

# Improving the Implementation of Environmental Impact Assessment Follow-up



**E**nvironmental impact assessment (EIA) is a process that attempts to identify, predict and mitigate ecological and social impacts of development activities. It also helps to assist decision-making and to achieve sustainable development. The effectiveness of EIA depends on several factors. The quality of EIA guidelines, EIA reports and implementation and follow-up of EIA recommendations are of particular importance (Arebo 2005). According to the Australian Environmental Protection Agency (EPA Australia 1995), EIA follow-up is needed because relatively little attention is paid to the actual effects

arising from project construction and operation. Without some form of systematic follow-up to decision-making, EIA can simply become a paper chase to secure a development permit, rather than a meaningful exercise in environmental management to bring about real environmental benefits. Implementation of EIA recommendations is not done frequently (Noble and Storey 2004). This is a recognized problem not only in developing countries, but also in many industrial countries. Successful implementation of EIA recommendations requires that policies and institutions be strengthened to facilitate adequate follow-up.

The aim of this study was to determine the critical factors affecting the successful implementation of EIA mitigation measures developed to minimize environmental and social impacts of the Koga irrigation and watershed management project in the district of Mecha, Amhara National Regional State, Ethiopia. This scheme foresees the development of 7,000 ha of smallholder dry season irrigation, supplied with water from a reservoir constructed on the Gilgel Abbay River. questions addressed were:

## The research

1. To what extent have EIA-recommended mitigation measures been implemented by the project proponent?
2. How do regulatory bodies ensure implementation of EIA-recommended mitigation measures?
3. How and to what extent did the public participate in the EIA process?
4. What are the likely downstream impacts of the project and to what extent where they considered?

In particular, it studied the extent to which EIA-recommended mitigation measures have been implemented by the project proponent. It looked into how regulatory bodies ensure the

**Generally, EIA procedures in Ethiopia are carefully considered and result in well-formulated environmental impact statements and plans. The implementation of proposed mitigation measures and monitoring of actual environmental impacts, however, form a weak link in the EIA process. As a result, projects still cause negative environmental and social impacts. This report is on the study conducted to follow up EIA-recommended mitigation measures in the Koga irrigation and watershed management project.**

implementation of EIA-recommended mitigation measures. and the extent to which the public participated in the EIA process.

## Methods

The research method comprised a literature review and fieldwork. The literature review centered on issues of sustainability and links to EIA and the Millennium Development Goals (MDGs) as well as EIA experiences in Ethiopia and other countries. Project-specific reports (i.e., the Environmental Management Plan [EMP], accomplishment reports, monitoring reports and permit conditions) were also reviewed. For the fieldwork, semistructured and structured questionnaires were used. This enabled the perceptions and opinions of specialists from the project and the Ethiopian Environmental Protection Agency [EPA], the communities (located upstream and downstream of the dam) and management bodies (from the project, EPA, and other groups) to be gathered. The extent of public participation in the project was assessed using the Aarhus practice evaluation criteria for public participation, adopted from the European convention on public participation (Hartley and Wood 2004). Finally, observations were made by visiting the site to independently assess the progress made in implementing the EIA recommendations. Analyses conducted included comparison of the perceptions of different stakeholders on the accomplishment of the project with the EMP and the accomplishment reports.

## Results

Most of the documents (Acres and Shawel 1995; WAPCO and WWDSE 2005; KIWMaP 2006; EPLAUA 2006; MacDonald 2004a, b, c, d; ADF 2000, 2001) fulfilled requirements and provided satisfactory information on the probable impacts of the Koga project, as well as mitigation measures to



minimize environmental problems. Predicted impacts considered in the EMP included impacts on water resources, water quality, air, noise, land, ecology, command area development or induced development, and demographics and socio-economics. However, there was no mention of the likely impacts of the dam on downstream flooding, fisheries, and riparian vegetation. A review of the EMP indicated some limitations in the planning process, including the lack of the following mechanisms/components: public consultation, evaluation of different project scenarios and possible alternatives and a monitoring plan for erosion and siltation. A review of the project progress reports indicated that, of the 20 major plans identified in the EMP for implementation, only two activities (planting forest seedlings and livestock development) have progressed satisfactorily. Watershed management measures, public health, and resettlement/compensation payments) were progressing unsatisfactorily. The remaining 15 activities were either moribund or not reported.

## Perception of the farming community

Interviews conducted with farmers focused on public participation and implementation of mitigation measures. Farmers were asked to comment on the likely impacts of the scheme, what they knew about the EIA, and more generally, how decisions relating to the scheme were communicated to them. Farmers were asked if the project material was presented in a way that was understandable to them. We found that many farmers recognize the possible environmental impacts that could affect their livelihoods. Downstream communities expressed concern about adverse impacts on drinking water, fisheries, traditional irrigation, forestry products, and firewood. Nineteen percent of the interviewees agreed that communication criteria for the project were completely fulfilled, 14% nearly fulfilled, and 26% partially fulfilled. The remaining 41% said that the project did not provide project materials in a clear format, implying that communication



criteria were not fulfilled. Thus nearly half of the interviewed people living in the catchment did not have a clear understanding of the project documents or the project itself, based on the materials provided by the project team. Moreover, neither downstream nor upstream farmers felt that they had participated in decision-making related to the project. These findings confirm the result of the stakeholder analysis indicating that decisions pertaining to the construction of the dam have been made with little public consultation and with insufficient explanation of intended project objectives (Gebre *et al.* 2007).

## Perception of specialists

The interviews conducted with specialists focused on implementation of EIA recommendations and the EMP. The results obtained from the interviews indicated that 70% of the specialists thought that the environmental mitigation measures recommended in the EIA were not being adequately implemented. In addition, 90% of the specialists thought that the EMP was constrained by weaknesses in institutional arrangements, time schedules, finance, limited integration of the EMP within the overall project schedule and limited capacity of project staff.

## Perception of management bodies

The interviews with staff from the management bodies focused on the institutional arrangements and regulations to ensure that EIA-recommended activities are undertaken. We found that the Koga project has no official permit, as required by the national environmental legislation. Instead, the African Development Bank (the donor funding the scheme) required that an EIA be undertaken and then approved the EIA documents. The African Development Bank also prepared its own EIA summary (ADF 2000). There are several national institutions involved in the Koga project:

- ◆ The Amhara Regional Water Resources Bureau is responsible for hosting the project management unit that coordinates the construction and implementation of the project.
- ◆ The Amhara Regional Agriculture Bureau is responsible for implementing the watershed management component.
- ◆ The Environmental Protection, Land Administration and Use Authority (EPLAUA) is responsible for overseeing environmental aspects of the project and is also responsible for land redistribution and compensation.



Staff interviewed in these institutions either knew nothing or stated that they had 'no opinion' about the lack of an official permit. There were no environmental specialists in either the scheme management team or among the various consultants employed by them. Consequently, the project has not undertaken any formal monitoring of environmental impacts. Furthermore, the EPLAUA has only undertaken surveillance/monitoring once in the 4 years since the project commenced. There was no regular monitoring of any environmental impacts, and recommendations for monitoring cited in the EIA were not being followed. For various reasons, including lack of capacity and financial constraints, the institutions tasked with ensuring that the EIA recommendations be implemented are not fulfilling their responsibilities.

## Challenges

The primary objective of EIA follow-up activities should be to ensure that project managers are able to realize intended project outcomes. As this study has shown, the effectiveness of the follow-up in the Koga scheme is limited by weaknesses in several key areas (Figure 1). Constraints arise due to technical reasons as well as limitations in human, financial and technical capacity.

- ◆ Lack of monitoring, which means that managers are unable to make informed decisions
- ◆ Lack of relevant expertise in the project management team
- ◆ A weak regulatory and institutional framework

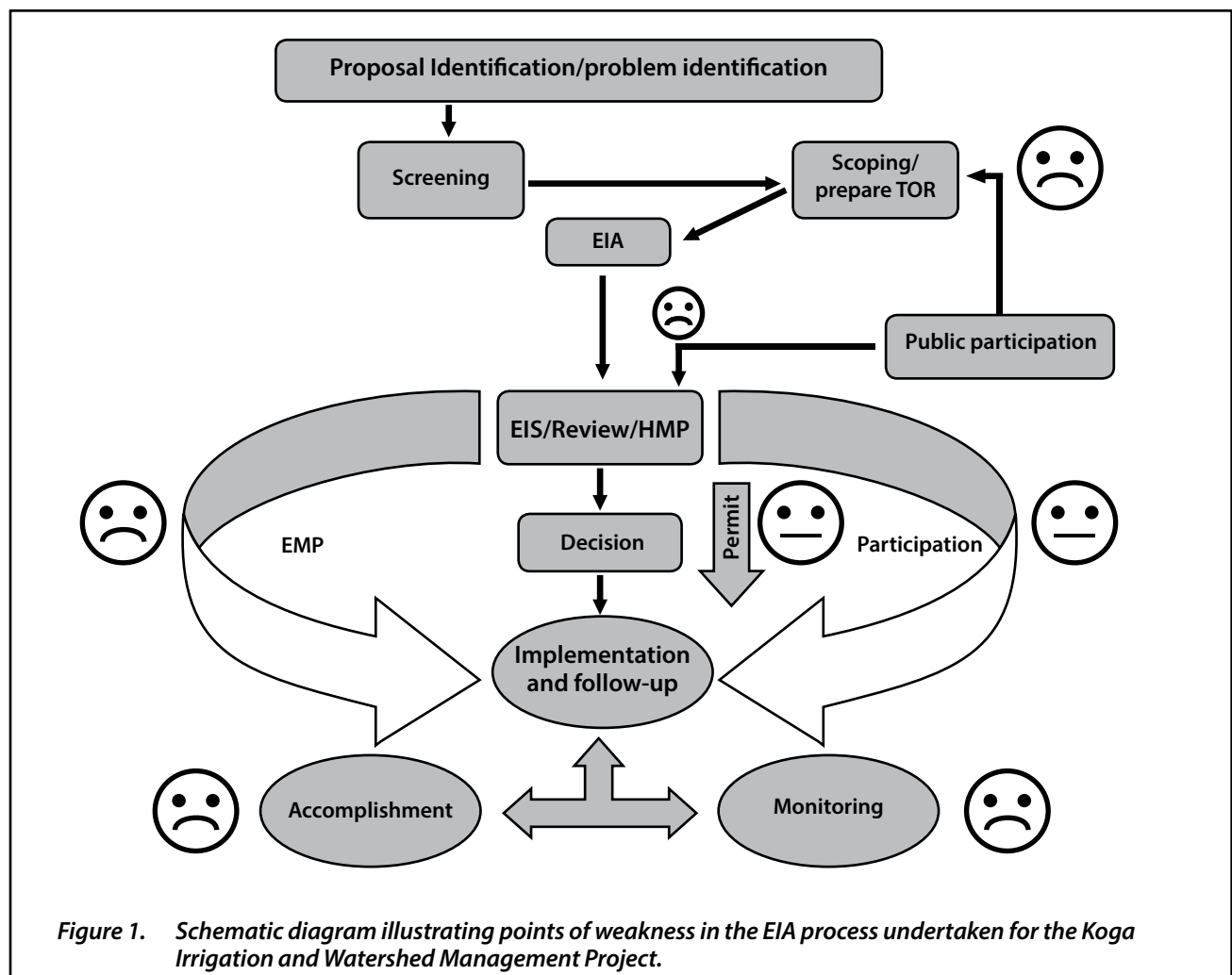


Figure 1. Schematic diagram illustrating points of weakness in the EIA process undertaken for the Koga Irrigation and Watershed Management Project.

- ◆ Lack of public participation and the absence of a strong civil society to ensure that EIA recommendations are implemented

As a result of these limitations, it is not possible to determine the long-term consequences of cumulative environmental impacts. It is possible that the sustainability of the project could be undermined.

- ◆ The finances required to implement EIA recommendations should be identified and ringfenced at the commencement of projects. This should include funds required by the relevant regulatory bodies to monitor compliance.
- ◆ Appropriate incentives and legal mechanisms need to be developed to encourage compliance with EIA recommendations.

## Recommendations

It is recognized that all development projects have adverse biophysical consequences. Ideally, these will be kept to a minimum through the proper implementation of recommendations from EIAs. Based on the findings of the study, the following recommendations are made to improve the follow-up of EIA implementation in development projects in Ethiopia:

- ◆ Enforcing certification mechanisms provides a critical first step in the EIA follow-up process, and is essential if project proponents are to take their environmental responsibilities seriously.
- ◆ Implementation of EIA follow-up measures would be greatly improved by clearly defining and dividing tasks and responsibilities between those organizations that are supposed to implement them.
- ◆ Mechanisms are required to strengthen public participation in project decision-making processes. This is essential to ensure cooperation and consensus building between different stakeholders.
- ◆ Project management teams need to take environmental concerns seriously. It should be mandatory that they include staff with relevant environmental expertise and the knowledge required to implement EIA recommendations and monitoring requirements.

## Conclusion

The EIA documents, which were prepared during the feasibility study, were generally satisfactory. One weakness, however, in the EIA was the lack of a proper estimation of the environmental flow releases downstream, of the dam. Many of the activities planned in the EIA were not implemented in a satisfactory manner. Lack of consultation and public participation were major constraints to the implementation of EIA recommendations. To improve the sustainability of the project, attention needs to be given to improving public participation, regulatory activities, and institutional arrangements. The Koga scheme is the first in Ethiopia to combine irrigation and watershed management within a project that will ultimately be managed by local farmers. Consequently, it is widely perceived to be a learning experience that can be used to inform future irrigation development in the country. To maximize the benefits to be gained from future development projects (not only irrigation schemes), it is essential that the lessons learned are acted upon.

### Contact Person

Matthew McCartney (m.mccartney@cgiar.org), Wubneh Abebe, Wim Douven, Jan Leentvaar

### Partner Organizations

Addis Ababa University, Ethiopia  
Amhara National Regional State, Bureau of Agriculture, Ethiopia  
International Water Management Institute  
Southern Water, South Africa

### Key References

McCartney, M.P. 2009. Improved planning of large dam operation: Using decision support systems to optimize livelihood benefits, safeguard health and protect the environment. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food.  
<http://hdl.handle.net/10568/3926>

Abebe, W.B., M. McCartney, W.J.A.M. Douven and J. Leentvaar 2008. Environmental impact assessment follow-up in the Koga Irrigation Project, Ethiopia. In: *Fighting poverty through sustainable water use: Proceedings of the CGIAR Challenge Program on Water and Food 2nd International Forum on Water and Food*, Vol.3, 10-14 November 2008, Addis Ababa, Ethiopia, eds. E. Humphreys et al.; 52-55. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food.

Tags: PN36: Improved Livelihoods in Dam Management

### Bibliography

- Acres, S. 1995. *Feasibility study of the Birr and Koga irrigation project, Koga catchments and irrigation studies, Annexes Q-T*.
- ADF 2000. *Summary Environmental Impact Assessment, Koga Irrigation and Watershed Management Project*.
- ADF 2001. *Koga Irrigation and Watershed Management Project: Appraisal Report*.
- Arebo, S.G. 2005. *Improving Environmental Impact Assessment for Enhancing Sustainable Water Resources Developments in Ethiopia*. MSC thesis, UNESCO-IHE Institute of Water Education, Delft.
- EPA Australia 1995. *International Study on the Effectiveness of Environmental Assessment*. Canberra, Australia: Environment Protection Agency.
- EPLAUA 2006. *Koga Irrigation and Watershed Management Project Field Monitoring Report*. EPLAUA, Environmental Protection Study Policy and Control Department. Bahir Dar, Ethiopia.
- Federal Democratic Republic of Ethiopia Environmental Protection Authority 2000. *Environmental impact assessment guideline document*. Addis Ababa, Ethiopia.
- Gebre, A., D. Getachew and M. McCartney 2007. *Stakeholder analysis of the Koga Irrigation and Watershed Management Project*. Report for the International Water Management Institute.
- Hartley, N. and C. Wood 2004. Public participation in environmental impact assessment implementing the Aarhus Convention. *Environmental Impact Assessment Review*, **25**, 319- 40.

## Bibliography

KIWMAp. 2006. *Koga Irrigation and Watershed Management Project: Progress of watershed management project component implementation*. Preliminary Draft Report.

MacDonald, M. 2004a. *Koga Irrigation and Watershed Management Project: Interim Report*.

MacDonald, M. 2004b. *Koga Irrigation and Watershed Management Project: Hydrology Factual Report*.

MacDonald, M. 2006c. *Koga irrigation and watershed management project: Dam Design Final Report*.

MacDonald, M. 2006d. *Koga Dam and Irrigation Project: Design Final Report. Part 2: Irrigation and Drainage*.

Noble, B., and K. Storey. 2004. *Towards increasing the utility of follow-up in Canadian EIA*. *Environmental Impact Assessment Review*, **25**, 163-80.

WAPCO and WWDSE 2005. *Environmental monitoring and resettlement plan for Koga irrigation and watershed management project*, Volume I and II (Draft).