

**Temporary Social Safety Net and Skills for Youth**

**(HA-L1137)**

**Ex-ante Cost-Benefit Analysis**

July 2018

1. **Introduction**

This document presents the cost-benefit analysis (CBA) of the main investments funded by the Temporary Social Safety Net and Skills for Youth (HA-L1137) in Haiti.

We focus on the following investments, which represent most of the value of the operation:

1. Temporary safety net through temporary employment. This part of the project will finance small community development projects, that aim to create temporary employment for 28,000 youth who are 18-35 years old, who are neither studying nor working and who reside in vulnerable urban neighborhoods. Community projects will have an average value of US$50,000, and will be designed to be intensive in the use of low skill labor force. More specifically, the cost of labor will have to represent at least 70% of the total value of each project.
2. Training for youth. This part of the project will finance demand driven technical training for 1,700 youth with the following characteristics: (i) being 16-29 years old; (ii) being neither studying nor working; and (iii) having completed at least the 6th year of Fundamental Education. Training priority will be given to sectors with job creation potential. Guidance and labor intermediation will be provided to the youths that are in training. Participants will receive a stipend to cover transportation and meal expenses.

The beneficiaries of both interventions will also receive soft skills training.

A complete description of the operation is provided in the Proposal for Operation Development (POD), of which this document is an Annex.

In this CBA, we use a social discount rate of 2%. This selection is based on the work of Evans (2008), which discusses the appropriate discount rate for long-term social projects.[[1]](#footnote-1) The author concludes that in many of these projects the net benefits are associated with environmental and social security, and must be discounted at low rates in the 0-2% range. The sensitivity of the net present value (NPV) to this and other key parameters is presented later in this document.

This CBA estimates a NPV of USD 1.299 million and an Economic Rate of Return of 2.75%.

The rest of this document is organized as follows. In section 2, we present the key assumptions of the CBA, i.e. that successful participation in the temporary employment and in training increases future earnings. This assumption is discussed in the context of the vertical logic of the intervention, and in relationship with the impacts included in the results matrix of the project. In section 3 and 4 we analyze the costs and the benefits of the intervention. In section 5, we present the calculation of the NPV. In section 6, we analyze the sensitivity of the NPV to variations in the key parameters. Section 7 concludes and discusses some caveats.

1. **Key assumption: impact on future earnings**

The key assumption of this CBA is that successful participation in temporary employment and training, both of which include soft skill (or socioemotional ability) training, increases future labor market earnings. Successful participation is defined as follows: (i) for participants in temporary employment, regular attendance (including in soft skill training) and delivery of the community development project, which triggers the payment of the stipend; (ii) for participants in training, completion of the course (including soft skill training) and reception of the diploma.

Higher earnings come from the following impacts, included in the results matrix of the operation: (i) the participants in both temporary employment and training have higher soft skills, thanks to the soft skills training they receive; (ii) the participants in training have higher likelihood of future employment. These impacts will not be measured through an impact evaluation which can attribute the variation to the intervention, but rather will be the subject of a before versus after comparison.

We assume that participation in temporary employment: (i) does not increase the probability of future employment, and; (ii) increases future earnings by 0.5%. This parameter is drawn from recent work by Adhvaryu et al. (2018).[[2]](#footnote-2) This study evaluates the causal impact of “on-the-job soft skills training on the productivity, wages, and retention of female garment workers in India. The program increased women’s extraversion and communication, and spurred technical skill upgrading. Treated workers were 20 percent more productive than controls post-program. Wages rise very modestly with treatment (by 0.5 percent), with no differential turnover, suggesting that although soft skills raise workers’ marginal products, labor market frictions are large enough to create a substantial wedge between productivity and wages. Consistent with this, the net return to the firm was large: 258 percent eight months after program completion” (from the abstract). The sample of this study, conducted in a low income country, is made of young women (average age of 27) with relatively low levels of education (40% with less than secondary education).

We further assume that participation in training (including soft skills training): (i) increases the probability of future employment by 5%, and; (ii) increases future earnings by 15%. The former impact has a parallel in the results matrix, although in the matrix it is expressed in terms of standard deviations of the initial value. The latter is not reflected in the results matrix, as it is not expected to be monitored after the intervention. The parameters we assume are based on the work of Kluve (2016)[[3]](#footnote-3) and a review conducted by the Bank (unpublished), summarized in Table 1. The studies included in this review are relevant for our analysis, because they refer to interventions conducted on vulnerable youth living in urban areas. For both impact on employment and impact on labor income, we select a value around the median of the range of estimates presented in Table 1.

We acknowledge that the parameters discussed in the previous paragraphs are drawn from studies conducted in contexts that do not match perfectly the one of the Bank’s intervention in Haiti. Evidence on the returns to soft skill training is extremely limited in general. There is more evidence on the returns to training in terms of employment and earnings, but no estimate comes from low income countries in the Latin American and Caribbean region. Nonetheless, we believe that the cited literature is valid for the CBA of our intervention, because it refers to evaluations conducted on youth populations with similar levels of education. From the existing evidence, we choose relatively conservative values of the parameters (for example, the return of 0.5% from soft skill training is a low value for an impact estimate). In addition, we transparently show in the sensitivity analysis that the sign of the NPV fundamentally depends on these key parameters. In other words, lower values determine a negative NPV. These parameters can therefore be taken as a threshold that the project must achieve in order to be economically desirable.

**Table 1. Impact of similar training programs on employment and labor incomes**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Program** | **Country** | **Impact on employment** | **Impact detected on:** | **Impact on labor income** | **Impact detected on:** |
| Young Project | Argentina | 10% | Women | 10%\* | Global |
| Chile Joven | Chile | 21% | Under 21 years old, women | 26% | Global |
| Youth in Action | Colombia | 5% | Women | 18% (1),  35% (2) | 1. Men 2. Women |
| Youth and Employment | Dominican Republic | Not significant | Global | 10% | Global |
| ProJóven | Peru | 6% |  | 18%\*\* | Global |
| ProCaJoven | Panama | 10-12% | Women and residents of Panama City | Not significant | Global |

Source: Extracted from Kluve (2016). Notes: \* monthly salary, \*\* income per hour

# Costs of the intervention

The monetary cost of implementing a temporary safety net through temporary employment is equal to UDS 27 million. This will be spent as follows:

* 1. USD 15.12 million will be directed to generating 28,000 temporary jobs through the implementation of community projects. Each job will have a duration of 6 months, with a monthly salary of USD 90 (which represents a social transfer).
  2. USD 6.48 million will be used for the purchase of materials necessary for the implementation of the community projects. These will include: (i) improved street and drainage infrastructure, including corridors, sidewalks, and public stairs; (ii) new or improved retaining wall, likely to accompany sidewalks or the protection of some small works; (iii) new or improved threshold gabion; (iv) new or improved water kiosks, water distribution pipes, community cisterns, rainwater capture, and community latrines; (v) new solar streets lamps installed; (vi) improvements in schools, health centers, and daycare centers (painting, fixing lighting, fixing windows); (vii) new or improved community/public areas, sports, cultural and/or recreation places (open spaces, support to visual arts, music, theater, and sport for youth); and (viii) neighborhood beautification (e.g., painting of walls). The intervention will finance 432 projects: 170 in 2019, 250 in 2020 and 12 in 2021. The cost of purchasing material inputs will be distributed proportionally over the same period, as follows: USD 2.55 million in 2019, 3.75 million in 2020 and 0.18 million in 2021.
  3. USD 5.4 million will be the administrative cost of implementing the temporary employment program, including the soft skills training for the temporary workers, and organizing and managing the implementation of the community projects. This cost will be incurred between 2019 and 2021, proportionally to the number of implemented community projects (USD 2.125 million in 2019, 3.125 million in 2020 and 0.15 million in 2021).

It is well established in the literature that the monetary costs in item (a) do not represent a cost from the point of view of society.[[4]](#footnote-4) They represent a cost for the Government, and a benefit for the recipients, and the two cancel each other out from a social point of view. The social cost of transfer programs is equal to the administrative cost of their implementation, and this is captured by item (c).

We assume that there is no opportunity cost due to foregone labor income, as temporary employment may be not continuous and will be taken up during periods of unemployment.

The social cost of the temporary employment intervention is therefore given by the sum of items (b) and (c).

The monetary cost of implementing the training is equal to UDS 1,000 per trained youth. In addition to this monetary cost, we consider also the opportunity cost of the time spent in training. We need to include this cost because participants in the training have a higher level of education, which translates in a higher likelihood of employment. They cannot attend the training, which is intensive and continuous, during breaks between jobs. We assume that, in the counterfactual scenario with no training, each trainee would be employed for 9 months, earning 150% of the minimum wage. The minimum wage is equal to USD 117.48 per month (source: <http://www.haitilibre.com/en/news-21679-haiti-flash-minimum-wages-all-details.html>). The choice of a value above the minimum wage is due to the level of education required for participation in the training. The opportunity cost of participating in the training is therefore equal to USD 1585.98 per youth (9 months x USD 117.48 x 150%).

The social cost of training is therefore equal to USD 2,585.98 per youth. It will be incurred between 2020 and 2022, proportionally to the number of participating youth (340 in 2020, 680 in 2021 and 680 in 2022).

# Benefits of the intervention

Each community project will employ an average of 65 youth. Therefore, community projects will generate temporary jobs for 11,019 youth in 2019, 16,204 youth in 2020 and 778 youth in 2021. Of these youth, 80% will successfully complete their participation in temporary employment (see definition in Section 2) and benefit from the soft skills training. This means that the number of successful participants is as follows: 8,815 in 2019, 12,963 in 2020 and 622 in 2021.

As justified in Section 2, the benefits of successful participation in temporary employment are equal to an increase by 0.5% in future earnings. It is assumed that, in the counterfactual of no participation in the project, each youth would be working 6 months per year (which reflects the high level of unemployment among youth with low levels of education) at a minimum wage of USD 117.48 per month. Earnings will increase by 0.5%, i.e. by USD 3.52 per year (= 6 months x USD 117.48 x 0.5%). The benefit will be incurred from end of temporary employment to 2060. The individual benefit (USD 3.52) is multiplied by the cumulated number of individuals that have successfully completed their participation in temporary employment in previous years, as follows: 0 up to 2019, 8,815 in 2020, 21,778 in 2021, 22,400 from 2022 to 2060).

Temporary work produces community project. Estimating the social benefits from the currently unidentified community projects is not feasible at this stage of project preparation, and is not planned ex-post as it exceeds the scope of the intervention. We therefore conservatively assume that the social benefits equal the cost of the materials, as detailed in the section on costs.

80% of participants in training will obtain a diploma. This corresponds to the following number of graduates: 272 in 2020, 544 in 2021 and 544 in 2022.

As justified in section 2, we assume that successful participation in training increases future employment by 5% and future earnings by 15%. We apply these returns to the counterfactual earnings. We assume that, if they did not participate in the training, the youth would be working 9 months per year (which reflects lower levels of unemployment among youth with intermediate levels of education) at a monthly wage that is equal to 150% of the minimum wage. Their annual earnings would amount to USD 1585.98 (9 months x USD 117.48 x 150%, consistent with calculation of the opportunity cost in the previous section). The benefit of successful program participation is therefore equal to USD 299.75 per youth per year (= 1585.98 x (1+5%) x 15%). This individual benefit is multiplied by the cumulated number of individuals that have graduated from training in previous years, as follows: 0 up to 2020, 272 in 2021, 816 in 2022, 1,360 from 2023 to 2060).

# Calculation of the Net Present Value

For the calculation of the net present value, we consider the cash flows described in sections 3 and 4 (Table 2).

**Table 2. Cash flows of the intervention, nominal values**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023- 2060** |
| Costs |  |  |  |  |  |  |
| Capital costs of community projects | - | 2,550,000 | 3,750,000 | 180,000 | - | - |
| Administrative costs of temporary employment and community projects | - | 2,125,000 | 3,125,000 | 150,000 | - | - |
| Cost of training | - | - | 340,000 | 680,000 | 680,000 | - |
| Opportunity cost of training | - | - | 539,233 | 1,078,466 | 1,078,466 | - |
| Benefits |  |  |  |  |  |  |
| Extra earnings from temporary employment | - | - | 31,067 | 76,754 | 78,947 | 78,947 |
| Social benefits from community projects | - | 2,550,000 | 3,750,000 | 180,000 | - | - |
| Extra earnings from training | - | - | - | 67,943 | 203,830 | 339,717 |
| CASH FLOW (Benefits – Costs) | - | (2,125,000) | (3,973,166) | (1,763,769) | (1,475,690) | 418,663 |

As previously explained, we use a social discount rate (SDR) of 2%. The NPV is calculated according to equation (1), and amounts to USD 1.299 million. The Economic Rate of Return is the discount rate that determines a null NPV. It is equal to 2.75%.



# Sensitivity analysis

In Table 3, we present the sensitivity of the NPV of the operation to variations in the following parameters: (i) the social discount rate; (ii) the rate of return in terms of future earnings of successful participation in temporary employment; (iii) the rate of return in terms of future earnings of successful participation in the training. The Table shows that the NPV ranges from -1.551 million to +4.149 million.

The sensitivity analysis shows that the social desirability of the intervention depends critically from the values of the social discount rate and of the rate of return of the training in terms of future earnings. We argue that the value selected for the social discount rate is appropriate for a social project that has long term benefits that spread over the entire working life of the beneficiaries. We also argue that the rate of return assumed for successful participation of the training is appropriate given the evidence presented in Section 2.

**Table 3 – Sensitivity of the NPV to variation in key parameters**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Value of paramter** | **NPV**  **(USD million)** |
| Social discount rate | 1% | 3.538 |
|  | Base case: 2% | 1.299 |
|  | 3% | -0.367 |
| Return from temporary employment | 0.25% | 0.247 |
|  | Base case: 0.5% | 1.299 |
|  | 1% | 3.403 |
| Return from training | 10% | -1.551 |
|  | Base case: 15% | 1.299 |
|  | 20% | 4.149 |

# Conclusions and caveats

The CBA shows that the social benefits of the “Temporary Social Safety Net and Skills for Youth” program exceed its social costs. The NPV is equal to USD 1.299 million in the case base scenario, and critically depends on the selection of the social discount rate and the rate of return of the training in terms of future earnings.

It should be highlighted that the intervention may produce a broader set of benefits. For example, future employment is only one of the benefits of the creation of a temporary social safety net in a phase of economic difficulty for the youth of vulnerable urban areas. The safety net, implemented through community participation mechanism, aims to increase the socio-economic integration of the youth, with benefits that may include social peace, reduced incidence of crime and other risky behaviors. Another unaccounted social benefits come from the community development projects created through temporary employment. As these elements are not easy to quantify, particularly ex-ante, we have not included them in the CBA. This implies that the estimate of the NPV presented in this document may be conservative.

1. Evans, D. (2008). Social project appraisal and discounting for the very long term. Economic Issues, 13(Part I), 61-70. <http://www.economicissues.org.uk/Files/108Evans.pdf> [↑](#footnote-ref-1)
2. Achyuta Adhvaryu, Namrata Kala, Anant Nyshadham. 2018. The Skills to Pay the Bills: Returns to On‑the-job Soft Skills Training. NBER Working Paper No. 24313. [↑](#footnote-ref-2)
3. Kluve, J. A review of the effectiveness of active labour market programmes with a focus on Latin America and the Caribbean / Jochen Kluve; International Labour Office, Research Department. Geneva: ILO, 2016. [↑](#footnote-ref-3)
4. See for example: Dhaliwal, I., Duflo, E., Glennerster, R., Tulloch, K. (2012). Comparative Cost-Effectiveness Analysis to Inform Policy in Developing Countries: A General Framework with Applications for Education. Abdul Latif Jameel Poverty Action Lab (J-PAL), MIT. <https://www.povertyactionlab.org/sites/default/files/publications/CEA%20in%20Education%202013.01.29_0.pdf> [↑](#footnote-ref-4)