Ecuador

TSA on the small-scale mining sector/environmental degradation

Artisanal and Small-Scale Mining (ASSM) for gold in Ecuador benefit nearly 100,000 people directly and 400,000 people indirectly. In Ecuador, gold represents the main export mineral among strategic mineral resources. ASM produces at least 85% of Ecuadorian gold, which corresponds to more than USD 300 million per year in income. The most vulnerable population, which operates mainly from informality, turns to the increasing gold price opportunities, which explains the accelerated expansion of the sector in recent years and its adverse environmental effects. ASSM in Ecuador continues to use mercury (Hg) despite its prohibition in 2015. Mercury discharges occur during the separation and recovery of gold and pollute the air, the soil, and the waters and deteriorate ecosystem services such as clean air, water, food, and biodiversity. The worsening life quality and productivity resulting from mercury pollution have a direct cost to the State and society. The TSA assesses such costs.

The TSA explored an alternative production model and its benefits by targeting the gold processing plants to promote a more efficient and environmentally friendly process. This alternative process will reduce mercury discharges and increase the net benefits to ASSM miners and public and private valued chain stakeholders. The TSA used relevant indicators such as net benefits, cost of mercury discharges, and state revenue from royalties in a 10-year timeframe.

The TSA shows that, despite an initial loss of revenue in the short term, due to the investment needed to shift from BAU to SEM, the processing plants will receive substantial gains starting in the fourth year and doubling net benefits in ten years. The SEM model will generate an additional USD 40 thousand and USD 25 thousand increase in annual income to small and medium artesian miners, respectively. Besides, an additional USD 134 thousand/year to processing plants; and an increase of up to USD 65 thousand/year in royalties to the State from each processing plant. The SEM model also shows that a more efficient and environmental processing plant can increase gold reserves, approximately USD 4 Million (per plant) in 10 years. In the projected 10-year period, under the SEM model, miners can reduce their use of mercury by 80%. Therefore, the avoided costs due to contamination are approximately USD 80 Million per year. The TSA study provides specific policy options to attain the indicated SEM goals.

Status: Completed.

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TSA implementation partners: Ministry of Mining, Ministry of Environment, and Conservation Strategy Fund (CSF).