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BRAZIL

**REPROGRAMMING THE TECH SECTOR: INCLUDING BLACK
AND TRANSGENDER WOMEN THROUGH ONLINE EDUCATION**

(BR-T1458)

DONORS MEMORANDUM

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PROJECT SUMMARY

BRAZIL

REPROGRAMMING THE TECH SECTOR: INCLUDING BLACK AND TRANSGENDER WOMEN THROUGH ONLINE EDUCATION

(BR-T1458)

This project addresses a twofold problem: the limited supply of programmers in Brazil and the large gender gap and lack of diversity in the Brazilian technology sector. In Brazil only two million STEM professionals graduate every year, compared to India's close to 23 million, USA's 16 million and China's 15 million. Barely 17% of computer science graduates are women, and only 25% of the technology labor force are women. On the demand side, the IT sector is growing in Brazil. In 2019 it was estimated at US\$125.4 billion, equivalent to 6.8% of GDP, employing 1.56 million workers. The number of startups almost tripled in the last three years – from 4,300 to 12,700 – exacerbating the deficit of 260,000 programmers as many of them are tech-based. According to the Brazilian Startup Association, 74% of all startups in Brazil have entire or mostly entire male teams, with only 3% of startups having all female teams. Black, brown and indigenous women only make up 11% of all technology jobs in Brazil. In the 2020 Emerging Jobs Reports by LinkedIn, 9 out of the top 15 emerging jobs are related to the IT sector. A growing IT sector is a great opportunity for the 14.5 million unemployed Brazilian women.

The project will pilot a high-impact online coding bootcamp modality for vulnerable women, prioritizing black and transgender women, and will develop an online hiring platform for potential employers to be able to diversify their tech teams and to improve the ability of Reprograma, the executing agency of this project, to generate revenue and become self-sustainable over time. These solutions will allow Reprograma to scale its program, reaching a higher number of vulnerable women in Brazil. A total of 2,160 women will participate in one-day workshops as part of the selection process. Finalists will participate in ten full-time online bootcamps, graduating up to 400 women as front and back-end developers. Focus will be on non-white women, where at least 55% of cohorts are black women, and 5% are transgender. Also, on unemployed women, with a maximum average household income equivalent to two to three minimum wages; and women with no previous programming knowledge, who have always wanted to learn how to code but haven't had the means to afford it.

The project will be executed by Reprograma, a non-profit organization created in 2016 and the only programming bootcamp in Brazil focusing on underserved and vulnerable women, specifically those identified as non-white, transgender and unemployed women – women who cannot afford coding courses, are not being targeted by other coding schools and who want to get a job in the technology sector. The project will be implemented in partnership with key companies that will be selected to contribute with knowledge, experience and financing.

Reprograma was one of the proposals selected for financing through the "Bootcamps for Tech Fans" challenge that the IDB Lab together with the IDB's Social Sector and CTI Division launched in 2019. Total financing for the project is USD 745,000, with USD 445,000 contributed by Reprograma and its partners, and USD 300,000 corresponding to non-reimbursable technical cooperation resources from IDB Lab.

ACRONYMS AND ABBREVIATIONS

BRL	Brazilian Reais
CTI	Competitiveness, Technology and Innovation Division of the IDB
DNA	Diagnostic of Executing Agency Needs
EDU	Education Division of the IDB
GDP	Gross Domestic Product
IBGE	Instituto Brasileiro de Geografia e Estatística
IDB	Inter-American Development Bank
IIC	Inter-American Investment Corporation
IT	Information Technology
ICT	Information Technology and Communications
KPI	Key Performance Indicator
LGBTI+	Lesbian, Gay, Bisexual, Transgender and Intersex
LMK	Labor Markets and Social Security Division of the IDB
MIF	Multilateral Investment Fund
PR	Public Relations
STEM	Science, Technology, Engineering and Mathematics
TVET	Technical and Vocational Education Training
USD	United States Dollar

PROJECT INFORMATION

BRAZIL

REPROGRAMMING THE TECH SECTOR: INCLUDING BLACK AND TRANSGENDER WOMEN THROUGH ONLINE EDUCATION (BR-T1458)

Country and Geographic Location:	Brazil.		
Executing Agency:	Reprograma.		
Focus Area:	Knowledge Economy.		
Coordination with Other Donors/Bank Operations:	This operation is aligned with CTI's Economic and Sector Work Program (RG-E1643) Digital Bootcamps: How do they Function, with LMK Pilot for modular technical and vocational education training in São Paulo's digital industries (BR-T1460) and with EDU, which is currently designing an operation (BR-L1551) that will include actions to reduce the gender gap in the technology sector in the state of Parana.		
Project Beneficiaries:	2,160 women will participate in one-day workshops as part of the selection process. 400 unemployed women will be trained in the online training modality. Focus will be on minorities (55% of cohorts will be black women, 5% transgender women)		
Financing:	Technical Cooperation:	US\$ 300,000	40%
	Equity:	-	
	Loan:	-	
	Other (explain):	-	
	TOTAL IDB Lab FUNDING:	US\$ 300,000	
	Counterpart Reprograma:	US\$ 214,821	29%
	Counterpart Partners Companies	US\$ 230,179	31%
	TOTAL PROJECT BUDGET:	US\$ 745,000	100%
Execution and Disbursement Period:	24 months of execution and 30 months of disbursement.		
Special Contractual Conditions:	None		
Environmental and Social Impact Review	This operation was screened and classified as required by the IDB's safeguard policy (OP-703) on 29 of July 2020. Given the limited impacts and risks, the proposed category for the project is C.		
Unit responsible for disbursements	COF/CBR		

I. The Problem

A. Problem Description

- 1.1. **The problem this project is tackling is the lack of digital talent and the absence of vulnerable women in Brazil's tech industry.** This is due to several reasons, among them the fact that, like in many other countries, girls and women are not encouraged to pursue careers in STEM (Science, Technology, Engineering and Mathematics); the few women that do decide to follow STEM careers don't necessarily feel safe nor welcome in these programs. Another reason is that universities are not adapting quickly enough to the needs of the digital economy and what is being offered is usually more theoretical than the practical, hands-on, project and problem-based methodologies being taught in bootcamps. The few bootcamps that have begun operating in Brazil during the last 3-4 years are not targeting vulnerable women, such as black and transgender, nor addressing barriers that women face in part because it is not profitable. Lastly, women in rural or smaller cities don't have access to in-classroom coding programs.
- 1.2. **Vulnerable women do not have access to affordable educational programs that address the barriers they face to get into STEM fields.** Some argue that the root of the problem lies at the university level. In Brazil only two million STEM professionals graduate every year, compared to India's close to 23M, USA's 16 million and China's 15 million.¹ Barely 17% of computer science graduates are women, and only 25 percent of the technology labor force are women.^{2 3} According to the Brazilian Startup Association, 74% of all startups in Brazil have entire or mostly entire male teams, with only 3% of startups having all female teams.⁴ Black, brown and indigenous women only make up 11% of all technology jobs in Brazil.⁵
- 1.3. In the United States, of the 25% of women working in tech, black women account for 3%. In Brazil, no such data exists but access to higher education is already unequal. According to the Brazilian Institute of Geography and Statistics (IBGE), the percentage of white women with a completed higher education is 2.3 times larger than black women, which is 10.4%, which can lead us to hypothesize that numbers of black women in the Brazilian tech sector are similar – or worse – than in the United States.⁶
- 1.4. This already challenging scenario is aggravated by the ongoing pandemic caused by the Sars-Cov-2 virus. According to the Brazilian National Continuous Household Sample Survey, in March of 2020, when the country began the quarantine, seven million women left the job market. That is two million more than the number of men who are in the same

¹ Temporada de caça aos devs (2020). Exame. <https://exame.com/revista-exame/temporada-de-caca-aos-devs/>

² Apenas 17% dos programadores brasileiros são mulheres (2018). Época Negócios.

<https://epocanegocios.globo.com/Economia/noticia/2018/02/apenas-17-dos-programadores-brasileiros-sao-mulheres.html>

³ Mulheres ocupam apenas 25% dos empregos em TI no país, aponta levantamento (2019). Correio Braziliense, Tecnologia.

https://www.correiobraziliense.com.br/app/noticia/tecnologia/2019/04/23/interna_tecnologia.750829/mulheres-ocupam- apenas-25-dos-empregos-de-ti-no-pais.shtml

⁴ O momento da startup brasileira e o futuro do ecossistema de inovação (2017). Associação Brasileira de Startups.

https://drive.google.com/file/d/1WAw_6rExZfuKBSxGdlwgvvitPgFO-8Z7/view

⁵ Temporada de caça aos devs (2020). Exame. <https://exame.com/revista-exame/temporada-de-caca-aos-devs/>

⁶ Estatísticas de Gênero (2014). IBGE. <https://www.ibge.gov.br/apps/snig/v1/publicacao.html?loc=0>

situation.⁷ Women, especially black women, are the group most affected by this since they are largely employed in informal jobs and are unable to work from home. According to a research conducted in June 2020 by *Coletivo Vote LGBTQ+*, black women are 22% more likely than white women to declare that the most difficult aspect of the quarantine is the lack of money.⁸

1.5. Companies' hiring practices in the IT sector have disadvantaged vulnerable women.

The ICT sector is a growing sector in Brazil. In 2019 it was estimated at US\$125.4 billion, equivalent to 6.8% of GDP, employing 1.56 million workers.⁹ The number of startups almost tripled in the last three years – from 4,300 to 12,700 – exacerbating the deficit of 260,000 programmers as many of them are tech-based.¹⁰ In the 2020 Emerging Jobs Reports by LinkedIn, 9 out of the top 15 emerging jobs are related to the IT sector.¹¹ A growing IT sector is a great opportunity for the 14.5 million unemployed Brazilian women.¹² Women represent 51% of Brazilian population and tapping into the technology sector is a win-win for economy and society, but the reality is that women have several obstacles accessing the booming technology market. According to a study on gender inequality on the labor market in Brazil by IEDE¹³, careers in STEM or related to industry are mainly occupied by men (between 68%-97% majority men). With respect to earnings, when comparing average earnings of men and women, average earnings of women are 62% lower than men. This difference grows when comparing occupations with lower levels of education, reaching 79%.

1.6. Alternative coding schools targeting women are few and small and better data and evidence is needed to scale what works.

Targeted initiatives are necessary. Although in the last 24 years Brazil has seen a 586% growth on the demand for computer courses, the percentage of women enrolled in these courses have dropped from 34.8% to 15.5% as indicated by a National Institute of Educational Studies and Research from the Ministry of Education.¹⁴ Technology companies tend to look for developers in universities, where most graduates are male and white. For technology companies to diversify their technology teams they will need to start looking outside of universities and this is where Reprograma and other non-traditional technology schools can add significant value.

1.7. Reprograma was one of the proposals selected through the “Bootcamps for Tech Fans” challenge¹⁵ that the IDB Lab together with the IDB's Social Sector and CTI Division launched in 2019. Through this challenge 57 organizations throughout LAC applied for financing in two categories: mature bootcamps and incipient bootcamps.

⁷ Pandemia faz sete milhões de mulheres deixarem o mercado de trabalho (2020). O Globo <https://oglobo.globo.com/economia/celina/pandemia-faz-sete-milhoes-de-mulheres-deixarem-mercado-de-trabalho-24489196>

⁸ Pessoas trans e LGBTQ+ negras e indígenas estão mais expostas ao impacto da covid-19, aponta pesquisa (2020). Gênero e Número. <http://www.generonumero.media/lgbt-coronavirus/>

⁹ Relatório Setorial de TIC 2019 (2019). Brasscom. <https://brasscom.org.br/relatorio-setorial-de-tic-2019/>

¹⁰ Temporada de caça aos devs (2020). Exame. <https://exame.com/revista-exame/temporada-de-caca-aos-devs/>

¹¹ Profissões Emergentes 2020 (2020). LinkedIn. https://business.linkedin.com/content/dam/me/business/en-us/talent-solutions/emerging-jobs-report/Emerging_Jobs_Report_Brazil.pdf

¹² Desemprego aumenta em 12 estados no primeiro trimestre (2020). Agência IBGE Notícias. <https://agenciadenoticias.ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/27708-desemprego-aumenta-em-12-estados-no-primeiro-trimestre>

¹³ Study conducted as part of the design of the loan by EDU (BR-L1551).

¹⁴ A retomada do espaço da mulher na computação (2019). Revista Pesquisa Fapesp.(2019) <https://revistapesquisa.fapesp.br/a-retomada-do-espaco-da-mulher-na-computacao/>

¹⁵ Announcement page: <https://convocatorias.iadb.org/en/techbootcamp/home>.

II. The Innovation Proposal

A. Project Description

- 2.1. The objective of the project is to allow more vulnerable women throughout Brazil, especially black and transgender women, to have access to training and job opportunities as programmers, contributing to a more diverse tech sector and to these women going from no income to positive income. To achieve this, the project will pilot a high-impact online coding bootcamp modality and will develop an online hiring platform for potential employers which is expected to improve the ability of the organization to generate revenue and become self-sustainable over time.
- 2.2. Reprograma is one of the most important and successful coding bootcamps for vulnerable women in Brazil. Although there are coding bootcamps for women such as Laboratoria and PrograMaria, Reprograma is the only completely free 18-week program and the only one targeting black and transgender women. To date, 533 women have graduated from the face-to-face programs, with a completion rate of 95%, employment rate of 84% in three months post-graduation and an average monthly starting salary of R\$ 4,900. Its model is intense, utilizes a rapid-skills training methodology and the curricula is constantly being updated based on market demand and technology company feedback. It is one of the few, if not the only, to offer a back-end bootcamp, typically more demanded and better paid than the front-end specialization. More importantly, Reprograma offers a holistic approach customized to the reality and needs of targeted beneficiaries, working also to develop their soft skills and connecting them to employers so that they can be placed in jobs. It is this focus on further developing their soft skills (communication, problem solving, collaboration and creativity) that Reprograma's partner companies' value tremendously.
- 2.3. The project will also be innovative by implementing a fully online hiring platform that brings together companies and women coders. To date, companies have been the main sponsors of the training, paying for the training of the women upfront and through hiring fees, and committing to hire a portion or all of the graduated women. This pilot seeks to understand companies' willingness to carry out the entire hiring process online —scouting-selection-interview-job proposal-contract signing-hiring—and get a sense if and how much they are willing to use the platform and pay for the latter. The online platform will also allow for a more efficient management of Reprograma's operations including data collection, analysis and impact indicators.
- 2.4. This solution will allow Reprograma to scale its program by reaching a higher number of vulnerable women in Brazil than they have been able to do with their in-classroom bootcamps, and to consolidate its financial sustainability through the development and consolidation of the hiring platform. It will help validate whether it is possible to reach, engage and teach coding to vulnerable women virtually, giving them access to a large online support network and understand whether this will enable them to get a job in technology. This network will connect the beneficiaries to other women in the industry who have technical know-how and can also act as a safe space for interaction.

- 2.5. **Beneficiaries.** Reprograma focuses on unemployed women with a maximum average household income equivalent to two to three minimum wages (about 387 to 581 USD).¹⁶ The targeted population generally has no previous programming knowledge and has always had an interest to learn how to code, not having the resources to afford a similar course. Reprograma's latest cohorts focus on at least 50% black women beneficiaries, population mostly forgotten by many coding schools. In its efforts to further diversify the IT sector, Reprograma also focuses on transgender women; in Brazil, they are a highly vulnerable population with a life expectancy of 35 years old. Ninety percent of the transgender population's main income source in this country is prostitution.¹⁷ This is what makes Reprograma innovative and differentiates it from all other educational programs, for or non-profit.
- 2.6. On average beneficiaries are 28 years old, with the youngest historically being 16 and the eldest being 55. They need to be high school graduates. Many of them are mothers who have been out of the job market for over ten years and want to "reinvent" themselves. The program offers a safe and engaging learning environment for vulnerable women, and because of Brazil's tech market size, it is well positioned to scale and maximize impact through an online learning modality. Reprograma's key value is sorority: women helping women. Its founders, teachers, mentors, and students are all women working together to help transform lives. Since the first day of classes for every cohort, students are encouraged to participate and ask questions with no fear – Reprograma strives in the fact that it is a place where one can speak out and be heard, a place where students (many from challenging and even unsafe situations) feel protected and safe. The alumnae mention that in addition to getting an education from the program, they leave gaining a sense of being part of something larger: a community of strong and empowered women who want to work to continue to change other women's lives.

B. Components

Component 1: Re-adapt and implement online coding bootcamp

- 2.7. The objective of this component is to design, readapt and implement Reprograma's online training modality. The online course will be 18 weeks, to better prepare students technically and with soft skills as to ensure good employability outcomes. It will include the selection of participants to benefit from the project as well as the key partner companies that will contribute towards the training program as well as hiring beneficiaries once they graduate.
- 2.8. In total, Reprograma will implement ten bootcamps. Two bootcamps will be implemented during the first six months of the project, with lessons learned incorporated to future bootcamps. Key Performance Indicators (KPIs) will be then adapted for the remaining eight courses to be implemented during the next 18 months of the life of the project (24 months in total). These ten bootcamps will help validate the hypothesis of the pilot and understand the real impact and cost of this modality.

¹⁶ For the project, all the values in USD were calculated according to the July 18th, 2020 rate of R\$ 5.39

¹⁷ Emprego formal ainda é exceção entre pessoas trans (2020). Folha de São Paulo.
<https://www1.folha.uol.com.br/mercado/2020/01/emprego-formal-ainda-e-excecao-entre-pessoas-trans.shtml>

- 2.9. The selection process for each bootcamp will entail six workshops with 40 participants each, totaling 240 per bootcamp (240 participants for 10 bootcamps for a total of 2,400). Each round of workshops will include an introductory front or back-end program. From those workshops, 40 finalists will be selected for participation in a given bootcamp. The one-day front-end workshop involves an introductory course to programming where participants learn HTML, CSS and build and publish their own page. For the back-end one-day workshop, participants will learn JavaScript and logic.
- 2.10. The application process to participate in the one-day workshop entails filling out an online general form. Candidates are asked to send a one-minute video briefly introducing themselves and explaining why they should be selected. Reprograma looks for women with no previous programming knowledge who want to learn how to code but haven't had the means to afford a programming course; women who show interest and aptitude in course content and a growth mindset; and women who show basic soft-skills that will contribute to employability. The four criteria used for selection are: (i) locality – what city the candidate lives in; (ii) race and gender identity; (iii) general profile information gathered through the registration form, and; (iv) technical aptitude. The first two categories have double the weight than the last two, i.e. candidates who come from the North and Northeast Brazil, and who declare themselves non-white black or any other ethnicity, will receive double the score than the other candidates.
- 2.11. The applicant evaluation and entire selection process today is done manually, giving space to inefficiency. As part of this project, the platform to be developed or adapted is expected to have functionalities that will allow Reprograma to evaluate applicant and student data more effectively. Moreover, as part of this project personality strength tests will be included to help both at the student selection stage as well as the placement stage, finding the best fits for both companies and graduates.
- 2.12. Each online bootcamp will last 18 weeks and have a total number of 40 students. The content will include the most demanded coding languages for a front and back-end developer, such as UX design, CSS, Git/GitHub, and the structure will entail technical mentorship via chat twice a week, live class once a week, revision class once a week, and the submission of exercises on a weekly basis.
- 2.13. Effort will specifically be made to ensure that the number of women reached, who fit the targeted population criteria, is maximized. Reprograma is already working with several communities, but in order to expand the scope throughout Brazil a mapping will be necessary. As part of this project Reprograma will sign eight new partnerships with relevant tech communities to support outreach. Some pre-identified initiatives focused on black women in tech include: AfroPython, PretaLab, Rede de Ciberativistas Negras, Pretas Hackers, Criadoras Negras RS, Minasprogramam, Black Rocks, InfoPreta, Preta Nerd, Coletivo Nuvem Negra. For the inclusion of transgender women in tech there are far less communities, but some identified as LGBTI+ such as Tech and Educatransforma. Most of these initiatives have a national outreach, with strong social networks, which will be crucial to bringing participants from across Brazil. A Community Manager will be hired, and outreach will be done mainly through social networks and online tools. A Public Relations company will also be hired to advise on relevant channels for Reprograma to promote on effectively targeting beneficiaries as well as interested companies.

- 2.14. The activities to be financed will include: (i) mapping of women in tech and other relevant communities and engaging with them to expand Reprograma's outreach capacity; (ii) project specific communications strategy developed and website updated to more effectively reach the targeted population; (iii) revision and adaptation of participant selection methodology; (iv) re-design of online bootcamp and implementation of two pilot online bootcamps; (v) revision of feedback from participants (students and instructors) and partner companies, lessons learned and adjustments done to the model (technical content, structure, etc.); and (vi) implementation of the remaining eight bootcamps.
- 2.15. Expected outputs include: (i) 10 successfully implemented online bootcamps; (ii) re-adaptation of selection process to incorporate more inclusive criteria such as black, and trans women; (iii) online course adaption (content, structure, and duration); (iv) 30% of Reprograma's instructors are alumnae; (v) 30% of Reprograma's instructors are black or trans alumnae; (vi) 8 new partnerships with relevant tech communities to support outreach; (vii) 2,400 women participate in online selection process; (viii) 55% of participants are black women; (ix) 5% of participants are trans women; (x) 100% of participants are low-income.

Component 2: Hiring platform developed allowing companies to access a continuous pipeline of talent

- 2.16. The objective of this component is to develop a platform that will cater to a two-fold need: (i) allow Reprograma to manage their entire operations from beneficiary selection to placement more effectively and cohesively, and (ii) allow companies to hire fully online a diverse pool of women graduates. Currently, all of the latter steps are done manually, increasing the possibility of error and promoting an inefficient use of resources. Reprograma will explore partnering with IDB Lab's local partners and other external partners who have already developed similar platforms (e.g. Cubo For Devs, Gama Academy, among others) to evaluate the possibility of building from their technology instead of prototyping from scratch. In addition, if it is possible, Reprograma will opt for elaborating the platform as open source. On the other side, companies in Brazil, are starting to pledge to increase diversity, especially women in their teams. An example is XP Investimentos, one of the largest investment companies in Brazil. In July 2020, it announced a goal of having at least 50% of women in its total staff by 2025. One of its first concrete actions was to sponsor a Reprograma bootcamp in the second semester of 2020.¹⁸ This is an opportunity for Reprograma to partner with companies and support the achievement of these commitments, and to include black and transgender as part of the pledges. Reprograma will also hire a Selection and Job placement Specialist to ensure the effective engagement with companies and hiring of graduates.
- 2.17. The platform will allow Reprograma to manage all student-related data, where companies interested in hiring their graduates will be able to access it at a cost. The platform will allow companies paid access to: (i) review graduates' profile and portfolios; (ii) select the candidates they are interested in meeting; (iii) schedule online interviews; (iv) review and digitally sign all legal documentation regarding agreements with Reprograma; and (v)

¹⁸ XP assume meta de ter ao menos 50% de mulheres entre todos os colaboradores. (2020) Valor Investe <https://valorinveste.globo.com/mercados/renda-variavel/empresas/noticia/2020/07/17/xp-assume-meta-de-ter-ao-menos-50percent-de-mulheres-entre-todos-os-colaboradores.ghtml>

track and ensure all relevant placement fees are paid. The business model of the hiring platform will also be designed and tested. In order to guarantee the effective and timely delivery of the project, Reprograma will have: (i) a Project Manager responsible for the overall activities of the project; (ii) a Recruitment and Placement Specialist responsible for partnering up with companies as to ensure the hiring of the bootcamp graduates; and (iii) a Community Manager responsible for beneficiary outreach mainly through social networks and online tools.

- 2.18. The activities to be financed include: (i) mapping of similar platforms and selection of one that can be adapted for Reprograma' s needs; (ii) creation of a Platform Committee supported by partner company representatives to provide feedback on platform usability; and (iii) developing and testing the platform prototype.
- 2.19. The expected outputs are: (i) one fully online platform adapted/developed; (ii) 200 companies paying membership fees for the platform to access graduate profiles; (iii) 60 companies hiring from the online platform; (iv) 95% of total operating costs covered by company fees.

Component 3: Strengthening of data systems to support scale-up

- 2.20. The objective of this component is to strengthen Reprograma' s impact and business model, and test whether it can become scalable, ensuring Reprograma' s financial sustainability and impact growth. It is the first time that Reprograma will test the employability of graduates that have been fully trained in the online course. Through this component Reprograma will seek to: (i) systematize and improve the knowledge management of Reprograma especially the beneficiaries data and (ii) understand the model's cost effectiveness and if the level of knowledge and preparation of graduates is satisfactory for their partners and other companies (through Net Promoter Score, % of graduates hired, etc.).
- 2.21. The program will cover the training costs of beneficiaries through partnerships with companies and other sponsors, as Reprograma has been doing to date. With an expected 400 women participating in 10 cohorts, the cost to graduate each participant at current Program cost will be approximately USD 1,128. Additionally, this project seeks to understand how much companies are willing to pay to access the platform and hire Reprograma' s graduates, and the extent to which this model can support scale-up within and outside of Brazil.
- 2.22. The activities to be financed include: (i) organization of up-to-date beneficiaries' information and establishment of information flow and update; (ii) engaging with partner companies and select three to five who are to contribute towards the project both with know-how, financially and by hiring an agreed percentage of graduates; (iii) developing a report with indicators that will allow to understand the value that companies allocate to: a) the platform developed and how it helps them with their hiring process and their diversity pledges; and b) the preparation and skills that graduates obtain from the course; and (iv) a final event with key private and public sector partners to disseminate results.
- 2.23. The expected outputs are: (i) mapping of data system needs produced; (ii) data system to support scale-up plans developed; (iii) one external evaluation of project results completed; and (iv) one scale-up strategy produced.

C. Project Results, Measurement, Monitoring and Evaluation

- 2.24. The main outcomes of the program will be: (i) 70% of graduates get a job in a tech company and go from no income to positive income within 6 months post-program completion (at least 38,5% of hired graduates will be black and at least 3,5% transgender, which follows the proportion of 55% black and 5% transgender women participating in the bootcamps) ; (ii) 340 women graduate from the 18 weeks online program (85%); (iii) R\$1,950 as the average monthly starting salary of hired graduates; (iv) 5% average increase in salary, 12 months in the job; (v) 224 students hired through the online platform; (vi) three signed agreements with private companies to support scale up.
- 2.25. The main tool to track and measure project outcomes will be the online management platform to be developed as part of this project (see Component 2). Reprograma will tap into the experience and what has already been developed by local IDB Lab partners¹⁹, and in this regard, will try to piggy-back on already developed instruments regarding both aspects of the platform: online management and hiring. The latter will be adapted to Reprograma' s internal needs as well as to hiring partner companies' feedback and recruiting needs. Reprograma will continue to use Typeform-based surveys to collect information from participants regarding course content, program structure, professors' capabilities, among other key areas that will help improve service delivered.
- 2.26. To guarantee expected results and impacts, an evaluation will be carried out to assess the following issues: (i) assessment of the online model; (ii) how much companies are willing to pay to access the hiring platform; (iii) the cost-effectiveness of the platform; and (iv) if and how this model can support Reprograma' s scale-up within and outside Brazil.

III. Alignment with IDB Group, Scalability, and Risks

A. Alignment with IDB Group

- 3.1. This project is aligned with the Update to the Institutional Strategy, with the Development Challenges of Social Inclusion and Equality as the project provides training for vulnerable populations; Productivity and Innovation as the project increases the supply of skilled workers. The project is also aligned with cross-cutting themes of Gender Equality and Diversity as all beneficiaries will be women, and many of them will come from diverse backgrounds, either afro-descendants or LGBT+. Regarding IDB Lab Strategic objectives, the project is aligned with the goal of Improving living conditions for households.
- 3.2. **Knowledge Economy Strategy of the IDB Lab:** The program will prepare black and transgender women for the future of work to address the high demand for a better prepared workforce for the knowledge economy and the gender gap in the IT sector. It is

¹⁹ Reprograma will tap into experiences such as Cubo for Devs and other non IDB supported initiatives such as Gama Academy and Talent Academy.

aligned with the Skills for the Future project portfolio of the IDB Lab Knowledge Economy, as it will reduce the gender and diversity gap in Brazil's tech sector by including black and transgender women. The project is also strategic as online bootcamps fill a strong need for access to computer science-related education, as women who do not live in a large city center with a bootcamp nearby are unable to attend a coding bootcamp. Furthermore, the pandemic due to the Sars-Cov-2 virus has made the implementation of both online education and work possibilities a more pressing need that requires swift solutions. Reprograma is one of the pioneers in this online modality, it offers a safe and engaging learning environment for vulnerable women, and because of Brazil's tech market size it is well positioned to test this model with impact at scale.

- 3.3. **IDB Social Sector:** This operation aligns with the Future of Work and 21st Century Skills initiatives in that: 1) explore strategies to transition unemployed women to work that provides better earnings; and 2) examines the use of technologies to deploy education/training and strengthen the provision of 21st century skills. It will complement LMK Pilot for modular TVET in São Paulo's digital industries (BR-T1460) and a project currently under preparation by EDU (BR-L1551), which will include actions to reduce the gender gap in the technology sector in the state of Parana.
- 3.4. **CTI's Economic and Sector Work program:** This proposal will also enhance the collaboration between the IDB Lab and CTI around skills and digital bootcamps that started with the "Bootcamps for Tech Fans" challenge in 2019. Since then the IDB Lab and CTI are working closely, together with other departments of the Bank, sharing the participants database, and launching an online survey to participating bootcamps to better map programs and results in LAC. Also, CTI is including a case study of Reprograma as part of CTI's Economic and Sector Work program (RG-E1643) Digital Boot Camps: How Do They Function, as well as DEV.F and Laboratoria. Currently the IDB Lab has five operations promoting digital skills and closing the skills gap in the tech sector in LAC²⁰, and two more are in the pipeline, including Reprograma.
- 3.5. **Country Strategy Alignment:** This program aligns with the Country Strategy with Brazil 2019-2022 ([GN-2973](#)) with the strategic objective of raising the efficiency of the public job placement system. As part of this objective, the strategy highlights that, "to improve employment conditions, the IDBG will help to promote training and learning models that increase the supply of skilled labor and facilitate entry into the workforce". More specifically, the project supports this objective by preparing vulnerable populations for the job market by developing technical education and ongoing support for inclusion and employment, ultimately increasing the supply of skilled workers with programming knowledge.
- 3.6. **Sustainable Development Goals (SDGs):** The project is expected to contribute to the following SDGs: *#1 No Poverty* by supporting beneficiaries to come out of poverty (target 1.2); *#5 Gender Equality* by helping women gain access to economic resources (target 5.A) and by enhancing the use of enabling technology, in particular information and communications technology, to promote the empowerment of women (target 5.B); *#8 Decent Work and Economic Growth* by supporting employment for women (target 8.5) and by achieving higher levels of productivity through a larger supply of skilled workers

²⁰ These are: Laboratoria (RG-T3510), Programa Valentina (GU-G1010), Jóvenes a Programar (UR-T1168), DEV.F, (RG-T3590) approved in Feb. 2020, and Fundación Kod1go (ES-T1330), approved in August 2020.

(target 8.2); *#10 Reduced Inequality* by supporting low-income individuals (target 10.1) and by promoting the inclusion of excluded populations (target 10.2).

B. Scalability

- 3.7. Since 2016, Reprograma has implemented thirteen face to face and five pilot online bootcamps, graduating a total of 533 women developers with a total completion rate of 95%, an employment rate of 84% in six months post-graduation and an average monthly starting salary of R\$ 4,900. Of the 533 graduates, 1% are trans females and 42% of the students declare themselves non-white and 34% blacks. These numbers show the improvement regarding representation since in the first bootcamp, only 5% of the women were black, and in the last class in person, this percentage rose to 71%. Regarding transgender women, there were bootcamps where 4% of the students were trans.
- 3.8. The online modality started in 2019 as a pilot training program without the employability outcome, and as a way to expand reach and impact at a lower cost. This project will enable to run ten full-time online bootcamps reaching 400 female developers and a total of 2,160 women who will participate in one-day workshops as part of the selection process in just two years. It will also be essential to validate and consolidate the online modality. The potential market for Reprograma is large, since today there are 12.4 million unemployed Brazilians²¹, where black people are 43% more likely to be unemployed, and women's unemployment is at 14.5% while male unemployment is at 10.4%²². So with an IT and start up sectors growing very rapidly, even if only a small percentage of unemployed and black women were to be interested in the IT sector, there is a significant room for growth and scale. Once this new modality has been validated, Reprograma will be able to scale operations by having the capacity, tools and systems to implement simultaneous online bootcamps within and potentially even outside of Brazil (discussing possibility of implementing one or two pilots in Mexico, Peru and Colombia). As part of Component 3, at the end of the Project a Scale-up Report with plans on scale will be developed based on lessons from the Project.
- 3.9. An essential component of this project is to include the employability outcomes of the training, where an online hiring platform for potential employers will be developed. The latter will improve the ability of Reprograma to generate revenue and become self-sustainable over time, allowing Reprograma to scale its program, reach a higher number of vulnerable women in Brazil, and to consolidate its financial sustainability.
- 3.10. The project has already secured the support of Accenture, Ifood, Santander and Nubank and is in advanced talks with Facebook and XP Investimentos. This includes financial support, knowledge and technical assistance and commitment to hiring Project graduates.

²¹ Número de desempregados diante da pandemia tem alta de 26% em sete semanas, diz IBGE. (2020) IBGE <https://g1.globo.com/economia/noticia/2020/07/17/desemprego-diante-da-pandemia-volta-a-ter-alta-apos-leve-queda-aponta-ibge.ghtml>

²² Negros são maioria dos desempregados no Brasil; mulheres seguem recebendo menores salários. (2020) Notícia Preta <https://noticiapreta.com.br/negros-sao-maioria-dos-desempregados-no-brasil-mulheres-seguem-recebendo-menores-salarios/>

C. Project and Institutional Risks

- 3.11. The main risks associated with the program include: (i) Bootcamp participants drop out before completion due to lack of interest or because of a job offer; (ii) companies are not willing to use the platform to hire the project's graduates or pay respective hiring fees and end up hiring through other means; (iii) the pandemic might have a negative impact on the employability prospects and implementation in general; (iv) since it will be an online course, the project might find it challenging in guaranteeing that the most vulnerable women have access to internet and (v) course content and duration does not allow students to have the preparation level that recruiting companies are looking for.
- 3.12. To mitigate for the above mentioned risks will be the following: (i) a significant effort will be made in selection and retention of women; during selection careful attention will be paid to identify candidates that have a profile that, based on previous experience, shows she is likely to successfully complete the program; a solid support network will be created made out of instructors, mentors, companies to help students throughout the course and an approachable academic counsellor will be hired to be in constant touch with participants and support them through any challenge (technical or personal) that they may be experiencing. (ii) It will be ensured that a secure access to the platform is developed with clear and legally backed guidelines on how to hire students. Additionally, Reprograma will work closely with beneficiaries so that they understand how this new source of revenue works, and for them to play a role in safeguarding it, and reporting to Reprograma if they are approached by companies outside the platform. (iii) An intensive search for companies who have had their business positively impacted by the pandemic (such as delivery services, telemedicine, etc.) will be made as to ensure the hiring of the women that completed the training. To safeguard project implementation the hiring of a project manager has already been secured six months prior to the start of the project. The objective is to secure a careful planning of the project and the establishment of key partnerships as well as the mapping out of procurements. (iv) Where feasible, mostly state capitals or regional hubs, Reprograma will look at the possibility of partnering with local institutions in regions where the most vulnerable beneficiaries live to assess the possibility of supporting their access to good quality internet. For women who live in smaller towns, and do not have access to local institutions, the project has allocated resources to pay for internet access for up to 5% of each cohort. (v) The Project Manager will also be in regular communication with the private sector, understanding what programming language and specific skills are being demanded to ensure that the course content meets this demand.

IV. Instrument and Budget Proposal

- 4.1. The project has a total cost of USD 745,000 of which USD 300,000 (40%) will be a non-reimbursable technical cooperation provided by the IDB Lab, and USD 445,000 (60%) by the counterpart. Of the latter, 52% or USD 385,844 will be provided in cash contributions by Reprograma through partner companies and remaining 8% or USD 59,156 will be in-kind contributions also from Reprograma and partner companies.
- 4.2. The retroactive recognition of Counterpart funds is applicable under this operation. Applicable date: April 27, 2020 (date on which project received eligibility for design). The

amount to be recognized is up to US\$21,000 for the Project Manager hired for this project, activities related to the re-adaptation and implementation of pilot online coding bootcamps, and data consolidation of previous cohorts (see paragraph 5.3).

	IDB Lab (USD)	Counterpart (USD)	Total
Project Components			
Component 1: Re-adapt and implement online coding bootcamp	172,741	102,467	275,208
Component 2: Hiring platform developed allowing companies to access a continuous pipeline of talent	66,674	118,050	184,723
Component 3: Strengthening of data systems to support scale-up	8,350	75,684	84,034
Project Administration	24,609	120,241	144,850
Mid Term and Final Evaluation	15,000	10,000	25,000
Audited Financial Statements	6,641	0	6,641
Contingencies	5,986	18,558	24,544
Grand Total	300,000	445,000	745,000
% of Financing	40%	60%	100%

V. Executing Agency (EA) and Implementation Structure

A. Executing Agency(s) Description

- 5.1. Reprograma will be the Executing Agency of this project and will sign the agreement with the Bank. Reprograma is a social impact organization focused on closing the IT gender gap in Brazil and diversifying tech teams. With a proven track record with well-established companies such as Accenture, B3, Facebook, IBM, Nubank, among others, Reprograma has also received some important recognition. The most noteworthy are the 2019 MIT Inclusive Innovation Challenge Latin America Regional Finalist in the Skills Development & Opportunity Matching Category, the 2018 IBM Volunteer Excellence Award, and the youth leadership recognition by the Arymax Foundation, the philanthropic arm of the Suzano Group, in 2018. All three female founders comprise Reprograma's management team, with two Reprograma graduates and three more women comprising its staff. It is a non-profit organization that started implementing in-person coding bootcamps in 2016 to tackle the lack of diversity in startup's technology teams. In 2019, they started piloting online coding bootcamps as a way to expand outreach and impact at a lower cost. In addition to the coding bootcamps, Reprograma carries out technical events (both face-to-face and online) where all speakers are female. These include technical monthly meetups with Reprograma alumnae, Tech Talks held every November and bi-annual "Hackatonas" or Female Programming Competitions where all participants are women.
- 5.2. Reprograma has very strong partners, both from the private mentioned above and public sector (Adesampa – Prefeitura de Sao Paulo). They are mainly funded through hiring fees equivalent to one salary offered to the alumni or through upfront financing of entire

cohorts to then hire at no cost. Company fees covered 82% of its operational costs, with a small percentage covered by awards, grants, and donations.

B. Implementation Structure and Mechanism

- 5.3. Reprograma will establish an executing team and the necessary structure to execute project activities and manage project resources effectively and efficiently. A Project Manager has been hired in July 2020 to lead project design and implementation. The project manager will also be responsible for providing progress reports on project performance. Details on the structure of the execution unit and reporting requirements are in Annex V in the project technical files.

A Platform Committee, composed of partner company representatives, will be created to allow an effective channel for providing inputs and feedback on the hiring platform usability and the skill sets required for the position partners are looking to hire.

VI. Compliance with Milestones and Special Fiduciary Arrangements

- 6.1. **Disbursement by Results, Fiduciary Arrangements.** The Executing Agency will adhere to the standard MIF disbursement by results, Bank procurement policy²³ and financial management²⁴ arrangements as specified in Annex V and VI.

VII. Information Disclosure and Intellectual Property

- 7.1. **Information Disclosure.** This project is classified as public for the purpose of the Bank's information disclosure policy.
- 7.2. **Intellectual Property.** The Executing Agency shall own the intellectual property rights to all works produced or results obtained under the Project. The Executing Agency hereby grants the Bank a non-exclusive and royalty-free license for non-commercial purposes over the intellectual property rights to knowledge products and materials produced with Contribution funds, including regarding learnings, outcomes, methodologies and results obtained under the Project, so that the Bank may use, copy, distribute, reproduce, publicly display and perform any such products or materials developed under the Project.
- 7.3. The Executing Agency shall ensure that all contracts it enters into with consultants under the Project include an express assignment to it of any such intellectual property rights, including copyright. The Executing Agency shall release and indemnify the Bank, its staff and consultants from any actions which could be initiated against them in the exercise of the rights licensed to the Bank.

²³ Link to the Policy: [Procurement of Works and Goods Policy](#)

²⁴ Link to the document [Operational Guidelines for Management of Milestones and Financial Supervision for MIF and SEP Technical Cooperation Projects](#)

- 7.4. The Bank may disseminate, reproduce, and publish any Project-related information and include with such information the name and logo of the Executing Agency.