Illegal logging in Ghana
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Introduction
It is generally recognised that illegal logging is widespread in Ghana. The Ghana Wood Industry and Log Export Ban Study estimates the annual timber harvest for 1999 at 3.7 million m³ with 1.6 million m³ harvested by the formal sector and 1.7 million m³ by the informal sector (chainsaw operators) (Birikorang et al. 2001). This level of harvest should be compared with an Annual Allowable Cut (AAC) at 1.0 million m³. Given the increasing international focus on illegal logging, surprisingly little research has gone into assessing the timber harvest in Ghana in terms of size, and no studies have attempted to document which species were harvested where (on- or off-reserves). Our recently published research (Hansen and Treue 2008) narrows this information gap. The main results are presented here.

Approach (definitions and methods)
Illegal logging is broadly defined as »…when timber is harvested, transported, bought or sold in violation of national laws« (Brack 2003, p.
In Ghana, the actual timber harvest for 2005 is conservatively estimated at 3.3 million m$^3$ while the Annual Allowable Cut (AAC) is only 1.0 million m$^3$. Thus 2.3 million m$^3$ (70%) is illegally harvested.

Chainsaw lumbering, to supply mainly the domestic market, is estimated to account for approximately 75% of the illegal harvest. This figure is, however, rather uncertain and might be considerably higher. Accordingly, there is an urgent need for research to establish more reliable estimates on the size of the chainsaw lumber market.

The official harvest records and the estimated actual timber harvest both suggest a strong preference for scarlet and red star (the most valuable) species. The actual scarlet star harvest is estimated at 1.25 million m$^3$, which is six times the AAC. The actual red star harvest is estimated at 1.0 million m$^3$, which is twice the AAC.

The annual harvest inside forest reserve is estimated at approximately 2.0 million m$^3$, against a recorded reserve harvest of 0.6 million m$^3$, and an AAC of 0.5 million m$^3$. The high harvesting intensity and preference for certain species suggest that forest reserves are seriously disturbed. Illegal logging thus undermines the species composition and may threaten the very existence of a permanent natural forest estate including its environmental services and biodiversity. Moreover, persistent over-harvest renders the current on-reserve AAC unsuitable to represent a sustainable timber harvest level.

The high incidence of illegal logging documents that the, in principle, sound forest management regulations including the AAC have not worked in practice. Illegal logging is, therefore, both a symptom and result of a malfunctioning forest policy that needs fundamental reform.

Policy Conclusions

- In Ghana, the actual timber harvest for 2005 is conservatively estimated at 3.3 million m$^3$ while the Annual Allowable Cut (AAC) is only 1.0 million m$^3$. Thus 2.3 million m$^3$ (70%) is illegally harvested.
- Chainsaw lumbering, to supply mainly the domestic market, is estimated to account for approximately 75% of the illegal harvest. This figure is, however, rather uncertain and might be considerably higher. Accordingly, there is an urgent need for research to establish more reliable estimates on the size of the chainsaw lumber market.
- The official harvest records and the estimated actual timber harvest both suggest a strong preference for scarlet and red star (the most valuable) species. The actual scarlet star harvest is estimated at 1.25 million m$^3$, which is six times the AAC. The actual red star harvest is estimated at 1.0 million m$^3$, which is twice the AAC.
- The annual harvest inside forest reserve is estimated at approximately 2.0 million m$^3$, against a recorded reserve harvest of 0.6 million m$^3$, and an AAC of 0.5 million m$^3$. The high harvesting intensity and preference for certain species suggest that forest reserves are seriously disturbed. Illegal logging thus undermines the species composition and may threaten the very existence of a permanent natural forest estate including its environmental services and biodiversity. Moreover, persistent over-harvest renders the current on-reserve AAC unsuitable to represent a sustainable timber harvest level.
- The high incidence of illegal logging documents that the, in principle, sound forest management regulations including the AAC have not worked in practice. Illegal logging is, therefore, both a symptom and result of a malfunctioning forest policy that needs fundamental reform.
that in 2002 the Ministry of Lands, Forests and Mines revised the off-reserve AAC from 0.5 to 1.5 million m$^3$.

This, however, makes little sense as the recorded off-reserve harvest at the time of revision had fallen below the original level of 0.5 million m$^3$ and has continued to drop ever since.

**Estimated actual vs. allowable timber harvest**

Figure 3 depicts the estimated timber harvest against the AAC. The total harvest in 2005 is estimated at 3.3 million m$^3$, 1.6 million m$^3$ by the export oriented formal sector and 1.7 million m$^3$ by the informal sector, supplying mainly the domestic market. At least 2.3 million m$^3$ is thus illegally logged.
The total annual scarlet star harvest (Figure 3B) is estimated at approximately 1.25 million m$^3$ for 2005, some six times above the AAC. Also the red star and pink star harvests, estimated at approximately 1.0 million m$^3$ and 0.6 million m$^3$, respectively, are way above their AACs, although to a lesser extent than scarlet star species.

The available data do not allow a firm separation of on- from off-reserve harvest. Yet, since scarlet star species appear almost depleted off-reserves, the study indicates that the actual on-reserve harvest is at least in the order of 2.0 million m$^3$ annually, of which 1.0 million m$^3$ is scarlet star species. The scarlet stars are thus being utilised at a level exceeding eight times the on-reserve AAC.

**Conclusions**

The study confirms that illegal logging constitutes a serious problem in Ghana. The annual harvest is conservatively estimated at approximately 3.3 million m$^3$ against the AAC of 1.0 million m$^3$, i.e. some 70% of the annual harvest in Ghana is illegal. This puts Ghana in the high end internationally.

Seventy-five per cent of the illegal logging is associated with chainsaw lumbering, which suggests that a solution to the illegal logging problem in Ghana is intimately related to measures which address the underlying causes of chainsaw lumbering. Our study assumes that the annual chainsaw lumber consumption during the period 1996-2005 is about 1.7 million m$^3$ in round wood equivalents. Yet, this probably underestimates the current size of this market. There is thus an urgent need for further research on the size of the chainsaw lumber market in Ghana.

The implications of the results are grave. Forest reserves have in all likelihood been grossly over-harvested for the past 10 years, possibly longer. Due to this long standing overexploitation, forest reserves can no longer support an AAC of 0.5 million m$^3$, and a future on-reserve AAC would predominately consist of red and pink star species. The persistent overexploitation implies a high degree of logging disturbance inside forest reserves, inevitably involving areas like steep slopes and river banks where no logging should take place. This in turn threatens the provision of environmental services and biodiversity conservation. Moreover, off-reserve areas can no longer serve to «buffer» the logging pressure, which underlines the increasing vulnerability of forest reserves to illegal logging.

Our results suggest that the, in principle, sound forest management regulations established during the mid-1990s, and which led to the AAC, have not worked in practice. We conclude that the high degree of illegal logging is both a symptom and a result of a malfunctioning forest policy framework. Consequently, fundamental reforms of the timber governance regime will be required to address illegal logging. The suggested main elements of the policy reform process will be dealt with in a separate brief.

For a more elaborate discussion of illegal logging in Ghana including research methods, results and conclusions, please refer to Hansen and Treue (2008).

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**References**

