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## POLICY BRIEF

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# Improving forest management in Tanzania

## Understanding patterns of access rights, investments, and enforcement

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Over the past thirty years, a series of policies have aimed to address rural people's dependence on forest resources while protecting those forests from deforestation and degradation. Social forestry projects, integrated conservation-development projects (ICDPs); participatory forest management (PFM), encompassing joint forest management (JFM) and community-based forest management (CBFM); ecotourism; and environmental service payment (ESP) programs, all aim to involve villagers in the protection of local forests and to enable villagers to capture some value from the protected forests.

Individual projects and policies have been deemed successful when the local communities have received benefits. However, the distributional effects of these projects have tended not to be addressed explicitly, and the connection to maintained or increased forest protection, or avoided degradation, particularly at a landscape level, has proven elusive.

Despite the introduction of participatory forest management (PFM) in many low-income countries, protecting these forests from over-exploitation whilst ensuring that nearby forest-dependent households' livelihoods are not harmed by reduced access to forest resources remains a problem. In Kibaha's forests in Tanzania, nearby communities have lost access to important forest resources and have little incentive to stop more distant individuals and groups from degrading the forests. Forest officials have the incentive, but lack funds and appropriate enforcement strategies to protect the forests. As a consequence, nearby communities are worse off and the forests continue to be degraded. A key issue is how to enforce forest access restrictions in low-income countries in the context of limited property rights institutions, whilst reducing the negative impact on nearby communities.

Kibaha's forests (including the Ruvu North and Ruvu South Forest Reserves) face particular pressures because of their proximity to Dar es Salaam, a large city with high demand for charcoal and timber. Forest managers in Kibaha attempt to protect the forest and to



### Key points

- Initiatives that protect both forests and forest-based livelihoods remain elusive.
- Livelihood activities that are directly linked to forest protection, such as bee keeping, are most likely to meet this dual objective.
- These initiatives will be most successful if combined with appropriate enforcement regimes such as legalising the collection of forest resources by local villagers which can empower them to protect the forest from "outsiders".
- The location of livelihood projects and the spatial pattern of patrols should be strategic to maximise returns to limited funds and minimise leakage.

## Understanding patterns of access rights, investments, and enforcement in Tanzania's forests

meet local village needs and to provide charcoal to nearby Dar es Salaam. As part of a joint forest management (JFM) initiative, managers established a buffer zone within the forest reserve in which villagers can grow trees and staple crops. The forest reserve managers undertook this project to provide resources to local people; to provide fuel for Dar es Salaam; to reforest a degraded area; and to induce these buffer zone farmers to enforce access restrictions into the remaining reserve against outsiders. Bee keeping has also been introduced whereby villagers are permitted to keep bee hives in the protected forest.

Kibaha's forest managers are actively trying to balance the needs of local people, Dar es Salaam's charcoal demand, and forest protection goals. However their current policies do not create all the intended incentives. We identify three important implications of the current forest management strategy and options for improvement.



1. There is no specific patrol strategy to protect the forests, and in particular no attempt to link patrol patterns with spatial patterns of illegal activity to improve the deterrence effect of the limited enforcement budget.
  - ⇒ With a limited enforcement budget, a patrol strategy needs to take account of the spatial realities of the particular forest to maximise deterrence and the probability of illegal acts being caught.
2. Villagers current illegal collection of livelihood products like fuelwood from the reserve forest makes it tricky for them to enforce against more damaging activities such as timber harvest and charcoal production undertaken by outsiders.
  - ⇒ Given the reality that villagers are going to collect forest resources whilst going too and from their bee hives, under many conditions it may be more appropriate to allow legal collection of forest resources by local villagers for their own use. In this way the villagers will be empowered to protect the forest from outsider illegal activities, particularly charcoal production, which is typically more ecologically damaging than small-scale collection of resources such as fuelwood, forest fruits and vegetables, and forest medicines, that are traditionally collected by rural households.
3. The location of livelihood projects such as bee hives can have multiple benefits for the forest because bees serve multiple roles. Bee keeping gives villagers a new source of income that depends on the forest quality. Bees deter illegal charcoal production because people are scared of being stung. Villagers check on their bee hives frequently and so are more likely to deter illegal activity from the area of forest where the bee hives are located and the route to and from the village.
  - ⇒ The strategic location of bee hives, combined with spatially informed enforcement, and the legalisation of limited resource collection by villagers, can create incentives for improved protection of the forest.



## Conclusion

In a world of very limited budgets for forest management and high levels of poverty and resource dependence, a framework that adequately addresses the spatial costs and decisions that underlie extraction can identify patterns of policies that lead to improved forest quality results while addressing rural people's welfare. More empirical data and modeling are needed to show the conditions under which income-generating projects lead to reductions in dependence on reserve forest resources; the addition of a spatial aspect to those projects provides a new tool for resource managers.

### ABOUT THIS BRIEF

This brief is based on The trees and the bees: Using enforcement and income projects to protect forests and rural livelihoods through spatial joint production, by Heidi J. Albers, and Elizabeth J Z Robinson, .Agricultural and Resource Economics Review; and Kibaha Tanzania's forest protection, poverty alleviation projects, NTFPs, and charcoal production: modelling multiple tools, goals, and actors, by Elizabeth J Z Robinson, Heidi J Albers, Guyslain Ngeleza, and Razack Lokina, presented at AERE 2011 annual meeting.

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