



Tropentag 2008  
University of Hohenheim, October 7-9, 2008  
Conference on International Research on Food Security, Natural  
Resource Management and Rural Development

---

---

**Participatory Forest Management and the Improvement of Rural Livelihoods  
in East Africa – The Case Study of the Bale Mountains, Ethiopia and the  
Transferability to the Kakamega Forest, Kenya**

*Cremer-Schulte, Dominik; Heinrich, Juliane; Kaboth, Katharina; Noack, Sabine*

TU Dortmund University, Faculty of Spatial Planning, August-Schmidt-Str. 10, 44221 Dortmund, Germany.

**Abstract**

Ecosystems are threatened by immense deforestation worldwide. In the time period from 2000 to 2005 an area of estimated 7.3 million hectares forest was lost per year. This complies with the size of for example Panama or Sierra Leone (cf. FAO, 2005, p. 13). Deforestation is attended by a loss of biodiversity which has manifold negative consequences. Particularly due to the unique significance of forests for CO<sub>2</sub> conversion and storage, deforestation of forests entails an intensification of the greenhouse effect which contributes to global warming (cf. WEBSITE NATIONAL GEOGRAPHIC). But biodiversity loss also disrupts natural functions of an ecosystem which makes it more vulnerable to shocks and disturbance and less able to supply humans with its diverse ecosystem goods and services (cf. UNEP/CBD QUOTED FROM KENEA, FORTHCOMING, p. 3).

*The Research Area*

“Dodola and Adaba are district capitals situated in the foothills of a vast and strikingly beautiful mountain range, with summits rising to 3,700 m above sea level. The hills and valleys are covered with pristine forest and the highlands carry eminently unspoilt Erica heather and moorland. Numerous bird species, Colobus monkeys and other interesting animals are found here.” (PAMPHLET QUOTED FROM POPP, 2005, p. 43)

The Bale Mountains in the highlands of southern Ethiopia contain the largest area of afro-alpine habitats on the African continent. The citation above gives an impression of the unique ecosystem and the huge variety of species in this area. But the region is also one example for the impacts rural population can create on forests and natural resources. The population in this area grows at a high rate of three per cent each year (cf. INTERVIEW IRWIN)

and people heavily depend on forest products as they are the main source of income. Wood from the forest is used for construction, as fuel wood for heating and cooking and to generate an income by selling it (CF. F11 (STUDENT PROJECT F11) 2008). Besides this, forest is converted to arable land for the purpose of growing crops as well as cattle rearing. This situation even deteriorates due to the lack of non-agricultural and non-wood-based income opportunities in this area which might reduce the population's dependency on the forest. The heavy degradation of the remaining natural forests due to uncontrolled anthropogenic use led to a particular loss of the indigenous and partially endemic flora and fauna. To counteract this development, appropriate interventions were and are still needed in order to prevent the further loss of biodiversity and to establish a sustainable management of natural resources without compromising the needs of the local inhabitants.

### *The Integrated Forest Management Project Adaba-Dodola*

This article subsumes the impact study conducted by a group of students of the Dortmund University of Technology. In their work, the group concentrated intensively on one specific approach to participatory forest management which was introduced in the area of Adaba-Dodola in the north-western Bale Mountains of Ethiopia. The approach in question, the Integrated Forest Management Project Adaba-Dodola (IFMP), was initiated in 1995 by local stakeholders in cooperation with the Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (GTZ). The overall goal of the IFMP was to protect the remaining natural forests in the Bale Mountains from further destruction and to develop, use and manage them sustainably (CF. F11 (STUDENT PROJECT F11) 2008). To reach this goal and respond to the problems adequately, the stakeholders decided on developing a community-based approach which was named the WAJIB -approach (local language abbreviation for “forest dwellers’ association”). The idea of WAJIB is that local inhabitants, organised in forest dweller associations, receive exclusive rights to use forest products and generate income through forest-related activities. In return the WAJIB-groups have to guarantee the maintenance of the tree cover and to implement rehabilitation measures. Supplementary measures of the IFMP included the introduction of non-wood based income generating activities for all people of the area, especially those who were excluded from the WAJIB -approach itself. The aim of income generating measures was to reduce the pressure on the remaining natural resources by the local community. The most recognised non-wood based activity is the eco-tourism project in Adaba-Dodola (CF. HILL ET AL., 2008). The group examined the various impacts which resulted from the WAJIB -approach and furthermore developed action recommendations for the future development of the project.

### *Methodology and Investigation*

To analyse the situation in the Bale Mountains, to identify conflicts and to figure out the impacts which were originally caused by the IFMP a variety of methods was applied to gather information. Eventually, the aim of the student project was to create a knowledge base for action recommendations for the region. Besides literature research, a fieldtrip to Ethiopia was conducted. Semi-structured interviews with key stakeholders allowed to

become acquainted with opinions and insights on the topic in general and concerning certain phenomena. The conduction of structured interviews with local farmers in the Bale Mountains region offered information on respondents' education, their economic activities, land and forest use and also on the impacts of the WAJIB -approach. A market survey in Dodola, a nearby urban settlement, gave an overview of the range of products, which are traded on the market, the origins of products, differences in supply due to the seasons and the used models of transport. A workshop containing a transect walk through one WAJIB, a scoring-exercise on income and expenditure of the locals, the creation of a resource -map and a group discussion with WAJIB-members resulted in a base for a detailed analysis of an exemplarily selected WAJIB block. A presentation of the intermediate results of the excursion and a discussion with experts at the University of Addis Ababa made up the completion of the excursion and permitted a reflection of results (CF. F11 (STUDENT PROJECT F11) 2008).

#### *Analysis of the Current Situation in the Research Area and Impacts of the IFMP*

Before the WAJIB-approach was implemented, livestock herding, intensive farming and inefficient use of fertilisers caused an overuse of the soil in the Bale Mountains. As a consequence the soil was threatened by erosion (CF. F11 (STUDENT PROJECT F11) 2008). Ongoing deforestation for the creation of additional grazing and farming land as well as exploitation of wood products for construction and heating caused a noteworthy loss of indigenous flora and fauna (CF. F11 (STUDENT PROJECT F11) 2008). In contrast to that, the forest cover in the WAJIB area could be increased by 15.6 per cent in total within the time period from 2002 to 2006 (CF. INTERVIEW TADESSE). This issue signifies the great success of the WAJIB -approach which can be traced back to the limitation in the number of people being allowed to use the forest and its related products on the one hand and by the accomplishment of rehabilitation measures by the WAJIB -members on the other hand. Nonetheless, a sophisticated examination of the development of the forest cover in the Bale Mountains reveals that especially in the forest blocks located near larger settlements further deforestation was recorded. Due to the spatial closeness to the nearby villages, one can assume this happened because of an additional illegal use of the forest. During the time period from 2002 to 2006 the forest in non-project areas was degraded with a percentage of nearly 16 per cent in the whole Bale Mountains (CF. F11 (STUDENT PROJECT F11) 2008). Considering the whole Bale Mountains region the aforementioned problems of a high population density and high dependency on forest products were not caused by the approach, but could also not be solved by it. The fact that logging in the areas of the WAJIB-blocks was no longer possible for locals who could not be integrated in one of the forest dweller associations led to a higher degradation of forest in the non-WAJIB areas (CF. F11 (STUDENT PROJECT F11) 2008). Furthermore, the analysis of the development of the forest cover indicates that the conflict between limited forest resources, the aim of forest conservation and the satisfaction of the growing need for forest products could not be solved entirely by the WAJIB-approach, but is partially shifted to areas which were not included in the IFMP.

A positive impact of the IFMP was the creation of awareness for the importance of the forest among the local inhabitants. Moreover, the practise of rehabilitation measures could be increased. WAJIB-members as well as inhabitants who are not included in a forest dweller association are aware of the importance of the maintenance of natural resources, and, thus, already implement rehabilitation measures (cf. F11 (STUDENT PROJECT F11) 2008).

In terms of its economic impacts the IFMP had some reasonable ideas and methods to improve the situation of the people in the Bale Mountains region. The introduction of income and training opportunities to sustain livelihoods was supported by the GTZ and other NGOs with the aim to offer alternatives to the high dependency on the forest through forest utilisation for basic needs fulfilment. The economic situation of the people integrated in the WAJIB -approach could be enhanced. For example, prices for wood products increased due to the exclusive right to use forest products. Contrary to this, people who were not integrated in a forest dweller association have severe problems to earn their livelihood (cf. F11 (STUDENT PROJECT F11) 2008). Their free access to forest products was limited by the IFMP and the measures of non-wood based alternative income sources was not that successful. Measures were partially not adequately adapted to the environmental, educational and financial situation and background of the locals.

With the implementation of the WAJIB -approach the way of life of those people changed. Becoming a WAJIB -member often included giving up traditional life and activities like pastoralism. They settled down and started living in a permanent home within the borders of a WAJIB. Nevertheless, the process of implementation was based on elements of well-known development strategies which emphasised the aspects of empowerment, participation and gender equality and therewith contributed to a broad acceptance of the IFMP amongst the forest dwellers (cf. F11 (STUDENT PROJECT F11) 2008).

In contrast to this success the implementation of the WAJIB -approach caused the separation of the local inhabitants in two different groups: the WAJIB -members and the non- WAJIB people. The former group is allowed to live in the forest, have rights and duties to use and manage the forest but the people belonging to latter one were excluded from the forest and the related activities to generate income. Depending on how long the family had been living in the forest, people had the opportunity to become a WAJIB -member (cf. F11 (STUDENT PROJECT F11) 2008). Especially one dominant clan, the Shedemma clan, was preferred within the procedure of choosing WAJIB -members because of its high influence in the area of the Bale Mountains (cf. POPP, 2005, p. 86).

The separation of the inhabitants led to severe conflicts between the different groups. The result of the clear separation between neighbours, relatives and friends was persistent jealousy on both sides. On the one hand the WAJIB members complain that they have no access to farmland outside the WAJIB any more. On the other hand outsiders of WAJIB criticise the exclusive rights of use regarding the forest. As a consequence of jealousy and

confrontations referred to illegal logging within the forest blocks, severe and partially violent conflicts came up in the area of Adaba-Dodola. This is probably the most urgent problem which has to be addressed in the region (cf. F11 (STUDENT PROJECT F11) 2008).

### *Review of the IFMP Strategies*

In order to assess the approach one can describe the original strategies of the IFMP and their achievements or failures. The three main strategies of the IFMP included the regulation of access to the forest, the reduction of pressure on the natural resources and the creation of non-wood based income opportunities which can make the forest profitable without harming it (cf. F11 (STUDENT PROJECT F11) 2008). Due to the separation into forest blocks with a specific number of legal dwellers, controlling the forest cover and use became easier, and within the WAJIB -blocks a rehabilitation of the forest cover could be observed. The problem of shifting deforestation to non-WAJIB areas was not addressed in the strategy. Furthermore, the problem of possibly arising social conflicts with regard to the separation of the locals was disregarded as well. Reducing pressure on the forest by planting trees, fast growing ones as well as indigenous trees, and supporting training in non-WAJIB areas failed. People who do not belong to a WAJIB suffer from their lack of access to the forest and the increased wood prices. This leads to illegal felling in the forest, especially in border areas of the blocks. Finally, the strategy of making forest profitable could be reached in some fields of action (e.g. eco-tourism), but failed in others as well due to a deficient number of beneficiaries, insufficient adaptation of measures to local conditions and an additional lack in the field of training and support (cf. F11 (STUDENT PROJECT F11) 2008).

### *Action Recommendations*

Based on the analysis of the ecological, economic and social situation in the Bale Mountains and the impacts of the IFMP on those aspects, action recommendations have been elaborated. The aim of these recommendations is to improve the WAJIB approach, to counteract negative developments and to adapt it to changed circumstances and conditions. The recommendations are distributed according to four central issues, namely forest condition, income generation (including agricultural activities, non-agriculture activities and forest utilisation), education/training and last but not least communication. The recommendations have to be considered as an integrative understanding of how to contribute to an improvement of the approach and in long-term to the conservation of the natural forest and its biodiversity in the Bale Mountains. While 23 action recommendations were created in total, an action plan embracing a selection of one recommendation for every central issue shall describe a priority list of short-term and medium-term measures.

In terms of communication a regular group discussion between WAJIB and non-WAJIB inhabitants in the area should work as an instrument of mediation and conflict resolution. Education and training should focus on rehabilitation measures but also on improving economic structures. For instance, higher quality products from the forest and the creation of value chains could enhance the local economy. The support of crop diversification and

alternative livestock should help to generate income without relying on forest products. The forest condition could be enhanced by additional afforestation measures, especially outside the WAJIB -borders where the forest cover decreased in the last years. Finally, a tourism-related measure could be the distribution of income from the entrance fee derived from eco-tourism because this would symbolise a union between WAJIB and non-WAJIB inhabitants and would therefore create more beneficiaries. This financial support to the communities could be spent on social and technical infrastructure in the region (cf. F11 (STUDENT PROJECT F11) 2008).

#### *Transferability of the IFMP to the Kakamega Forest, Kenya*

The primarily discussed concept of the WAJIB-approach in the Bale Mountains, Ethiopia is not exclusively bound to its unique biological, social, economic and political framework. The problem of forest overuse, rural poverty and population growth affects other regions as well. The Kakamega Forest in western Kenya is threatened in almost the same manner. This last remaining Kenyan rain forest is part of the biodiversity-rich Guineo-Congolea forest belt, enriched by contact with the mountainous forest of the Rift Valley escarpments. In difference to the Bale Mountains, the population around Kakamega Forest mainly inhabits small villages around the forest, whereas only one is located directly in the forest (cf. INTERVIEW KARIUKI). The forest suffers from similar problems like the Bale Mountains: commercial forest operations, farmland expansion, over-exploitation by local communities, gold prospecting, later declaration and excisions (cf. KENEA, FORTHCOMING, P.13-14). Forest products are basically used for firewood, charcoal and the construction of houses. Due to those activities the forest immensely declined since the 1970s (cf. KENEA, FORTHCOMING, P. 10). This deforestation can be traced back to the high population density and growth living in poverty around the forest. Trials to reduce the dependency on the forest's wood products failed, for example the top-down introduction of energy saving stoves with the aim of reducing the need for firewood (cf. F11 (STUDENT PROJECT F11) 2008). Contradictory to the illegal forest use, inhabitants bordering the forest established community based organisations as environmental communities to "protect the forest and manage it in a sustainable way" (GAESING, FORTHCOMING). By now the Kenyan authorities realised the importance of community participation and aspire the implementation of Participatory Forest Management (PFM) involving the communities bordering the forest. (cf. GAESING, FORTHCOMING).

Referring to the strategies of the IFMP and considering the different preconditions in the two areas of interest the group found that IFMP measures can inspire the forest protection in the Bale Mountains but certain adaptations would be necessary. In general, it is important to think of exclusive rights of use as one measure to involve local inhabitants in biodiversity protection and conservation. This can be seen as a powerful instrument to manage natural resources in a reconcilable way sustaining people's livelihoods. Another necessity for the Kakamega Forest is the creation and introduction of alternative income opportunities which do not come along with utilisation of the forest's natural resources.

## References

### **F11 (STUDENT PROJECT F11) 2008:**

Cremer Schulte, D.; Düvel, I.; Haenert, T.; Heinrich, J.; Kaboth, K.; Körner, P.; Neubacher, S.; Noack, S.; Reichert, A.; Sielker, F., 2008. Participatory Forest Management and the Improvement of Rural Livelihoods in East Africa – The Case Study of the Bale Mountains, Ethiopia and the Transferability to the Kakamega Forest, Kenya. Unpublished Final Report, Faculty of Spatial Planning, TU Dortmund University, Dortmund

Contact: d.cremer-schulte@web.de

### **FAO, 2005:**

FAO (2005). Food and Agriculture Organisation. Global Forest Resources Assessment 2005: Progress towards sustainable forest management. FAO Forestry paper 147. Retrieved on 2007/12/12, from:  
<http://www.fao.org/docrep/008/a0400e/a0400e00.htm>

### **HILL ET AL., 2008:**

Hill, Alexandra; Gaesing, Karin; Lindner, Christian; Weiss, Katrin, 2008. Ökotourismus und Waldschutz in Äthiopien. In: Wohnung und Gesundheit 9/08, Nr. 128, Verlag Institut für Baubiologie u. Ökologie, Neubeuern

### **GAESING, FORTHCOMING:**

Gaesing, Karin, (forthcoming): Participatory land use planning for the conservation of biodiversity in Kenya. In: Hill, Alexandra; Weiss, Katrin (Eds.) (forthcoming). Planning with Obstacles – 30 Years of Spatial Planning in Crisis Regions and Developing Countries, (Festschrift dedicated to Prof. Dr. Volker Kreibich und Prof. Dr. Günter Kroes), Dortmunder Beiträge zur Raumplanung, Dortmund

### **KENEA, FORTHCOMING:**

Kenea, Wondimu (forthcoming). Rural Livelihood, Land Management and Biodiversity – Participatory Decision Making for Biodiversity Conservation – The Case of Kakamega Forest in Western Kenya, PhD Thesis, TU Dortmund University, Dortmund

### **POPP, 2005:**

Popp, Wossen Marion (2005). Conflicting Practices of Environment Construction in Bale, Ethiopia. Berliner Beiträge zur Ethnologie, Band 9. Berlin: Weissensee Verlag Berlin

### **INTERVIEW IRWIN, INTERVIEW TADESSE, INTERVIEW KARIUKI**

These experts have been interviewed during the fieldtrip in Ethiopia in February/March 2008. The interview summaries are listed in the final report of the student project.

### **WEBSITE NATIONAL GEOGRAPHIC**

website National Geographic. Retrieved on 2007/11/04, from:  
<http://www.nationalgeographic.com/eye/deforestation/science.html>

### **Acknowledgements**

We would like to thank our supervisor team consisting of Alexandra Hill, Dr. Katrin Weiß and Christian Lindner, who helped the group to cope with upcoming problems and who really made the whole project possible. A special thank goes to our fourth supervisor Dr. Karin Gaesing, who enabled us to get in contact with the GTZ in Ethiopia and considerably contributed to the success of the excursion.