Linking Gender Equality (Goal 5) with Decent Work and Economic Growth opportunities (Goal 8) through the Development of Infrastructure (Goal 9) in LAC. Pilot experiences in Bolivia, Paraguay and Nicaragua.

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1. Introduction

Achieving gender equality, a pillar for development in Latin America and the Caribbean (LAC), remains a great challenge in the region. Mainstreaming gender across all sectors of the economy is essential to ensure inclusive and sustainable growth. In the transport sector, which includes infrastructure and related services, gender equality has been addressed from two angles: women as users of transport systems and women as part of the sector’s labor force. This document studies gender equality from the second angle by analyzing female representation and participation along the transport sector value chain. It presents three pilots in which women were trained in the operation of heavy machinery, a means of increasing opportunities for higher salaried positions, and the lessons drawn from these experiences. The pilots, which are linked to road rehabilitation projects in three countries, illustrate potential synergies between the Sustainable Development Goals (SDG) of Gender Equality1, Decent Work2 and Infrastructure3.

2. Mainstreaming gender in the transport sector. Opportunities to promote decent work for all

2.1. Infrastructure investment gap in LAC

Investment in infrastructure drives economic growth and development. In LAC, the annual amount of investments in the sector averaged US$ 130 billion between 2008 and 20154. While this amount falls short of the annual infrastructure spending required to alleviate growth constraints, which is estimated at US$ 225-287 billion (Bhattacharya 2012), - it represents a significant opportunity for creating jobs and sharing economic prosperity.

Unfortunately, few women benefit from such an opportunity. In LAC countries, women make up only 14% of the workforce in the transport sector and 3% in the construction sector.

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1 SDG#5: Achieve gender equality and empower all women and girls
2 SDG#8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
3 SDG#9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
4 Derived from Infralatam Database (Infralatam 2017)
Moreover, low female representation within the construction sector is associated with high wage gaps between women and men\textsuperscript{5}.

2.2. The gender gap in the transport sector

Participation of women in the labor market has significantly increased in developing countries. In Latin America, more than 50\% of women of working age are either employed or seeking employment (IMF 2016). Indicators measuring the gender gap, such as the Global Gender Gap (GGG) Index (WEF 2017), show that women in LAC are reaching higher rates of participation compared to men with respect to aggregate active participation and empowerment (WEF 2017).

However, it has been argued\textsuperscript{6} that aggregate female participation indexes may not reflect gender disparities experienced in the labor conditions of different sectors of the economy. In fact, occupational segregation seems to increase among different sectors and income distribution between women and men. Further, according to multiple household surveys within LAC, women are typically employed in less sectors. Sectors with higher female participation rank among the lowest in terms of productivity and income levels. Additionally, infrastructure-related sectors are characterized by a significant gender gap when looking at income distribution. This phenomenon is illustrated in Figure 1, which analyzes data from Bolivia’s National Household Survey (ECH 2017). The graphs show how income disparities are present mainly in non-traditional sectors, where income distribution for women lags systematically behind that of men.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Income levels by Industry and Gender in Bolivia. Data source (ECH 2017)}
\end{figure}

\textsuperscript{5} Gender and labor markets in Latin America and the Caribbean (LAC): Women’s participation in the construction sector. Granada, Perez, Montes, Monje, Caldo. Transport Research Board - Under reviewing for publication

\textsuperscript{6} Ibid.
These results show significant disparities between women and men in terms of participation in the construction, transport and energy sectors and average income. Moreover, income difference between men and women increases when looking at rural population and lower levels of education attainment, illustrating that disparities persist when analyzing different aggregation levels. Therefore, the greatest potential to reduce such disparities lies in these sectors, especially for individuals who live in rural areas, have lower education, or live in poverty.

2.3. Career pathways in the construction sector

The income disparities found in the construction sector are explainable. The few women who work in the construction sector usually hold lower-paid positions, such as cleaning or traffic signaling jobs. Gender roles and stereotypes that perpetuated the belief that women are not suitable for other types of positions contribute to this situation and thus limit their professional development in this sector. The potential to professionally grow in the construction sector also varies depending on the starting position. For example, data from the US market (PayScale 2018) reveal that operators of heavy machinery tend to have greater professional prospects (see Figure 2) and higher wages compared to other positions at the worksite.

![Figure 2: Common career paths for Heavy Machinery Operator](image)
2.4. Rationale behind of three pilots on gender and operation of heavy machinery.

Following the rationale presented above, the Inter-American Development Bank’s (IDB) Transport Division led the implementation of three pilot projects in Bolivia, Paraguay, and Nicaragua. The aim of the projects was to increase women’s participation in the construction and transportation value chains and thus promote equal opportunities in these sectors from a gender perspective. While the pilots’ focus was on training women to operate heavy machinery, the programs organized other activities, including trainings and job placement to work on road tolls and maintenance, awareness and communication campaigns, institutional strengthening for gender mainstreaming, and the promotion of traineeship programs through subsidies to construction companies.

2.5. Interlinkages between Sustainable Development Goals. Relevant goals, targets and indicators to the pilot experiences

The United Nations General Assembly held in September 2015 marked a historic breakthrough. World leaders adopted a new agenda for sustainable development to be achieved by 2030. The resolution (U.N. 2015) announced 17 Sustainable Development Goals (SDGs) with 169 targets that set out a plan of action. While the goals cover multiple areas, they are designed to balance the economic, social and environmental dimensions of sustainable development. Importantly, the SDGs and their means of implementation are viewed as universal, interlinked and indivisible.

As previously shown in Figure 2, considering the low level of women’s representation in the transportation sector, training women to operate heavy machinery can contribute to Goal #5, “Achieve gender equality and empower all women and girls”, through target #5.1, “End all forms of discrimination against all women and girls everywhere,” and 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”. For example, by imagining a recently hired woman efficiently operating a backhoe to lengthen a section of an all-weather road in rural Jinotega, Nicaragua, we can visualize several of SDGs materializing at once.

As the pilots were part of a road infrastructure project, there is a clear linkage with Goal #9, “Industry, Innovation, and Infrastructure”. However, the specific results of the pilots do not contribute to this goal, but rather to Goal #8, “Decent work and economic growth.” For instance, in Bolivia, a woman working as a road toll collector would gain a 39% increase in salary after receiving training to operate heavy machinery. The results from the trainings could be measured through SDG indicator #8.5.1, “Average hourly earnings of female and male employees, by occupation, age and persons with disabilities”, which in turn is linked to target #8.5, “By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value”. Figure 3 summarizes goals, associated targets and indicators relevant to the pilots.

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According to the assessment conducted in Bolivia, the average monthly salary of a heavy machinery operator (US$362) is 39% higher compared with the average monthly salary of road toll (US$260).
### SDGs, Targets and Indicators relevant to the pilots

#### #5.1
End all forms of discrimination against all women and girls everywhere

#### #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

#### #5.5.2
Proportion of women in managerial positions

#### #5.5.1
Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex

#### #5.5.1.1
Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex

#### #5.c
Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

#### #5.c.1
Proportion of countries with systems to track and make public allocations for gender equality and women’s empowerment

#### #8.2
Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

#### #8.2.1
Annual growth rate of real GDP per employed person

#### #8.3
Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

#### #8.3.1
Proportion of informal employment in non-agriculture employment, by sex

#### #8.5
By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

#### #8.5.1
Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

#### #8.5.1.1
Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

#### #9.1
Develop quality, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

#### #9.1.1
Proportion of the rural population who live within 2 km of an all-season road

### Figure 3: SDG’s, Targets and Indicator relevant to the pilots
However, the pilots were not monitored through the SDGs indicators. Instead, they were evaluated by measuring the number of women receiving training. In the case of Bolivia, the pilot used three different indicators: 1) number of women trained for toll collection and weigh operations, 2) number of female partners of microenterprises receiving specialized training, and 3) number of women trained to operate heavy machinery. In Paraguay, the pilot’s indicator was the number of women trained by the program to attain non-traditional jobs in the road sector. In Nicaragua, the pilot indicator was slightly more ambitious; it measured the number of women operating heavy machinery on sections of roads targeted by the program.

3. Gender pilots in transport infrastructure

3.1. Summary and Methodology

The pilots aim to improve women’s employability in transport infrastructure projects, a sector in which predominantly males participate. The pilot’s core activities focus on the operation of heavy machinery while considering the specific needs of each geographical context. The long-term vision of these initiatives is to generate transformative models within the sector to achieve equal opportunities for women and men.

The methodology used for the design of the three pilots was characterized by:

1) Initial Assessment: Assessing the gender situation and sectoral value chain for each country identifying market demand for qualified personnel.
2) Linkage to IDB operations: Linking each pilot to IDB’s transport loan operations to gain support from government counterparts (the corresponding Ministries of Transport and Public Works) while facilitating local acceptance during implementation.

3) Women-centered pilot design through a Gender Action Plan (GAP): Designing the pilots considering the specific needs of women, that is, the context in which they live and the skills they need to develop to increase their employability in the sector.

4) Context-specific implementation: Adapting activities to the local context and the specific sectoral needs during the design and implementation of the pilots (e.g. supply and demand, sectoral priorities, culture).

3.2. Country Assessments on Gender Equality

3.2.1. Legal framework analysis.

From a national regulatory standpoint, the countries where the three pilots have been implemented have made significant progress in advancing gender equality, which is reflected in the higher employment rates of women in the public sector. However, according to the assessment summarized in Table 1, the impact of regulations in the construction sector value chain varies for each country.

- **Bolivia**: The Pluri-national State of Bolivia has made significant progress in its regulatory frameworks to achieve gender equality. Its National Plan for Equal Opportunities (2008), the Comprehensive Law to Guarantee Women a Life Free of Violence (2013) and the Patriotic Agenda 2025 all emphasize that women and men should have equal access to work spaces, the importance employment standards, and equal pay for women and men.

- **Paraguay**: With the adoption of the new Constitution in 1992, Paraguay has been incorporating various measures for gender equality, such as the creation of the Ministry of Women and the implementation of the Third National Plan for Equal Opportunities between Women and Men (2008-2017).

- **Nicaragua**: The laws and actions decreed by the Government of Nicaragua related to gender equality, such as the ratification of the Convention on the Elimination of All Forms of Discrimination against Women (1981), the promulgation of the Law on Equality of Rights and Opportunities (2008) and the creation of the Ministry of Women (2012), have reduced gender gaps in political participation, health and education. In fact, according to the World Economic Forum’s report on Global Gender Gap Index Nicaragua ranked first in LAC and sixth worldwide (WEF 2017).

3.2.2. Transport Value Chain Analysis.

To undertake a sector-specific assessment, a sectoral value chain analysis was conducted for each country. The analysis allowed for the characterization of every actor in the transport sector, including their respective role within the project cycle and their personnel structure disaggregated by sex. This information was required to quantify women’s participation in all
links of the sector's value chain, with a focus on the number of women in the sector and the type of work they do, and to pinpoint existing gender gaps.

The assessment showed no or low participation of women in non-traditional occupations in the construction and road maintenance sector. Similarly, the assessment confirmed cultural stereotypes and gender roles that affect women, especially in the development of work activities related to transportation and construction. Table 1 shows a summary of the assessment.

<table>
<thead>
<tr>
<th>Government Management Units</th>
<th>Bolivia</th>
<th>Paraguay</th>
<th>Nicaragua</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44% of women in the Vice Ministry of Transport</td>
<td>20% of women holding positions of administrative assistants and auxiliary services</td>
<td>High participation of women in management positions: 53% FOMAV and 56% in the MTI</td>
</tr>
<tr>
<td></td>
<td>30% of women in Bolivia's Highway Administration (ABC)</td>
<td>3% of women holding managerial positions</td>
<td>Predisposition to promote the participation of women in the operation of heavy machinery</td>
</tr>
<tr>
<td></td>
<td>37% of women on Roads of Bolivia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Firms</td>
<td>0% women in positions related heavy machinery</td>
<td>4% of women working on service-related activities</td>
<td>14% of women working on administrative, signaling and cleaning activities. Operation of heavy machinery is the activity in highest demand (46%). This activity, together with engineering represents the highest paid position</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0% of women in non-traditional jobs including, operation of heavy machinery, surveyor, masonry, welding and assembly, or vehicle maintenance</td>
<td></td>
</tr>
<tr>
<td>Other roles carried out by women within the sector:</td>
<td>35% of the people hired as weight operators and toll collectors in the 170 toll booths are women</td>
<td>14% of women working in supervision firms performing administrative, engineering and supervisory activities</td>
<td>34% women working in supervision firms (performing different roles including engineering, cleaning and administration). Little participation of women in maintenance tasks (only 4 of 50 cooperatives involve women)</td>
</tr>
<tr>
<td></td>
<td>16% of the total number of partners belonging to road maintenance micro-enterprises are women, who perform the same activities as their male colleagues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Summary of Value Chain Assessment in the Transport Sector

3.3. Linkage to IDB Operations

To ensure support from the government and facilitate their implementation, pilots were linked to IDB operations. As the governments of Bolivia, Paraguay and Nicaragua requested the IDB to prepare loan programs for road rehabilitation in 2015, the same year when the pilots were conceived, these countries were selected for pilot implementation. The fact that the programs were still at the design phase allowed for the inclusion of gender-focused activities and
negotiation with government counterparts to integrate these activities within the respective loan agreements. IDB operations are summarized on Table 2 below.

<table>
<thead>
<tr>
<th>Executing agency:</th>
<th>Road infrastructure program to support development and management of the primary road network II (BO-L1102)</th>
<th>Rural Road Improvement Program I (PR-L1084) and II (PR-L1092)</th>
<th>Road Integration Program (NI-L1092)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objetives:</td>
<td>(1) Construction upgrading, and rehabilitation of Road Infrastructure; (2) Improve integrated management of Road assets; and (3) strengthening ABC capabilities, in both regional and central offices, to improve its increasing portfolio management.</td>
<td>Provide productive areas with a better access to demand points in the Eastern Region of the country (PR-L1084) Improve connectivity in the rural areas of the Eastern Region of the country, providing productive areas with improved access to points of consumption (PR-L1092).</td>
<td>The objective is to improve the accessibility of transportation in rural areas of Nicaragua with a high incidence of poverty, facilitating the integration of productive areas and areas of consumption and the population's access to public and social services, and to contribute to poverty reduction.</td>
</tr>
<tr>
<td>Gender Activities:</td>
<td>Fostering human capital development and improve women's access to quality jobs in the sector</td>
<td>Awareness raising, communication, and capacity-building in order to promote the employment of women and to improve the quality of female employment in road construction and maintenance</td>
<td>Implementing trainings for women in the operation of heavy machinery so they can find employment in the area of influence of the project</td>
</tr>
</tbody>
</table>

**Table 2. IDB operations related to the pilots**

**3.4. Women-centered pilot design through a Gender Action Plan (GAP)**

To design pilots accounting for women’s needs, a GAP was developed based on each country assessment and the corresponding IDB Road Infrastructure Program. A common feature of the three pilots was their emphasis on increasing both the demand and supply of female labor in construction companies.

The assessments conducted in each country identified training women in non-traditional sectors as a key activity. The assessments found that: 1) there is a high demand for skilled heavy machinery operators in both the construction and transport sectors; 2) integrating women in the operation of heavy machinery generates multiple advantages for them as well
as for the construction companies; and 3) most of the interviewed women would not consider relocation as an impediment to access better paid positions.

It should be noted that the recommendations made in each assessment varied to some extent from country to country. In Nicaragua, based on the surveys from potential female candidates, trainings on the operation of heavy machinery were complemented with additional sessions to empower the beneficiaries and strengthen their confidence. As for the pilot in Bolivia, the assessment identified additional opportunities such as supporting existing road conservation micro-enterprises that included women in their workforce and carrying out trainings for women employed in road toll stations. In Paraguay, considerable cultural barriers were identified that limited the inclusion of women in the sector. This motivated the inclusion of additional communication and awareness campaigns in the project and the inclusion of gender-specific contractual clauses in the bidding documents for construction works financed by the IDB. Table 3 summarizes the main activities the GAP developed for each country.

<table>
<thead>
<tr>
<th>GAP Bolivia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Road maintenance micro-enterprises. Development of the technical capacities of those companies that with women in their personnel</td>
</tr>
<tr>
<td>2) Operation of road tolls. Comprehensive improvement of collection processes</td>
</tr>
<tr>
<td>3) Operation of heavy machinery. With the support of a technical cooperation (TC), development of a training program in the operation of heavy machinery and on-site practice.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GAP Paraguay</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Communication and awareness campaigns;</td>
</tr>
<tr>
<td>2) Training programs for women including both, theory and practice, on non-traditional job in the construction sector and road maintenance</td>
</tr>
<tr>
<td>3) Subsidized traineeships five month long</td>
</tr>
<tr>
<td>4) Institutional strengthening of Ministry of Publics Works and Communications (MOPC) on gender issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GAP Nicaragua</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Training on operation of heavy machinery</td>
</tr>
<tr>
<td>2) Traineeships with contractors including a six-month stay for each woman operator trained with construction firm that facilitated the corresponding training.</td>
</tr>
</tbody>
</table>

Table 3. Gender Action Plan. Main components

3.5. Context-specific implementation and results

A common feature of the training programs was their involvement of national entities and ongoing employment programs. In the case of Bolivia, the training program was linked to the Pluri-national Employment Program of the Ministry of Labor, Employment and Social Welfare (MTEPS). This allowed for a close connection between labor supply and demand within the construction sector and related services. In Paraguay, the pilot was conducted through the

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8 Heavy machinery suppliers acknowledged that women are more responsible, more detail-oriented and could perform better quality work. For these reasons, they expressed their intention to hire women, as long as they were trained.
National Service of Professional Promotion (SNPP). The Project Executing Unit (UEP) and
the General Social and Environmental Directorate (DGSA) of the Ministry of Public Works and
Communication (MOPC) carried out pilot supervision. In the case of Nicaragua, the
Environmental Management Unit (UGA) of the Ministry of Transport and Infrastructure defined
the technical specifications of the training and the duration of traineeships in coordination with
the IDB, which were later included in the bidding documents of the construction projects.

To improve women’s employability in the sector, based on the assessments conducted, the
pilots adopted quality standards for the trainings. The way to ensure this was twofold: linking
the trainings to both practice and theory tests which, if passed, would result in certification
recognized by the industry; and designating a supervisory body. In Bolivia, the certificate was
given by the SEGIP, the Government’s General Service of Personal Identification and Driving
Permits, and the trainings were monitored by TECSUP, a Peruvian firm with experience in
heavy machinery trainings. As for the pilot in Paraguay, the certification was submitted by the
firms supervising public works and the MOPC monitored the trainings. Finally, in Nicaragua,
the construction firm, which also trained women to obtain the required driving permits for
heavy machinery, was responsible for creating certification.

In total, 43 women were trained through the pilots. In Paraguay, 74% of trained women
received a formal offer for a non-traditional position. In Nicaragua, where women will finalize
their traineeships in December 2018, the pilot has progressed into a second phase through
which 108 additional women will start trainings in August 2018. Pilots results are summarized
in Table 4.

<table>
<thead>
<tr>
<th></th>
<th>Bolivia</th>
<th>Paraguay</th>
<th>Nicaragua</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of trainings</td>
<td>80 hours$^{9}$</td>
<td>40 hours</td>
<td>100 hours$^{10}$</td>
</tr>
<tr>
<td>Number of women trained</td>
<td>7$^{11}$</td>
<td>24$^{12}$</td>
<td>12</td>
</tr>
<tr>
<td>Traineeship period</td>
<td>n/a</td>
<td>October 2017 - March 2018</td>
<td>June 2018 - December 2018</td>
</tr>
<tr>
<td>Traineeship duration</td>
<td>n/a</td>
<td>5 months</td>
<td>6 months (16 hours/week)</td>
</tr>
<tr>
<td>Additional accomplishments</td>
<td>n/a</td>
<td>Gender perspective incorporated in tender documents$^{13}$</td>
<td>Gender perspective incorporated in tender documents</td>
</tr>
</tbody>
</table>

Table 4. Results summary from the pilots

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$^{9}$ Trainings were conducted over two weeks
$^{10}$ Trainings were conducted over twelve days
$^{11}$ The program was open to male and female. A total of 24 people was certified
$^{12}$ 14 of the 24 women were trained as operators. The rest were training in non-traditional positions (laboratory tests, topography assistant, security, etc). As of July 2018, 19 women already finished the traineeships and 74% of them received a formal offer.
$^{13}$ Each contractor has to deliver 12 trainings with the respective certifications. Each training will have a minimum of 40 hours of duration. A total of 60 people has to be trained with a minimum of 24 woman who will do paid traineeships
4. Lessons Learned and Conclusions

4.1. Lessons Learned

1) Carefully designing targeting campaigns and selection process:

Clear communication was critical to encourage women’s participation in the pilots. In Bolivia, where the trainings targeted both women and men, the first call for participants resulted in low levels of female turnout. Out of the 180 individuals who signed up for the trainings, only 14 were women. This example highlights the importance of using language that encourages women to be part of a traditionally male sector, despite social prejudices. Subsequent call for participants should emphasize women’s participation through differentiated treatment during the recruitment stage. Additionally, it was deemed important that neither the registration process nor selection requirements of participants impose obstacles\(^\text{14}\) on women registering for trainings. In Nicaragua, the second round of trainings starting in August 2018 will update the beneficiaries’ consultation, interview and selection process. It will also adjust the training specifications by dividing beneficiaries into 3 sub-groups of machinery specializations (i.e. wheel loader, tractor and hydraulic excavator).

2) Managing beneficiaries’ expectations:

The design and implementation of pilot projects can be a lengthy process, particularly when linked to infrastructure project cycles and construction chronograms. Accurate planning of activities can help set realistic expectations for the local population, thus preventing impatience and dissatisfaction among program beneficiaries.

3) Focusing on the impact, not the target: the importance of traineeships and follow-ups with beneficiaries:

In Bolivia, the pilot’s primary focus was on certifying the operators; there were no additional activities once the beneficiaries received certification. Recognizing the importance of integrating women in the labor market, subsequent pilots included traineeships. This allowed beneficiaries to practice the skills acquired in the courses while gaining work experience, thus increasing their opportunities to be recruited as operators of heavy machinery.

4) Establishing leadership in the executing agency:

Effective leadership and coordination are essential for the successful implementation of a project given the large number of actors involved and the cross-cutting nature of technical, institutional, social and financial issues affecting the pilot. The commitment of the executing agency and the borrowing government are also critical to achieve pilot targets as well as generate ownership and empowerment among all actors.

5) Recognizing the importance of training specifications and supervision:

Defining the course contents in detail and determining the minimum hours of operation practice required are essential for an effective learning process. In Bolivia, the pilot was

\(^{14}\) Identified obstacles comprised available time slots for registration and specific experience in the construction sector required to receive the trainings
carried out with specialized technical advice from a firm experienced in delivering training on operating heavy machinery. In Paraguay and Nicaragua, the executing unit was directly responsible for supervising the trainings.

6) Involving the private sector in the pilot’s early stages:

Involving the construction companies and suppliers of heavy machinery early in the pilot may facilitate the inclusion of traineeships. Raising their awareness and demonstrating how social and technical benefits can be attained by employing women yielded positive results. Furthermore, managers from construction firms involved in the pilots expressed support for enhancing the professional development of women who received trainings. The next round of pilots in Nicaragua will include additional trainings on gender for contractors.

7) Monitoring and documenting the pilots:

Promoting the documentation of the pilot in every stage of the process facilitates the achievement of its objectives while creating the opportunity to improve the design and implementation of future programs on gender. Aware of this, the MTI in Nicaragua put in place measures for monitoring and follow-up of the trainings that will begin in August 2018.

4.2. Local Vs National Impact. Scalability of the pilots

Piloting this kind of initiative is key to achieving scalability as it breaks down paradigms related to the female labor force. Moreover, piloting has proven to be necessary as new challenges may arise with increased participation of women. Such challenges may include negative reactions from male peers, instances of violence in the work place, and a need for women to resolve tensions between work and personal life given they remain the primary individual responsible for housework. Several options may be considered to develop systematic mechanisms that provide better employment opportunities for women in the sector of infrastructure. National regulation provides an essential framework to promote gender equality. Additionally, the pilots demonstrated the potential to escalate their impact through the inclusion of gender clauses in the infrastructure tender documents. For example, in Nicaragua where the MTI is implementing three additional road rehabilitation contracts that include gender clauses, the program estimates a tenfold increase in the number of beneficiaries from 12 to 108 women trained.

Moreover, pilots can have a strong demonstrative effect and be a tool to evaluate potential risks. As the infrastructure sector has an enormous inertia towards change, pilots promoting equal gender participation can be an effective solution.

Further work needs to be done as hard evidence will be required to support gender equality in the transport and construction sectors.

4.3. Goal-based planning: a reflection

Goal-based planning presents several benefits worth considering (SDSN 2015):
Harmonizing progress: Having a shared focus and time-bound quantitative goals facilitates monitoring how a country advances toward a goal. It also enables comparison of the impact of different projects and fosters accountability to achieve project results.

Uniting global, regional and local stakeholders on a single vision: Working towards the same goals allows for cumulative and spillover impacts of simultaneous programs being implemented by international, national or local stakeholders.

Ensuring long-term sustainability of goals: The SDGs will not be achieved in the short-run. Rather, they represent a global vision for a better and more sustainable future that will require paradigm shifts that are only attainable through continuous effort. Establishing globally-agreed upon goals steers initiatives toward specific targets regardless of the changing national and international landscapes, thus advancing common-ground programs that can create large-scale impact in the long-term.

Working through a goal-based approach should not, however, hamper collaboration between sectors. A case in point are infrastructure projects, which are often measured through kilometers of roads rehabilitated or number of bridges built. While the SDGs offer additional indicators, such as the "Proportion of the rural population who live within 2 km of an all-season road" (#9.1.1) or "Passenger and freight volumes, by mode of transport" (#9.1.2), a focus on sector-specific indicators should not prevent decision-makers from including other cross-cutting components during project design. The pilots in this paper provide only an example of how infrastructure projects can help advance several goals of the 2030 agenda simultaneously. There are many additional opportunities to synergize the SDGs. Pin-pointing these may help pave a faster route to a sustainable and equitable future.
References


