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Forests and timber trade in southeast Tanzania: What will be the legacy of Mkapa Bridge?

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The completion of the *Mkapa Bridge* across the Rufiji River in Tanzania has been heralded as not just a major engineering success for the African subcontinent but also a great step for national development. However, The President, his Excellency Benjamin Mkapa, highlighted environmental concerns and the need for caution at the official opening in Ikwiriri town, 2nd August 2003: '*I would also like to caution you early that completion of the Rufiji bridge may accelerate environmental degradation, especially smuggling of our natural resources. Because of the reliable means of transport, poachers may be tempted to enter our protected areas with the aim of poaching trophies, uncontrolled charcoal production and timber harvesting with disregard to laws and principles of sustainable utilization*' (unofficial translation).

Concerned about the increasing evidence of woodland clearance and degradation in Rufiji District and the vulnerability of people living in the southeast of Tanzania, TRAFFIC East/Southern Africa has been monitoring the timber trade and associated socio-economic factors since 2001. This article aims to highlight some of the major concerns, some recent positive developments and further recommendations.

In August 2003, the *Mkapa Bridge* was officially opened, the longest bridge of its kind in east and southern Africa and seen by many as a catalyst for accelerated development in Tanzania south of the Rufiji River. Previously inaccessible during seasonal flooding of the Rufiji delta, southeast Tanzania has one of the highest levels of poverty in Tanzania, so this long awaited development comes at a critical time. From a conservation perspective, relative isolation has helped to preserve some of the last remaining viable stands of miombo woodland and coastal forest in the country, including parts of the Selous Game Reserve and forests containing globally recognised biodiversity.

Close relationships between livelihoods, economies and woodlands have been well documented both globally and within Tanzania. Indeed, the woodlands and coastal forests of southern Tanzania contribute directly towards the livelihoods of rural people in particular, including the source of construction materials, fuel, food protein, medicines, revenue and cultural values. Local and central government also benefit from these natural resources, for example the sale of timber, sport hunting and photographic tourism. They also play important, but frequently under-valued, roles in maintaining ecological cycles and micro-climates, nutrient cycling, soil fertility, erosion control, water catchment, stabilising stream flows, and carbon sequestration.

Woodlands and coastal forest therefore present enormous potential in alleviating poverty and enhancing social development. On the other hand, growing disparities in poverty levels, population growth, unsustainable practices and increasing pressure on limited resources are increasingly threatening this vision, resulting in negative impacts on both woodland integrity and the quality of livelihoods. This is captured in the National Forest Policy (1998) with specific reference to trade, recognizing that *"trade in wood and non-wood forest products offer considerable potential for increased economic development through income and employment generation as well as export earnings"* whilst *"unregulated trade can instigate uncontrolled exploitation and has the potential of accelerating forest destruction and degradation through loss of biodiversity"*.

Ironically, improved development may often result in greater negative livelihood and environmental impacts. Sustainable development, particularly in areas where people rely heavily on environmental resources, therefore relies on striking a careful balance. This could not be nearer the truth than in southeast Tanzania, which contains the highest proportion of unreserved woodlands in the country whose management depends on the same communities who derive so many benefits from environmental services and timber products.

In collaboration with several government ministries, local government authorities, foreign government missions, non-government organisations and the private sector, TRAFFIC East/Southern Africa has been documenting the timber trade from southeast Tanzania since 2001. Most importantly, TRAFFIC has

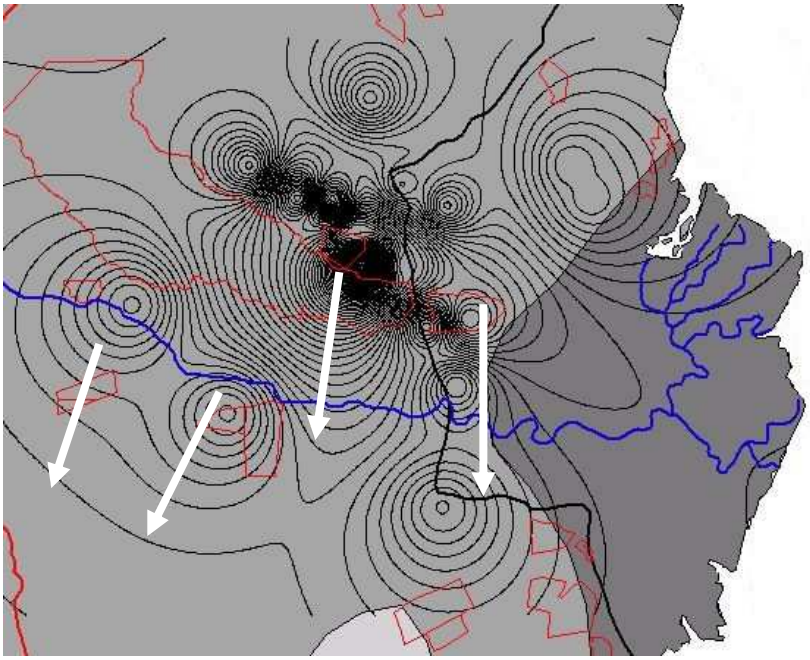
documented data concerning timber trade and related socio-economic factors prior to the completion of the bridge, thereby providing a baseline from which to compare future changes. Detailed information on volumes, products, species, sizes, harvest areas, trade routes, markets, revenues and sociological factors are presented in a report '*Bridging the Gap: Linking Timber Trade with Infrastructure Development and Poverty Eradication Efforts in Southern Tanzania*'. This article focuses on two disturbing trends evident from the monitoring results even prior to opening of the bridge, namely evidence of ***unsustainable timber trade*** and ***large-scale, illegal activities***. These trends were particularly evident north of the Rufiji River where access to woodlands is greatest. Indeed, Rufiji District accounted for 85% of the total harvested wood before completion of the bridge.

Evidence of unsustainable trade

Increasing proportions of lower value species in trade: Over-harvesting of the higher value hardwood species (Class I and II) from Rufiji District has pushed traders to exploit a larger number of alternative species, mostly Class V (e.g. *Hymenaea verrucosa, Trichilia emetica*). Indeed, these species accounted for almost all Class V licenses issued from the entire study area. On the other hand, the proportion of the most valuable hardwoods harvested increases markedly moving southwards away from the Rufiji River. For example, over 80% of licenses issued from districts in Lindi Region during 2001 were comprised of Class I and II species (e.g. *Pterocarpus angolensis, Swartzia madagascarensis* and *Afzelia quanzensis*).

Changes in harvest areas: In general, historical trade data shows how harvest areas have moved southwards as areas become over-exploited. Shifts in harvest areas are most pronounced for two highly targeted species, *Pterocarpus angolensis* and *Dalbergia melanoxylon*, to the extent that very few commercially viable stands remain in Rufiji District. Comparison of harvest areas between 2001 and 2003 - just before the bridge was opened - already showed a marked shift in harvest pressure south of the Rufiji River as traders anticipated a transport (see Figure 1).

Figure 1
Map of Rufiji River showing southward shift (white arrows) in timber harvesting (black contour lines) just prior to opening of Mkapa Bridge, August 2003



Key: Light grey = coastal forest; Dark grey = mangrove; Red = Forest Reserves; Blue = Rufiji River.

Harvesting of under-size trees: Fewer large trees rem
targeted over the past decade. Stocks have declined
felled indiscriminately. This is supported by stump su
of harvestable trees, undersize logs processed by saw m
smaller logs as 'off-cuts', thereby avoiding all forms of

Increase in trade levels: Observations and discussions with stakeholders indicate a rapid increase in trade volumes since the opening of the bridge with up to several dozen trucks passing daily over the bridge. However, this aspect is currently being researched and will be verified over the course of the next few months.

Evidence of illegal trade

Large-scale, uncontrolled and often illegal trade throughout the study area results in large discrepancies between official statistics and actual trade levels. For example, five times as much timber passed north through Kibiti checkpoint than was officially recorded during 2001. Concealment and evasion were amongst the most common techniques to avoid payment of royalties. The most common methods were the utilisation of off-road truck routes to avoid official natural resource checkpoints, travelling at night, locking trucks to avoid inspection, and hiding timber products under other products (e.g. salt). In many circumstances, official harvest documentation has been obtained, but traders chose to under-declare or mis-declare the goods. Timber traders may quote lower classes of tree species in their licenses in order to pay low royalty rates, or incorrectly declare the origin of timber. Large volumes of timber are felled without any license.

Several important driving forces affect illegal activities in the study area, most importantly profit margins and enforcement levels. Evidence from the study area shows that illegal trade is resulting in significant loss of revenue - vital income for local government authorities and communities - as well as woodland degradation. One of the most difficult aspects of timber trade management in southeast Tanzania is the transport of mostly planks by bicycle and truck to dhows waiting at small, informal ports destined for Zanzibar. This is the subject of current research by TRAFFIC.

Recent positive interventions and further recommendations

The majority of people in the study area depend heavily on free forest goods, products and services to support their livelihoods in the absence of viable alternatives. Wise utilization of natural resources in the study area has the potential to be the foundation for poverty alleviation efforts in southern Tanzania in addition to supporting local and central governments. However, forestry is not currently regarded as a priority sector despite the fact that it influences the progress of other priority sectors for development. Currently, forestry resources in southeast Tanzania, a priority area for poverty alleviation, are being rapidly degraded with unknown consequences despite their value. It is vital that a greater political understanding of the importance of the forestry sector to development is achieved to leverage justified support through national budgeting and planning processes.

Since the results of this work first started to emerge, it is encouraging to note the increase in awareness and interest from other stakeholders. In particular, there have been a number of positive interventions by both local and central government during 2003 to improve levels of forest management. For example, a total harvest ban was placed on Ngumburuni Forest Reserve. This was closely followed by a temporary ban on harvesting of *Combretum imbebe* (Kis. Mhama), a species that rapidly increased in trade, pending further research into its market value and trade dynamics. Indeed, Rufiji District has put considerable effort into implementing a forest management plan. At Kibiti checkpoint, the first major checkpoint north of the Mkapa Bridge, the Ministry of Natural Resources and Tourism, Forestry Division, has increased capacity by placing two forest officers with a 4WD vehicle to assist with revenue collection, checkpoint compliance and enforcement patrols. Whilst outright bans on harvesting are not the ideal solution, complimentary efforts to strengthen management need to be extended southwards into Lindi and Mtwara Regions.

Insufficient management capacity and forest management practices were identified as major deficiencies allowing unsustainable and illegal practices to continue. Recommendations to improve management for the long-term benefit of sustainable development in the study area include extensive capacity building at checkpoints, empowerment of local communities in forest management, improved forest management plans and law enforcement assistance. Efforts to identify and replicate successes in joint forest management in a socially responsible manner are urgently needed. Importantly, it is recommended that ongoing monitoring and research complement future initiatives in order to assess changes in trade dynamics, the impacts on livelihoods and the success of any interventions.

Some say that the past is the key to our future. Others argue that the present is the key to our future. In the case of the woodlands of southern Tanzania, one would predict that both statements are true. It is only through the collaborative efforts of all sectors that hard lessons from the past and present will be turned into effective woodland management to realise sustainable social, economic and ecological benefits.