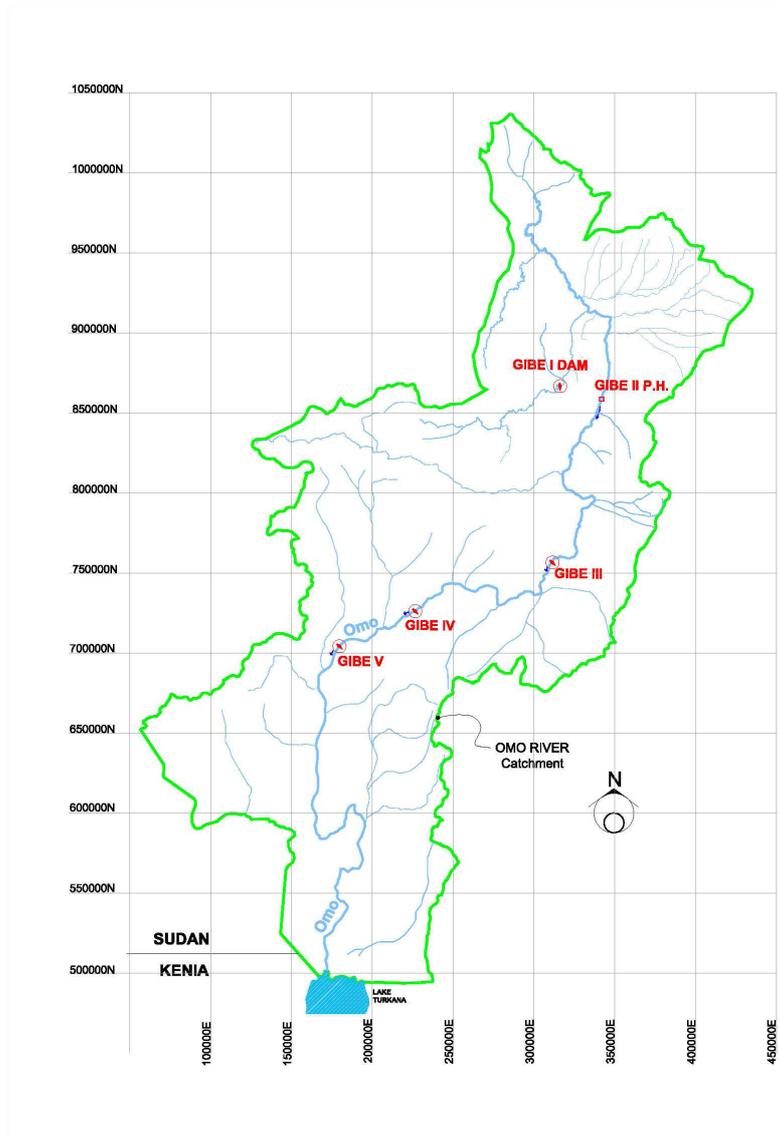


THE DOWNSTREAM IMPACT¹

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The planned Omo-Gibe hydropower cascade

(From *Gibe III Hydroelectric Project: Environmental and Social Impact Assessment*,
CESI – Mid-day International Consulting Engineers, 2009, p. 46)

¹ This is a revised version of a talk given at the School of Oriental and African Studies, University of London, during a meeting on the Gibe III Dam organised by the Royal Africa Society, 11/10/10.

I want to do three things:

- explain why the dam threatens to destroy the livelihoods of the downstream population²;
- express serious concerns about the measures currently proposed to obviate this threat; and
- put the dam into the global context of the impact on local people of large-scale infra-structural development projects.

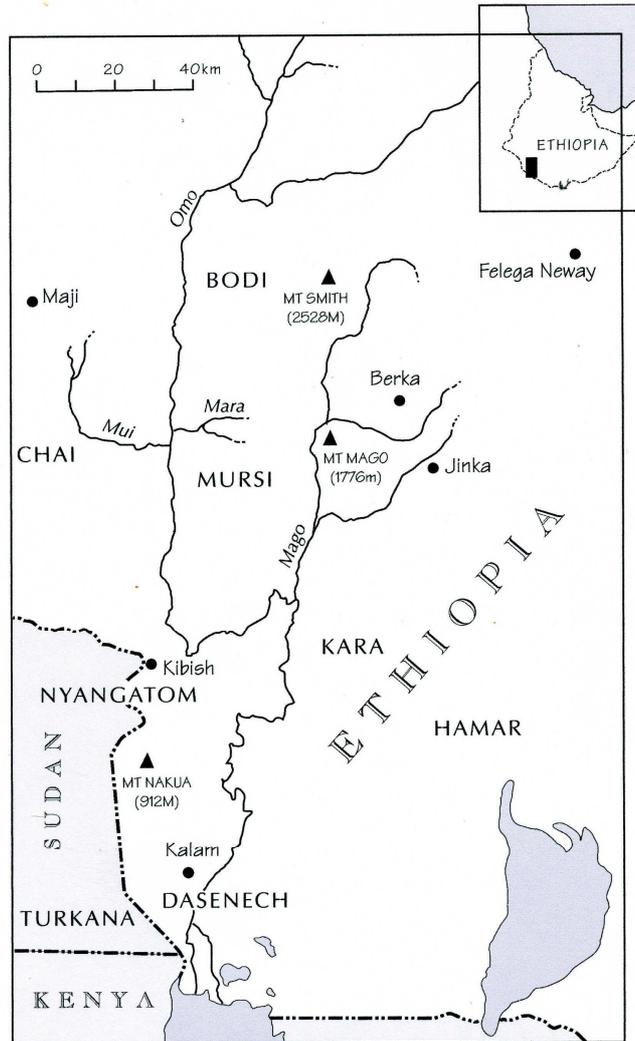
Downstream livelihoods

Below the dam, the Omo flows for around 200 km. before it enters its lower basin, where it begins to flow through a fairly well watered-savanna landscape. The meanders here are not very extensive but further south they become much more pronounced and the surrounding grass plains become more arid. At the river's outlet, in Lake Turkana, an extensive delta has been built up by siltation.

The annual flood is the single most important and valuable feature of the river for the population of the lower basin. Between June and August, the river level rises dramatically as a result of heavy rain falling over its highland catchment area. It reaches its maximum level in August and then recedes fairly rapidly, reaching its lowest level in December and January. In the northern part of the lower basin, where the meanders are not so extensive, only the immediate banks of the river are flooded. Further south, much larger areas - the inner bends of meanders, oxbow lakes and back swamps, large areas of low-lying grassland and the entirety of the delta - are flooded.

Eight different groups live in the lower Omo, speaking six different languages: Bodi, Chai (Suri), Mursi, Kwegu, Nyangatom, Kara, Daasanach and Hamar. All but two combine agriculture with pastoralism, and none could survive without 'flood-retreat' or 'recession' agriculture. Planting begins in September and October as the flood recedes and the harvest comes in December and January. Flood cultivation has two characteristics which make it the most valuable agricultural resource available to the people of the lower Omo. First, it is reliable, because it depends on the highland rainfall rather than on the erratic local rains. Second, the same plots can be cultivated

² 'Downstream population' here refers to people living in the lower Omo Valley, north of the border with Kenya. But these are not the only downstream people likely to be affected by the dam, whether directly or indirectly. By regulating the flow of the Omo, the dam will make possible large-scale irrigation schemes in its lower basin. On 25 January 2011, plans were announced by the Ethiopian Prime Minister, Meles Zenawi, to convert 150,000 ha of grazing land in the lower Omo to irrigated sugar cane production. This is likely to have a significant impact on the level of Lake Turkana, and therefore on the livelihoods of around 500,000 Kenyans who depend on the Lake waters for fishing and pastoralism. (<http://www.afrik-news.com/article18836.html>; Avery, 2010; Johnston, 2010).



Peoples of the Lower Omo Valley

year after year because their fertility is constantly renewed by the annual deposition of flood silts. The flood is equally vital for the pastoral activities of those who live just north of the Lake, especially the Daasanach. Here, the flooding of low-lying grassland makes extensive areas of cultivable land available and opens up new grazing areas just when they are needed most, at the driest time of the year – December to February.

Not surprisingly, then, years of high floods are remembered as years of plenty by all the peoples of the lower Omo. Despite this, much is made in the environmental impact assessments for the Gibe 3 dam of the benefits the dam will supposedly bring to the downstream population in the form of ‘flood protection’ (CESI and Mid-Day International, 2009: 187). Whether deliberately or not, the impression is thereby given that the lower Omo is regularly affected by floods which are seriously destructive of life and property. In a document produced by the Gibe 3 Project Office, written in response to the criticisms of anti-dam campaigners, this claim is made explicitly, as though it were simply common knowledge.

The seasonal devastating flood of Omo River is common in the downstream area. The pastoral communities have lost their lives and animals for several times [sic]' (Getaneh, nd. p. 5).

Anyone who has first hand experience of the lower Omo and is familiar with the livelihood strategies of its people will know that such statements are misleading. The only flood ever mentioned in support of them is that of 2006, which is said to have caused the deaths of 'hundreds' of people and 'thousands' of cattle. These figures are certainly supported by the 'Flash Appeal' to donors, issued by the regional government, in which the 2006 flood is said to have been the worst for 100 years and to have caused the death of 364 people (SNNPRS, 2006, p. 5). Surprisingly, however, we have not been able to reconcile these figures with first hand accounts we were given during field enquiries in 2008 and 2009 amongst Daasanach and Nyangatom³, nor with information received from a colleague who was in the area during the 2006 flood⁴. No Daasanach or Nyangatom we have spoken to was able to name anyone who had been drowned in this or any other flood, though it was agreed that the 2006 flood had peaked at a highly unexpected time, that many cattle were drowned and grain stores destroyed, and that some men (around ten at most) had been drowned while trying to lead stranded cattle to safety at night. Why we have been unable to find evidence corroborating the human death toll reported by the administration remains a mystery.

About 90,000 people are estimated to depend on flood cultivation along the Omo. This number is at least doubled if we add those who depend on the flood for their pastoral activities, and those living further afield, like the Hamar and Arbore (Hor) who regularly rely on sorghum exported from the Omo delta. In good years, grain is exported from the delta not only to neighbouring groups, but also to urban centres such as Moyale and Arba Minch. And finally, even in the northern part of the lower basin, flood cultivation is not an optional extra, even though it has to be combined here with rain-fed cultivation and pastoralism. None of these is sufficient in itself, or in combination with one of the other two, but together they make possible a viable household economy.

I think I have said enough to explain why the flood is vital to the livelihoods of the people of the lower Omo. Once the dam is in operation, however, river flow will be so regulated that there will be only a small difference between its wet season and dry season levels. The flood will be eliminated.

The controlled flood

The environmental impact assessment (EIA) for the dam was completed in 2006, the same year in which construction began. No mention was made in this document of the impact of the dam on the population and environment of the lower Omo. In January

³ Since 2007 I have been engaged with colleagues at the African Studies Centre, University of Oxford, the Institute of Earth Sciences, University of Aberystwyth and the Institute of Earth Sciences, Addis Ababa University, in a study of environmental change in the lower Omo Valley, funded by the Arts and Humanities Research Council of the United Kingdom, under its Landscape and Environment Programme (Grant No. A/H E510590/1).

⁴ Toru Sagawa, personal communication, 16 March 2009.

2009 a revised EIA, now entitled *Environmental and Social Impact Assessment* (ESIA) (CESI & Mid-Day, 2009), was produced, together with a third report, subtitled *Additional Study of Downstream Impacts* (henceforth ‘Additional Study’), which dealt specifically with the lower Omo (Agriconsulting & Mid-Day, 2009). The main measure now proposed to mitigate the impact of reduced river flow on the livelihood systems of the downstream population was the annual release of a ‘controlled flood’, over a ten day period in late August or September. It was claimed that this would compensate for all ‘adverse effects’ of reduced river flow and bring more benefits besides (CESI and Mid-Day, 2009, p. 231). Unfortunately, there are reasons to be doubtful about this claim.

Managed releases from dams are a relatively new and untried method for sustaining floodplain ecosystems and involve a high degree of technical and social complexity (Acreman, 2000). This complexity is not acknowledged in the revised and additional impact assessments, which treat the controlled flood as though it were an entirely straightforward procedure. In the few pages devoted to it in the Additional Study, no mention is made of the problems that have been encountered elsewhere with controlled floods, such as how to flush sediment, vital for downstream cultivation, through the dam. (Acreman op. cit.: 20).

One crucial lesson from experience elsewhere, which seems to have been ignored in this case, is that those whose livelihoods will be most dependent on the controlled flood should be informed and consulted from the very start of the planning process. In the section devoted to the controlled flood in the Additional Study, no reference is made to discussions with local people, the only ‘site visit’ mentioned being a one-day helicopter flight in July, 2008 ‘by a team of river geomorphologists and an expert in Omo Valley agriculture’ (Agriconsulting and Mid-Day International, 2009: 168).⁵

Another problem is the inevitable conflict of interest that will arise between the use of water from the reservoir, on the one hand to produce electricity and, on the other, to create a controlled flood to sustain the subsistence agriculture of the downstream population. This is because the rate at which water must pass through the dam to create a flood exceeds that at which it can pass through the turbines. The resultant ‘spillage’ will represent a cost in lost electricity production. No attempt was made to estimate this cost in the impact assessments, no mention was made of the potential conflict of interest and no suggestions were therefore made as to how it might be resolved.

Doubts about the controlled flood are also raised by an independent review of the Gibe 3 environmental impact assessments, made by the French consulting firm SOGREAH on behalf of the European Investment Bank. According to the authors of this review, ‘The adequacy of the controlled flood in its present form appears questionable’ (SOGREAH, 2010:73). Indeed, so questionable did they find it that they proposed dropping it altogether, in favour of an alternative ‘mitigation measure’, namely raising the downstream river level for irrigation purposes by means of a weir, located close to the Omo delta. Various technical reasons are given for this

⁵ It should also be noted that no consideration is given, in the Additional Study, to the implications for the controlled flood of the two dams that are planned downstream of Gibe III, namely Gibe IV and V.

judgement, but the most telling argument concerns the cost of the controlled flood in lost electricity production. This is calculated at between 7.8 and 10.8m USD annually, leading to the unsurprising conclusion that conflicts between electricity production and the creation of a controlled flood ‘may quickly emerge and it is probable that priority will not be given to recession agriculture’ (op. cit.: 85).

The final section of this report begins with the observation that ‘Overall the ESIA has planned a solution [to the problem of downstream mitigation] without fully qualifying the problem and without studying its effectiveness’ (122). The authors go on to recommend ‘two further fields of investigation which have not been carried out so far’, namely a hydrological and a socio-economic assessment of the ‘cumulative effects resulting from the planned cascade of hydropower developments along the river’, including the planned Gibe IV and Gibe V (123). These recommendations will not, however, be put into effect by the EIB, which commissioned the report when it was considering an application for a loan from the Ethiopian government to help finance the dam. It has since decided not to proceed with a loan and has cancelled its plans for further studies to make good gaps in the existing impact assessments. This decision followed the announcement of a 450 million USD loan from the Industrial and Commercial Bank of China to cover the cost of the purchase and installation of the dam turbines.

The summary way in which the controlled flood is dealt with in the ESIA and Additional Study becomes less surprising in the light of what is said about it in a press release issued in March 2010 by the dam builder, Salini Costruttori (2010). This was prompted by criticisms of the dam made by Survival International but it is mainly notable for the following observation, made almost in passing, about the controlled flood.

This will enable the local people to have a transitory period of a suitable duration when it is deemed opportune to switch from flood-retreat agriculture to more modern forms of agriculture.

One can almost hear the cat being let out of the bag: the controlled flood is not, and possibly never has been seen by the dam builder as a permanent mitigating measure for downstream impacts. Compare the above statement with the following, from the ESIA:

The planned release from the reservoir intended to artificially induce flooding of both the river banks and floodplains, as well as the provisions for a minimum environmental flow, will mitigate and full [sic] compensate all adverse effects (CESI and Mid-Day, 2009, p. 231).

There can be no doubt that the authors of the ESIA intended their readers to understand that they were recommending the use of a controlled flood as a permanent means of sustaining the downstream ecosystem and the economies of its population. And since they made no suggestion that the controlled flood would ever be phased out, they also did not discuss how ‘more modern forms of agriculture’ would be phased in, as the mainstay of the agricultural production of the people of the lower Omo.

It is true that ‘small-holder irrigation schemes’ are mentioned in the ESIA, but only as one of several ‘additional mitigation measures’ to be made use of if the controlled flood is ‘partially withheld due to *unforeseen* circumstances’ (Agriconsulting S.p.A-Mid-Day, 2009: 175, emphasis added). It is made clear, furthermore, that these ‘additional measures’ would be the responsibility of the Ethiopian Electric Power Corporation and the Ethiopian government, not of the project itself. Only the briefest indication is given of how the small-holder irrigation schemes would be designed, managed and financed, and of how local people would be assisted to make the difficult transition from flood retreat cultivation (op. cit.: 181-182; 226).

In short, and thanks to the Salini press release of March 2010, we now know that the controlled flood is not intended to be the ‘main mitigating measure’ it was described as in the impact assessments.⁶ We also know that the dam builders and the Ethiopian government see no need for the kind of detailed, evidence-based and properly funded downstream mitigation plan, the lack of which was identified in the SOGREAH report as a major gap in the Gibe 3 documentation and which one would nowadays expect to be a standard feature of any big-dam building project.

As already noted, plans have now been announced to convert 150,000 ha of grazing land in the lower Omo to irrigated sugar cane production, over the next five years. The possibility that commercial plantations would be set up in the lower basin as a result of the dam was mentioned in the impact assessments, but no consideration was given to the effect that the abstraction of water from the Omo for large-scale irrigation schemes would have on the level of Lake Turkana⁷. Nor was it considered how the loss of thousands of hectares of grazing land would affect the pastoral economies of the lower Omo. It is usually stressed that commercial plantations will create many new jobs for local residents, but experience elsewhere suggests that, unless steps are taken to discriminate positively in their favour, they will be at a great disadvantage when competing for jobs with migrant workers from the highlands.⁸

What then is the future likely to hold for the people of the lower Omo, once the dam is in operation? The most likely outcome, on presently available evidence, is that most will end up depending heavily on food aid, supplemented by whatever they can earn from casual labour on plantations or perhaps from selling their photographs to

⁶ Although I have seen no written confirmation of this from the Gibe 3 Project Office, it was confirmed verbally at meetings with the Minister of Water and Energy, Alemayehu Tegene, and his staff, and with the CEO of the Ethiopian Electric Power Corporation, Meheret Debebe, on 6 and 7 December 2010 respectively.

⁷ This issue is considered by Sean Avery, in a report prepared for the African Development Bank (2010). He estimates that large-scale irrigation provision in the lower Omo could lead, in the most extreme case, to a 40 metre reduction in the level of Lake Turkana, causing it to divide into two lakes, one of which would disappear. In a report on the impact of Gibe III on the population living around Lake Turkana, made on behalf of USAID, Leslie Johnson estimates that 500,000 people depend on the lake for pastoralism and fishing (Johnson, 2010).

⁸ See for example Kloos (1982) on irrigated farms in the Awash Valley: ‘Migrant farm labourers from the Ethiopian highlands greatly outnumbered the indigenous populations on all irrigated farms....The emphasis on cotton and sugar cane production with limited cultivation of maize and vegetables for the resident farm labour populations precluded the distribution of locally grown food to destitute pastoralists and led to the establishment of famine relief stations near most farms’ (p. 32).

tourists. In other words, they will be locked further into poverty rather than lifted out of it, while their former grazing areas are taken over, without compensation, for commercial plantations.

The global context

Some might argue, apparently pragmatically, that the impoverishment of a relatively small number of people is a 'price worth paying' for the benefits that a large hydroelectric dam can bring to a whole nation. I therefore think it is worth pointing out, by way of conclusion, that the 'price worth paying' argument does not look half so pragmatic when it is seen in a global context, and in the light of the growing international movement for civil and human rights.

First, there can be no doubting the important part played by dams, for both hydropower and irrigation, in boosting economic growth in many developing countries. At a conference I recently attended in The Hague, on development-caused forced displacement, a Chinese speaker gave us a startling statistic: in the fifty years between 1949 and 1999, the number of dam reservoirs in China increased from 22 to 84,000. There can be little doubt that China's success in lifting a large part of its population out of poverty over the last half-century would not have been achieved without dams.

But second, the number of people displaced each year by dams - and other infra-structural projects, such as roads, which displaces even more people than dams - is huge. The most recent global estimate is 15 million per year, or 300 million over twenty years (Cernea and Mathur, 2008: 20). The number of people displaced over the past fifty years in China is put at 70 million (*loc. cit.*) and in India at 50 million (Roy, 1999). If we were to add people who were not physically displaced from their homes but who lost access to land and other resources as a result of development projects, the numbers would undoubtedly increase dramatically.

Third, if there are three propositions about which there is no disagreement in the extensive literature on development-caused displacement, they are, first, that the poorest and most vulnerable members of a country's population are disproportionately affected by it; second, that most of those affected become even poorer as a result; and third, that this pattern has proved extraordinarily difficult to reverse. Success stories in this business are few and far between.

This is not an argument for abandoning a project like Gibe 3, any more than it is an argument for abandoning road building. It is, however, an argument for seeing Gibe 3 as a spectacular case of one of the most important and pressing problems in world development today. Namely, how to ensure that development projects which displace people and/or deny them access to land and resources, are turned into genuine development opportunities for the very same people whose involuntary sacrifices made the projects possible in the first place. Although this is fundamentally an ethical question, the growing strength and effectiveness of the international human rights movement gives it a pragmatic twist. In the case of Gibe 3, if Africa's biggest dam becomes yet another 'disgracing stain on development itself' (Cernea, 2008, 1),

Ethiopia's ambitious energy production plans, which depend so heavily on hydropower, will be put increasingly at risk.

The filling of the Gibe 3 reservoir is expected to begin in June 2012 and the first of its ten turbines to begin operation in September 2013⁹. No time should be lost, therefore, in planning a comprehensive regional mitigation plan, targeted specifically at the affected groups both in the lower Omo and northern Kenya, and with the aim of ensuring that the world-wide pattern of increased impoverishment for those affected by large dam projects is not repeated in this case.

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⁹ Azeb Asnake, Gibe 3 Project Manager, personal communication, 10/12/10.

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