

# Gold Mining and Living Standards in Ghanaian Households



## In brief

- Mines in many developing countries are located in rural areas, and thus, are located where agricultural work is the main source of livelihood for a large percentage of the population. Furthermore, mines can generate significant externalities that negatively affect the agricultural sector, such as pollution and competition for land and labour.
- This study seeks to examine the effect of gold mining on agricultural product and productivity in Ghana.
- The authors found that gold mining reduces agricultural productivity. Between the period of 1998 and 2005, estimates suggest up to a 40% reduction in agricultural productivity. This is associated with polluting mines and decreases with distance.
- Furthermore, this reduction in agricultural productivity is associated with an increase in rural poverty, income and consumption.
- Thus, any current mitigation and/or compensation policies appear to be insufficient to offset the negative effects of gold mining. Total revenue paid in royalties by the mining sector at the aggregate level is low and is not enough to compensate farmers for their economic losses.
- Recommendations:
  - Update guidelines of Environmental Impact Evaluations
  - Include loss of agricultural productivity and farmers income in the policy debate on the benefits and costs of mining.
  - Broaden the scope of mitigation and compensation policies
  - Recognize that mining may redistribute wealth within a country

## Policy Motivation

*“We use the case of gold mining in Ghana to investigate how mining affects agricultural product and productivity”*

In this project we use the case of gold mining in Ghana to investigate how mining affects agricultural product and productivity. This is a crucial policy question to understand the effect of extractive industries in local living standards for two reasons. First, modern mines in many developing countries are located in rural areas, where agriculture is an important economic activity and the main source of livelihood for a large proportion of the population. Second, mines have the potential to generate significant negative spillovers to farmers such as pollution and competition for key inputs like land and labour.

## Policy Impact

This research intends to inform different aspects of mining policies such as cost-benefit analysis, environmental regulation, mitigation, and compensation schemes to the local populations. We expect these findings to affect decisions regarding the opening, and expansion, of mining operations.

## Audience

This research should be of interest for policy-makers and mining companies in countries where modern mining is located in rural areas. In this context mining has the potential to disturb agriculture and, through that channel, affect living standards of local populations.

## Policy Implications

### Gold mining has reduced agricultural productivity

We find that total factor productivity, and crop yields have decreased in mining areas. Our estimates suggest a reduction of up to 40% in agricultural productivity between 1998 and 2005. The negative effect is associated to polluting mines and decreases with distance. In other words, if we compare two farmers, one near a mine and the other far, with similar characteristics and the same endowments of land and labour, the former would produce significantly less agricultural output than the other.

*“Our estimates suggest a reduction of up to 40% in agricultural productivity [in mining areas] between 1998 and 2005”*

### The reduction in agricultural productivity is associated to an increase in rural poverty

During the analysed period, measures of living standards have improved all across Ghana. Households engaged in agricultural activities (whether as producers or workers) in areas closer to mining sites have been excluded from this process. As a consequence, measures of income, consumption and poverty levels have deteriorated for them.

## **Mitigation and compensation policies may be insufficient to offset local negative effects**

The results in the previous bullet point suggest that if there is any compensation scheme for affected farmers, it does not offset the negative results. Additionally, an analysis of royalties paid by the mining sector at the aggregate level shows that total revenue paid is low and would not be enough to compensate the economic losses faced by local farmers. Finally, the distribution of royalties between different government levels seems to be tilted towards the central government. Even though the costs are exclusively born locally, less than 10% of the receipts are received by district governments and traditional authorities in the affected areas.

## **Implementation**

### **Update guidelines of Environmental Impact Evaluations (EIA)**

In cases, where mining occurs in the proximity of agricultural areas, EIAs should consider the possible impact of mine-related pollution on crop yields and local income. The effect on crops may be specific to each context, so these studies should be replicated case by case.

*“Mining can bring broader benefits to a country at the expense of localized costs (such as loss of agricultural output), some of them born by already poor disadvantaged groups. This effectively redistributes wealth within a country.”*

### **Include loss of agricultural productivity, and farmers’ income, in the policy debate on the costs and benefits of mining**

Usually this policy debate focuses on the benefits mining could bring in the form of jobs, taxes or foreign currency. These benefits are weighted against environmental costs such as loss of biodiversity or health risks. However, local living standards may be also directly affected by the reduction in agricultural productivity. In fertile rural environments, such as Ghana, these costs may offset the country’s benefits from mining.

### **Broaden the scope of mitigation and compensation policies**

Usually mitigation and compensation policies focus on populations directly displaced by mining. The negative effects of air and water pollution, however, can extend to a broader population, beyond the boundaries of mining licenses. These groups should also be considered in the area of influence of a mine.

### **Recognize that mining may redistribute wealth within a country**

Mining can bring broader benefits to a country at the expense of localized costs (such as loss of agricultural output), some of them born by already poor disadvantaged groups. This effectively redistributes wealth within a country. This redistribution should be considered to better understand local opposition to mining projects and demands for better compensation.

## Dissemination

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