluation Manager will draw on the support of the project manager for all logistical arrangements related to the evaluation exercise.

Work Plan and expected timeframe/duration of the assignment: The following is a schedule of tasks and anticipated duration of each output. The total working days is estimated at 9 working days, with the total duration of the contract being from 3 September till 18 September to allow for revisions/comments. A final report will be completed by 18 September 2020, taking into account the comments received (see revised workplan agreed with Evaluation Manager)

Dates	**Activity**	**Working days (equivalent of)**
3 September 2020	Service Provider engaged	
3- 5 September 2020	Desk review (including introductory call with project manager and evaluation manager)	2
6 September 2020	Inception report	1
8 – 11 September 2020	Key ILO interviews	1
8 – 11 September 2020	Stakeholder interviews	2
15 September 2020	Draft Report submitted to ILO	2
18 September 2020	Final report submitted and presented (virtually)	1