



## Social and environmental legacies at Obuasi

The business combination between AngloGold and Ashanti in April 2004 was the start of a long and complex process of not only combining the physical assets of the company into a single operating and accounting entity, but it also involved a multi-faceted process with the stakeholders of the company, both internally and externally, particularly in Ghana.

The change of effective control of the company from an Accra-based entity to a Johannesburg-based company (albeit that both Ashanti and AngloGold are largely owned by international shareholders and that the government of Ghana is now a significant shareholder in the combined company and is represented on its board) was an emotive and understandably unwelcome change to some employees and communities. It also provided an opportunity for national and international NGOs to increase pressure on the new company and to deal with issues that might not have received adequate attention in the past, or which could not comfortably be raised with a local company.

The former Ashanti's relationship with local NGOs tended to be burdened with mistrust and mutual suspicion. AngloGold Ashanti's relationships with these NGOs have progressed over the past two years, as have direct relationships with community members. Admittedly, however, these paths have not always been smooth or without acrimony and much remains to be done to establish common ground and a way of working.

AngloGold Ashanti has, however, indicated its intention to engage in dialogue with local Ghanaian civil society groups, such as Third World Network Africa (TWNA) and Wassa Association of Communities Affected by Mining (Wacam), and foreign groups they work with such as the UK-based ActionAid (*which released its report: Goldrush – the impact of gold mining on the poor*



people in Obuasi in Ghana – download pdf of ActionAid Report and AngloGold Ashanti response at [www.aga-reports.com/06/Obuasi-legacy.com](http://www.aga-reports.com/06/Obuasi-legacy.com)). Since the merger, AngloGold Ashanti has been working towards the development of constructive relationships with these and other parties.

### **Legacy issues**

A significant challenge for AngloGold Ashanti is that mining has been taking place in one form or another at Obuasi for more than 100 years and that the company has to deal with significant environmental legacy issues from the past while at the same time addressing the challenges of present mining activities. In fact, many of the issues and much of the research referred to in recent reports by these groups predates the business combination between AngloGold and Ashanti.

### **Engaging with NGOs**

AngloGold Ashanti is in discussions with Wacam regarding the setting up of a joint investigation group which would investigate legacy issues and current and future areas of concern. Issues that have been raised and would be considered by such a committee are land issues and damage to property, environmental concerns and concerns relating to human rights. In particular, AngloGold Ashanti has indicated that it is committed to:

- Reviewing jointly allegations of abuse of Mr Awudu Mohammed (*Report to Society 2005 – page C17*). In his case there are contradictory medical reports and opinions on the cause of injuries sustained when being pursued on company property by police and AngloGold Ashanti asset protection.
- Reviewing other allegations of human right abuses on company property, some of which go back as far as 10 years but which have been repeatedly highlighted by Wacam and other groups.
- Reviewing settlements and compensation which have been agreed on should that group deem it appropriate.
- Continuing to review and develop its environmental policies and procedures at Obuasi to address ongoing environmental pollution issues and to address legacy issues. (See *box overleaf*).

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In more general terms, the company has been considering and addressing the issue of artisanal and small scale miners (*See case study: Artisanal and Small-Scale Mining and AngloGold Ashanti on page 124*) which is of concern to both the company and the community as it has led to safety and health issues for employees and community members alike, sabotage of company property (including broken tailings pipes which have contributed to environmental problems), disruptions to production and human rights issues. The company is aware of the challenge it faces in finding a balance between the obligation to protect its assets in ways which do not infringe human rights and at the same time recognising that small scale mining can be a legitimate means of earning a livelihood in a gold-rich area.

Related to this and other community issues, the company is dealing with its relationship with both the police and army services in areas in which it does business. AngloGold Ashanti has applied to become a signatory of the Voluntary Principles on Security and Human Rights, and while this has not yet been formalised, the company has sought to adhere to the Voluntary Principles. As part of this commitment the company is currently reviewing its policies and practices in respect of human rights and is standardising human rights training across the group.

## Addressing environmental issues at Obuasi

AngloGold Ashanti has, over the past two years, taken a number of steps to address environmental pollution issues at Obuasi. Following a strategic environmental review conducted in 2005, five major environmental risks were identified and plans have been put in place to start dealing with them.

The five areas that have been identified as requiring attention are:

- Water management issues
- Rehabilitation plans
- Arsenic management (which has largely been addressed – see below)
- Final closure estimates
- A legacy programme to address historical issues.

### Community concerns

In addition, the company is aware of concerns raised by local residents and NGOs in respect of elevated levels of heavy metals and arsenic in and around Obuasi.

One of the most significant areas of concern was the safe disposal and rehabilitation of an area in which some 10,000 tonnes of arsenic trioxide which had been stockpiled at the Pompora Treatment Plant at Obuasi following the collapse of the arsenic market in the early 1990s. (*See Report to Society 2004: Arsenic remediation at Obuasi on page E31*). This stockpile came about as a by-product of gold mining at Obuasi and has been safely placed in a lined storage facility to prevent any further environmental contamination.

As in a number of other places in the world, gold and base metals at Obuasi are strongly associated with naturally occurring deposits of arsenic (arenopyritic orebodies). When the host rock is crushed to release the gold, arsenic, together with base metals, may be released into the tailings or waste residues.



## Social and environmental legacies at Obuasi cont.

### Engaging with communities

In an effort to initiate a formal process of engagement directly with communities in Ghana, AngloGold Ashanti held Sustainable Development Workshops in Obuasi in August and October 2006 – the first for internal role players and the second for external stakeholders and interested parties. More than 50 people attended the second session. Key issues addressed included:

- the need for more proactive and better stakeholder engagement, and the development of a formal stakeholder engagement process;
- agriculture as an opportunity for development;
- manufacturing opportunities. A specific summit on “The future of gold jewellery manufacturing” is planned;
- services (provision and development of providers);
- tourism as an opportunity for development; and
- other opportunities for development, including social investment opportunities and needs, land use in the longer term.

Although water sampling programmes have been conducted over many years, a new programme to identify areas of land and water courses containing high concentrations of arsenic was initiated in December 2006. The following has been put in place.

- An intensive plan to establish and monitor the quality of the ground water in the vicinity of Obuasi and to develop a conceptual ground model which will assist in understanding water flows and developing a comprehensive water management programme. Natural water courses have been plotted on the AngloGold Ashanti Geographic Information System (GIS) allowing the company to track their proximity to mining areas and communities. Information is being gathered from 86 sampling points and is being recorded on the GIS and, from this data, any polluted streams will be identified. A systematic campaign of sampling a selection of the 120 community boreholes is also planned. Based on the information generated, an arsenic pollution profile will be determined for each stream and recorded as a benchmark. The most significant arsenic discharges into the streams and natural environment will be traced to their origins, which may or may not relate to mining, and action plans will be developed in response to these. This initial programme is expected to be completed in 2007.
- A comprehensive water balance has been established for the Obuasi operations, showing both the piping reticulation and the volumes of water handled. Investigations have revealed that excess water from operations has been discharged into

the natural water courses and that these discharges contain levels of toxins higher than the Environmental Protection Agency (EPA) standard. An immediate part of the remedy is the commitment by Obuasi to purchase two water treatment plants for the removal of cyanide so that water may be reused in the plant. This will significantly reduce the volumes of water discharged as the discharge points will decrease from three to one.

- An initial investigation into the presence of toxic metals in oranges and other fruits at Obuasi has been conducted, following publication of a report by TWN alleging the presence of traces of arsenic in these fruits. The company has approached TWN proposing a joint further investigation into this matter. TWN's response was still awaited at the time of writing. (*See box overleaf*)

### ISO14001

In line with the group's policy to implement ISO14001 (see case study on page 142), Obuasi mine was recommended for certification as having been in conformance with this standard by independent auditors DLIQ. The key risk areas and issues identified above are being addressed as part of the ISO14001 system implementation.

### Analysis of oranges at Obuasi

Following concerns raised first by Third World Network (TWN), and later by ActionAid, relating to the alleged presence of arsenic, mercury and zinc in oranges grown near AngloGold Ashanti's mining operations in Obuasi, the company has put in place a number of measures to review and address the situation.

It should be noted that there is a level of naturally occurring arsenic in the soils in the Obuasi area, as is quite common where certain types of gold-bearing ore is found. It is unclear at this stage whether existing arsenic levels are naturally occurring or due to mining activities.

In the first instance, the company has had an initial meeting with TWN and has indicated its willingness jointly to investigate the matter and to submit specimens for independent testing. The company has also requested that any scientific data in the possession of TWN be shared with the company so as to take the matter forward in an objective and methodical manner. The company would share its own initial research with TWN at the same time.

The current plotting of natural water courses and arsenic and heavy metal pollution through the Geographic Information System (GIS) will be used to tie in the location of orange groves with the water courses in attempt to understand the source of possible contamination.

AngloGold Ashanti has also commissioned preliminary chemical analysis of fruit (oranges, yams, plantains) grown in the Obuasi region to determine if arsenic was present in unusually high amounts and if arsenic was associated with particular tissues (peel, seeds, flesh) in order to optimise the sampling and analytical procedures for more representative and statistically sound sampling in the future.

The results of the project (which are of a very preliminary nature and should be subject to further analysis) are presented below. Arsenic was detected in all samples. The lowest concentrations were found in the flesh, which is also the portion consumed in the highest quantities. The levels of arsenic in the fresh (undried) flesh of the oranges and yams were generally low, and within the acceptable limits for consumption as part of a normal mixed diet, depending on how many are consumed daily. The levels in the fresh flesh of plantains was moderate. The levels in the dried fruits were higher, and the levels in the seeds and peels of all the samples were high.

Further research needs to be undertaken:

- the arsenic values found need to be evaluated in terms of what proportions of these foodstuffs are consumed daily, how they are prepared (washed, peeled, cooked) and what chemical species of arsenic is present in the samples as this influences toxicity;



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- these arsenic values also need to be interpreted relative to the natural background levels of arsenic, which are expected to be elevated on all plants and crops grown on naturally arsenical soils of Obuasi. It can then be further established whether these particular samples contain elevated arsenic due to mining activities, or if they are representative of the natural situation in the locality.

AngloGold Ashanti is confident that working with stakeholders appropriate measures can be put in place to protect the community.

Measures to address the problems could include:

- educating the public to wash, peel and core fruit before consumption which will significantly reduce the risk of arsenic exposure, as will washing and peeling of yams prior to cooking;
- reducing human exposure to arsenic can be achieved through avoidance, that is, not planting on naturally high arsenic soils or on contaminated soils;
- avoiding crops that accumulate arsenic; and
- conversely, clean-up of arsenic contaminated soils and shallow water can be achieved to some extent by cropping with arsenic-accumulating plants.

AngloGold Ashanti is committed to establishing a scientific research protocol to further investigate the issue and to do so in conjunction with other stakeholders.

### **Preliminary research results undertaken for AngloGold Ashanti:**

Note: The UK statutory limit for arsenic in fresh produce is 1 mg/kg (1 ppm), and one sample of plantain fruit plus seeds, all the orange pips, and all the unwashed yam peel exceeded this. The fresh and dried flesh of the oranges, yams and most of the plantain was below these limits. The results are quoted in parts per billion (ppb) and parts per million (ppm).

Oranges: Arsenic was present at very low concentrations in the undried (fresh) fruit flesh of the two oranges ( $22\pm 5$  ppb, or  $0.02\pm 0.005$  ppm fresh mass), and at moderate concentrations in the undried peel ( $237\pm 11$  ppb or 0.237 ppm) and undried pips ( $995\pm 364$  ppb or 0.995 ppm). Arsenic concentrations were of course higher in dried orange fruit flesh ( $206\pm 48$  ppb or 0.206 ppm), dried peel ( $831\pm 39$  ppb or 0.831 ppm) and dried pips ( $3403\pm 1573$  ppb or 3.40 ppm).

Plantains: Arsenic was present at low concentrations in the undried (fresh) fruit flesh of the two plantains minus-seeds ( $81\pm 94$  ppb or  $0.082\pm 0.094$  ppm fresh mass), and moderate concentrations in the undried fruit-plus-seed ( $264\pm 152$  ppb or 0.264 ppm) and undried peel ( $236\pm 34$  ppb or 0.236 ppm). Arsenic concentrations were moderate in the dried fruit flesh-minus seeds ( $208\pm 246$  ppb or 0.208 ppm), and high in the undried plantain fruit-plus-seed ( $691\pm 445$  ppb or 0.691 ppm), and in dried peel ( $1\ 482\pm 151$  ppb or 1.48 ppm).

Yams: Arsenic was present at moderate concentrations in the undried (fresh) fruit flesh of the two yams ( $155\pm 44$  ppb or  $0.155\pm 0.04$  ppm fresh mass), and at high concentrations in the undried peel ( $22\ 060\pm 2\ 143$  ppb or  $22\pm 2$  ppm). Arsenic concentrations were higher in dried yam flesh ( $387\pm 90$  ppb or 0.387 ppm), and extremely high in the dried peel ( $97\ 966\pm 15\ 670$  ppb or 98 ppm). It must be noted that the peel was contaminated by adherent microscopic soil particles, which are virtually impossible to remove, and this would have added significantly to the contaminant load (the true levels of Arsenic in yam peel are probably one to two orders of magnitude lower as plant to soil Arsenic transfer co-efficients are between 0.01 and 0.1). However, if yams are not rigorously cleaned and peeled before baking and consumption, the levels of arsenic found in the peel could be experienced by the consumer, and surface dirt on the surface of the fruits and vegetables is the highest risk factor identified.