



Infrastructures Maintenance Training

Terms of Reference

1. Introduction

MozTrabalha project

MozTrabalha is a Swedish-funded project to support the implementation of the Mozambican Employment Policy to enable social partners to achieve the goal of creating more and better jobs for all Mozambicans. One of MozTrabalha's main strategies to support the NEP in creating more and better jobs is the use of Employment Intensive investments (EII) approaches, with an emphasis on bottlenecks at the base of the market system. MozTrabalha puts forward activity "02.01. Employment-intensive investment in sustainable rural market relevant infrastructure promoted", which aims to maximize employment creation in three selected value chains (catering, cashew and construction materials) through the promotion of employment intensive technologies. In particular activity cluster 02.01.03. "Design and implement demonstration projects to showcase the viability, sustainability and employment impact of identified target investment areas" intends to support the promotion of EII approaches through their practical application to pilot projects that possess a high potential for scaling up and formal adoption by public or private actors.

Background: Phase I and II

The first pilot project proposed to this effect was a pilot road using interlocked blocks in the Polana-Caniço neighbourhood of Maputo. This was followed by a demonstration gabion in the same area: 8 members of the community have received training to build gabions, which included a practical application through the construction of three gabions (3mx1mx1m). The construction of this experimental gabion using unemployed female workers from the community demonstrated the potential for this labour based technology to offer a solution that could replace cement based works to solve the problems of erosion and water management in low income neighbourhoods while at the same time creating employment in the beneficiary community.

Thus it was decided to scale up this activity into a pilot intervention that could contribute to convince local authorities and development partners to adopt employment intensive methods in regard to soil stabilization methods. To this effect, Maputo City Council identified jointly with ILO a potential area for intervention in the Mahotas district. This was a site in which a passage of water exposed 4 families to losing their homes, in a context of high level of youth unemployment in the district. It was decided to use gabions as a solution, using community contracting to execute the works. The pilot was completed successfully, having built a 33m gabion retention wall using 15 young female workers that were trained in gabion construction.

2. Problem statement

Mahotas neighbourhood is an area situated not far from the city centre and shows two different realities. Part of the neighbourhood has become middle class residential areas. The other part is still a low income area poorly integrated in the city due to the lack of basic infrastructures. These deficit of public services, such as widespread reliable water and sanitation, road access or day-care facilities



aggravate the problems of unemployment and low income, especially for women. There are therefore three sets of challenges:

- 1) **Economic:** The neighbourhood presents high unemployment rates, especially among women and the youth. Access to higher incomes is severely limited by lack of proper education and skills training. Jobs in the construction sector in the neighbourhood are scarce due to the use of machinery or the higher requirements in terms of training.
- 2) **Infrastructural:** The neighbourhood has a lack of proper infrastructures that can enable economic activity. Many streets lack are not paved and water and sanitation does not arrive equally to all homes in the neighbourhood.
- 3) **Environmental:** Mahotas is situated atop of a hill area that suffers torrential rains during the rainy season. These rains are collected and by some channels that conduct it to a discharge area. However these channels are not properly maintained and a process degradation and erosion is causing a malfunctioning of these water drainage channels, threatening residential areas.

The first phase of this pilot intervention has managed to provide temporary jobs and training for 15 women and built 33m of gabion, as a rain water drainage channel, that has protected 4 homes.

However, there are, in the same neighbourhoods, several other water drainage channels made in gabions, with poor maintenance, which degradation is threatening the safety of local houses.

In this context, ILO in collaboration with the local authorities, identified a critical rain water channel, made with gabions, which degradation is threatening the existence of 4 houses and needs urgent maintenance to replace its functionality. This can be a pilot in infrastructures maintenance works and can open opportunities for EIIP works in the maintenance area, creating also additional jobs.

3. Proposed solution

ILO will demonstrate the adequacy of labour based technologies to solve challenges in the areas of economics, infrastructures and environment. To that effect, ILO proposed the maintenance of a rain water drainage channel, which includes the cleaning, the repairing of damaged gabions and a small extension of the channel, trough the construction of an additional retain wall using gabions, to stabilize the drainage channel. This structure will be emplaced to stabilize the existing channel and replace its functionality. In total it is estimated that 10m of gabion wall has to be repaired and an extension of 6m of the channel with 6m width and two gabion wall on the sides (one on each side) will be needed to provide soil protection in this area under rapid erosion induced degradation and link with the discharge basin.

These gabions will be built by a new group of 15 members of the local community, enabled by provision of training and direction. These workers will be selected among unemployed women and youngsters, giving priority to people trained in previous courses. These workers will be provided with proper equipment, meals and paid and adequate salary.

4. Services required

ILO is looking for a company or individual that can execute the repairing, maintenance and small extension of a water drainage channel made by gabions, through training of local workers.



Each gabion constructed should be a parallelepiped of 1 metre high and wide and between 2 to 5 metres long and stacked to create an extension of retaining wall 6 meters long on both sides of the existing channel and 6 meters width.

This job should be undertaken using employment intensive methods, through the training and hiring of up to 15 members of the local community. The contractor will have the responsibility to prepare the intervention plan (through a technical descriptive memory), devising and implementing to that a training plan, as well as directing the maintenance and construction/extension operation.

It is required that the service provider undertakes procurement of the needed tools and materials, including safety equipment, as well as other complementary services such as catering and day-care for female workers.

It is also expected that the service provider will deliver a maintenance and construction training manual that can be used by local authorities to execute future gabion restoration works with the community.

In sum, it is expected the delivery of two products:

a) Gabion restoration works

- Technical description of the maintenance intervention plan
- Direction of maintenance/repairing works of 10m gabion retaining wall and construction of additional 6m of the same drainage channel
- Cleaning of the entire existing channel
- Provision of training in gabion maintenance works for 15 individuals
- Workers' salaries for each work day (training is not paid but food, water and transport must be provided for both the training and the practical parts)
- The company must be able to supply all tools and materials needed for construction and training
- Provision of complementary services such as insurance of workers, catering and day care.
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B) Training manual

- Short manual (around 30 pages in A5 format) covering
 - Construction of gabions using community resources
 - Weaving of gabion mesh
 - Maintenance of gabion retention wall
 - OSH
- Graphics or pictures showing steps
- Clear and simple language. Written in Portuguese

5. Expected products and payment schedule

- Upon signature of the contract (20%)
- Procurement plan, training programme and maintenance/extension schedule (30%)
- Report of training to 15 members of the community in gabion maintenance (30%)



- Final report assessing the repairing/maintenance of 1 retention wall 10m x 6m x 1m and construction/extension of existing channel (additional 6mx6mx1m) using gabion technology and digital version of Training Manual (20%)

6. Duration of contract

The time allocated for this activity, training and execution, is two and half months starting upon contract signature. It is expected for the activity to begin no later than 30th of March 2020.

7. Company profile

- Lead for this activity must be an engineer or architect with more than 15 years of hands on experience in directing similar works
- Company or individual must have a proven record of experience training unskilled workers of local communities in infrastructures construction/maintenance techniques.
- Previous experience in training of infrastructures maintenance.
- Company or individual must have experience and proven capacity to execute maintenance works of this size, including procurement of tools and materials.
- Good command of Portuguese.

8. Applying for this consultancy

Interested candidates should submit a detailed technical and financial proposal, explaining their approach to tackle this job and detailing costs for each item to be needed. This proposal must be submitted by email to David Marcos (marcos@ilo.org) and Raquel Malunga (malunga@ilo.org) before the 6th of March 2020.