



Transformative Learning Through Conservation

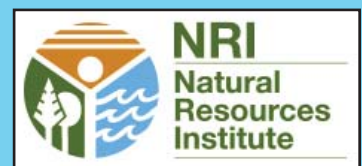
ASSETS

Technical Report

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Transformative Learning Through Conservation:
The ASSETS program
Technical Report By Susan Collins, June 2007

Executive Summary

Kenya's Arabuko-Sokoke Forest is an area of international conservation concern. Residents surrounding the forest, among the poorest in the country, rely heavily on forest resources for their livelihoods and the forest is under threat from logging, poaching, and pressure for land clearance. ASSETS, a conservation program initiated by A Rocha Kenya in 2001, attempts to reduce dependence on forest resources and foster a more positive attitude towards conservation by channeling eco-tourism profits from the forest to community members in the form of secondary school bursaries.

This technical report examines the impact of ASSETS in Kaembeni, Kilifi District, focusing on participant learning, changed attitudes, and new action on conservation through involvement in ASSETS. The research methodology included semi-structured interviews and questionnaires. The data presented here forms the basis for my forthcoming thesis on this topic.

Results

Arabuko-Sokoke Forest

- Most interviewees felt that the Arabuko-Sokoke Forest (ASF) was being conserved because trees attract rain; there was little difference between ASSETS participants and non-participants in this regard.
- ASSETS participants had few proactive suggestions as to how to help the ASF, most saw "staying out" as the only way to conserve the forest. Again, there was little difference between participants and non-participants in this regard.
- ASSETS participants indicated that the forest was of great value and significance to them. In contrast to many of the non-participants interviewed, ASSETS participants did not support converting the forest to farmland.
- More than half of those ASSETS participants interviewed felt that the ASF was not under threat and was "doing fine."
- Community members are largely unwilling to report those people involved in illegal activities in the forest.
- Few ASSETS participants were aware of who A Rocha was specifically, but most understood that the bursaries were generated from the forest. This contrasts strongly with other projects in the area, such as the construction of Bogamachuko School by NABU, where few community members understood that that project was linked to the forest.

ASSETS

- Participants largely assumed that the goal of ASSETS was to further children's education and were unaware that the goal of the program was conservation oriented.

- There was little awareness that involvement in conservation was a requirement of the ASSETS program; very few participants recalled the confirmation on the application form.
- ASSETS participants indicated that many of the recipient children were very active in telling others – generally their siblings and peers – about the benefits they receive from the forest.
- Word of the economic benefits to be gained from the ASSETS bursaries has spread to other community members in the area, but the connection between the bursaries and the forest is not well known among non-participants.
- Participants were willing and enthusiastic to join a parents' association and had many different ideas about what the organization could do. Parents were less enthusiastic about conducting community forest patrols.
- Some participants felt that they were not spending enough time with ASSETS staff or that the program was too focused on students. Other participants raised concerns regarding the timely payment of ASSETS bursaries.

Learning

- Participation in ASSETS led to learning new information and skills about the forest, conservation, and the connection between trees and rain. Many participants took new action on environmental issues, such as planting trees, starting nurseries, and telling others in the community about ASSETS, the ASF, and conservation.
- Learning and action on conservation was more pronounced in parents who had been involved in ASSETS for a longer period of time and attended the meetings.

Acknowledgments

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1 Introduction

Although protected areas are seen as important tools for conserving biodiversity and species habitat, the relationship between communities and such areas is often contentious. It is being increasingly recognized that if conservation is to be successful it should have the support of local residents. Studies have shown that support for conservation by residents is related to the level of benefit they derive from it, and that this link is strongest when the benefits are more tangible. As such, there has been a concerted effort by conservationists to bring communities “on side,” with a community conservation approach that attempts to involve residents in conservation in return for economic or other benefits.

ASSETS (Arabuko-Sokoke Schools and Eco-Tourism Scheme) is one such project, aiming to reduce extraction of resources from the Arabuko-Sokoke Forest (ASF) and foster a more positive attitude towards conservation by channeling eco-tourism profits from the forest to community members in the form of secondary school bursaries. This technical report presents results of a research project on pertaining to learning through participation in ASSETS, including: participant learning through involvement in the program; changed attitudes and values; and new action on environmental issues, both in the forest and in the day-to-day lives of participants. The research methodology involved semi-structured interviews and questionnaires. The results are organized by the question posed, with a more general section on learning.

1.1 The Arabuko-Sokoke Forest

The coastal forests of eastern Africa are an area of international conservation concern; classified as one of the top 25 biodiversity “hotspots” worldwide (Myers *et al.*, 2000). These forests once spanned 30,000 km² from Somalia to Mozambique, but only 2000 km² remain today (Myers *et al.*, 2000), of which the 400 km² ASF (Figure 1) is the largest remnant (ASFMT, 2002). The ASF contains over 200 species of birds, is ranked as the second most important forest for bird conservation in mainland Africa, and is home to a number of site-specific endemic species, such as the golden-rumped elephant shrew (*Rhynchocyon chrysopygus*) (ASFMT, 2002).

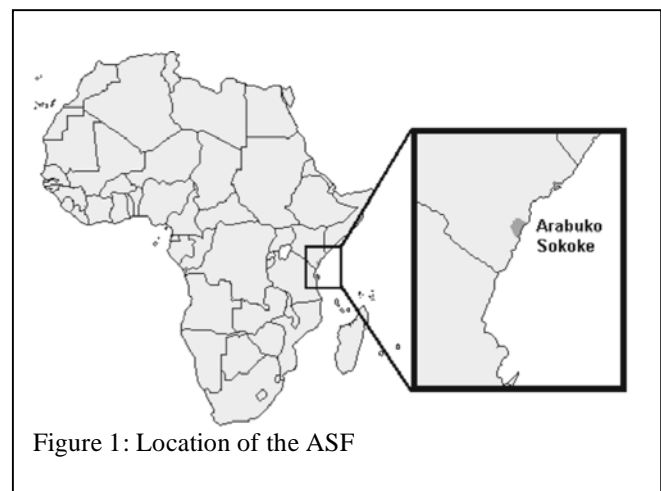


Figure 1: Location of the ASF

The ASF was designated as a Crown Forest in 1932, and subsequently a Forest Reserve in 1944. As a forest reserve, the ASF is managed in accordance with Kenya’s forest policy, which requires forest preservation for watershed protection, forest products, and conservation purposes. An indefinite ban

on timber harvesting within government forests has been in effect since March 2000, so there are few legitimate forest product industries based in the ASF.

The area surrounding the forest is home to approximately 104,000 people, predominantly small-scale farmers and among the poorest in the country (ASFMT 2002). Many residents rely on forest resources for income and to meet their basic needs, and illegal extraction, including firewood, small mammals, wood for building (poles), timber, charcoal, and wood for the carving industry, is considered a threat in the ASF (ASFMT 2002). There is evidence of illegal logging and charcoal burning within the forest.

Notwithstanding a recent move towards participatory forest management in the ASF, forest adjacent residents have not been particularly supportive of forest conservation. Crop raiding by forest animals, especially elephants and wild pigs, is a major concern among forest adjacent communities, as damages from raiding forest animals resulted in a reduction of 26.4-81.8 percent of farmers' income in some areas (Maundu 1993).

A number of conservation projects have been undertaken in the forest in recent years, with funding from the European Union, USAID, and an assortment of non-governmental organizations. The general approach to conservation in the area has been to "make conservation pay;" to promote a more positive view of the forest and give residents a stake in the forests' future by providing them with tangible benefits from it. These projects have taken a number of forms: a bursary scheme; construction of schools and boreholes in forest adjacent communities; and non-timber forest product businesses that community members can join (including mushroom farming, butterfly farming, silkworm farming, beekeeping, and community-owned tourism facilities).

1.2 Research Methods

At the time this research was conducted, the ASSETS program was awarding bursaries to selected graduates of five primary schools surrounding the Arabuko-Sokoke Forest. For logistical reasons, this research focuses on participants from Bogamachuko Primary School, in the Kaembeni Sub-Location on the western edge of the forest (Figure 2).

Bogamachuko was chosen because there were a number of ASSETS families nearby, and

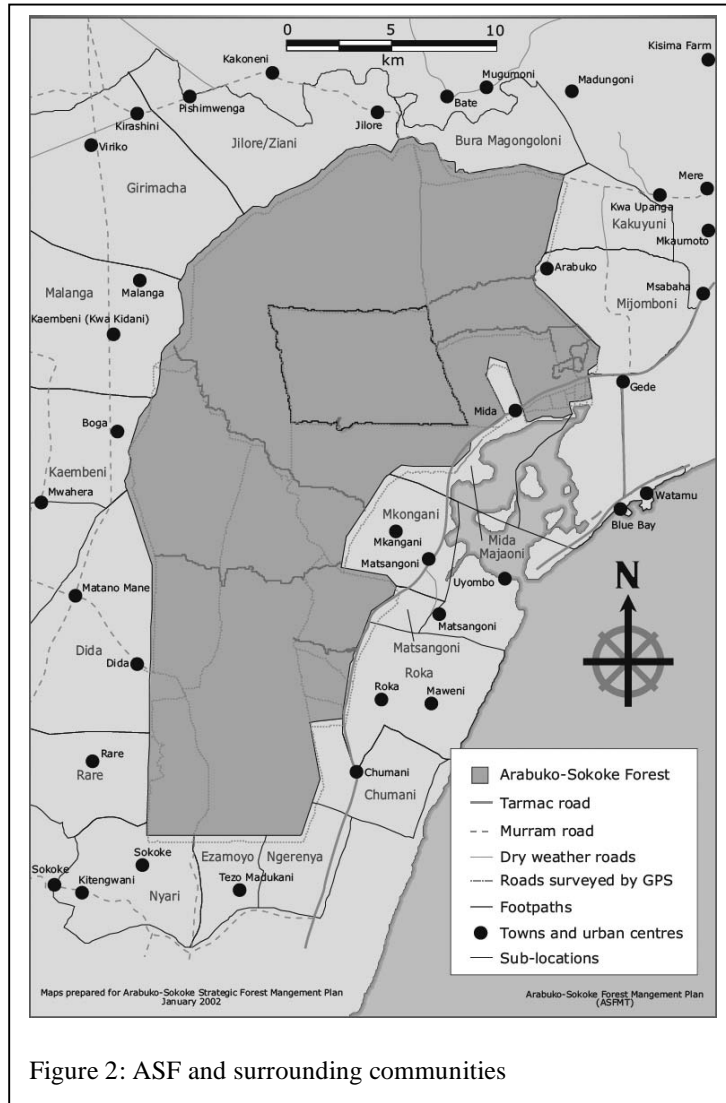


Figure 2: ASF and surrounding communities

because there were relatively few conservation projects operating in the area (compared to the eastern side of the forest); for most participants, ASSETS was the only conservation project they were involved in, allowing me to isolate the influence of ASSETS specifically. Furthermore, basing myself in one community, as opposed to working in five different communities, enabled me to build relationships with community members and better understand the local context.

Nineteen ASSETS households from Kaembeni participated in this research, representing 27 recipient students. Fourteen non-recipients in Kaembeni also participated. Three ASSETS households from Mida, on the eastern edge of the forest, also participated. Research was conducted between May-August 2006 and all participation was voluntary. This research focused on the parents and guardians of ASSETS recipients, rather than the students, as it is the adults

who use forest resources and exert pressure on local politicians for forest clearance.

Methods relied primarily on semi-structured interviews (see Appendices I & II for questionnaires). When possible, interviews were conducted with that person who had been attending the ASSETS parents meetings. However, as adults sometimes leave rural areas for months at a time in search of work, it was not always possible to meet with the person who had been attending the meetings. In these cases, the interview was conducted with the remaining parent/guardian at the home. Interviews were generally with only one

person, though some were conducted simultaneously with both parents if that was their preference. The results and comments included here represent the opinions of most respondents, unless otherwise indicated. The three ASSETS recipients from Mida Creek have been included with the Kaembeni participants unless otherwise indicated.

Interviews were also conducted with a number of key informants, including: local government officials; A Rocha staff members; the forest warden; district forest officer; representatives from other conservation organizations active in the area; and a representative from the residents' association.

2 Participant Views¹

2.1 Forest Related Questions: Values, Conservation, and Enforcement

2.1.1 Why is there interest in conserving the forest?

Among community members there was a wide-scale acknowledgement that the Arabuko-Sokoke Forest *was* being conserved, but often not a recognition of why this was. This question was included to gain insight into local views of the conservation movement and shed some light on values pertaining to the forest.

Among ASSETS participants and non-participants, the most frequent reason cited for forest conservation was that trees/forests attract rain. The popularity of this response is not surprising; not only is the connection between trees and rain emphasized in the ASSETS program, the Kenyan school system, and by local government officials, this connection is also a component of traditional indigenous beliefs in Kenya. Additionally, recent weather conditions in the area have been very arid; many people have recognized that rapid deforestation has occurred in recent decades and are linking this with the increasingly arid climate.

Another popular response for “why the forest is being conserved” is the non-bursary financial benefits derived from the forest, generally that the forest generates income for the government (generally from tourism) so the government wants to conserve it.

A number of interviewees (participants and non-participants) felt the forest was being conserved because of the animals. This sentiment is likely a relic of decades of mega-fauna focused conservation efforts in Kenya. Conservation in Kenya has long been focused on large, charismatic species, as opposed to forest or habitat conservation.

While a handful of participants felt that conservation for the animals’ sake was an important goal, expressing sentiments such as “[Animals] are created by god. They were not created to stay in *shambas*; their homestead is in the forest. Why would we go taking their space from them?” (Rebecca, ASSETS participant). For the majority of respondents, animal conservation was not personally important, but a government objective: “The government and the *wazungus* own the animals so they want the forest to be conserved [because they benefit from it]” (Lisa, ASSETS participant)

Other reasons for conservation that were mentioned included: the forest acts as a windbreaker; the forest should be conserved so that future generations can enjoy it; the forest brings the Kipepeo Project; the forest provides non-timber forest products like wild

¹ Names and identities have been changed. I struggled with what pseudonyms to assign – African or European? The respondents generally went by their African family name, though most had European first names. Many of the Giriama share the same family name, so it seemed unwise to assign a pseudonym based on an existing Giriama name, as many community members likely have that name. Rather than invent a Giriama sounding family name, I chose to use European first names common to the area.

aloe and traditional medicines; the forest provides wood resources like firewood, timber, and poles; and the forest brings ASSETS bursaries.

Apart from the handful of ASSETS participants who indicated the forest was being conserved because of the bursaries, and four non-participants had no idea why the forest was being conserved, the opinions expressed by ASSETS participants and non-participants were generally similar.

2.1.2 What can people do to help and hurt the forest?

Understanding what area residents perceive as threats to the forest and gaining a sense of the types of solutions they have in mind is important for understanding conservation of the ASF. This question was included to address these factors, and interviewing ASSETS participants and non-participants in the same community gave some perspective on the effect of ASSETS environmental education.

Nearly every interviewee listed cutting/clearing/stealing trees as the way people hurt the forest (included cutting trees for wood products, and also clearing the trees to make *shambas*). A number of people expressed sympathy for those engaged in illegal cutting, acknowledging that they have few alternatives: people are “cutting trees for charcoal and firewood to sell to get something to eat because people are hungry.” (Sophie, Signey, & Leslie, non-participants)

Other ways to “hurt” the forest included hunting/trapping wild animals, and accidentally starting a forest fire (if a domestic bush fire burns out of control).

The responses to the question “how to help” were more diverse, the most popular responses among ASSETS participants and non-participants were that: the KWS (Kenya Wildlife Service) and the rangers should be arresting people and guarding the forest; people who are currently harming the forest should stop; access to the forest should be restricted (e.g. with a fence).

Notice, that the most popular suggestions to “help” the forest are not proactive at all. Generally, people perceived the greatest threat to the forest as the cutting of trees, if they were not involved in these activities they felt that they were already doing all they could to further conservation. The majority of interviewees saw helping the forest as the responsibility of KWS/the rangers, or contingent upon those who are currently harming the forest to stop. Projects like ASSETS seem to focus on staying out of the forest; many people are not currently involved in illegal activities and are looking for a way to help, but do not know how. After participating in environmental education through ASSETS, participants generally had no more suggestions on how to help the forest than non-participants.

Some interviewees did have more proactive suggestions for helping the forest, including:
-Planting trees to reforest the Arabuko-Sokoke Forest and planting trees on the *shamba* to lessen your need to go to the forest:

“When you have a tree at home, there’s no reason to go to the forest.” (James, ASSETS participant)

-Only two participants suggested that they should report those involved in illegal activities to the authorities, with one respondent adding, “you will become an enemy of the community” if you report someone (Martina, ASSETS participant). One ASSETS participant suggested that community members conduct patrols of the forest.

- Telling others about conservation/the importance of the forest was important to some: “The community should all come together and keep an eye on each other. If we see someone cutting trees we should tell them to stop... if we could join together for conservation we could be heard and make some difference. Many voices are difficult to ignore, we have more strength together.” (Rebecca, ASSETS participant).

- Some respondents acknowledged that community education and spreading the word about conservation were important, but did not see that as a role for themselves or individual community members:

“The government or people from another country should come and education us about why we should conserve [the forest]” (Michael, ASSETS participant)

- Some interviewees recognized that those who are dependent on the forest for their livelihoods, require alternatives if they are to help the forest:

“If [organizations] would do projects like Kipepeo in the whole area surrounding the forest, then people wouldn’t need to go to the forest.” (Michael, ASSETS participant)

In order to conserve the forest there must be “a project to help those that depend upon the forest for their food, through charcoal and firewood, so they don’t need to go again.” (Sophie, Signey,& Leslie, ASSETS non-participants)

“[It’s] hard to deny people access to the forest. People have different problems [i.e. poverty]. I don’t have a way of helping the forest, I’m entirely dependent on it.” (Brandon, non-participant)

2.1.3 Is the Arabuko-Sokoke Forest of any value or significance to you?

This question was included in a survey conducted by Maundu (1993), where roughly half of forest-adjacent residents interviewed indicated the forest was of value to them (Maundu 1993). ASSETS participants expressed overwhelmingly that the forest was of value/significance to them, because the forest provides bursaries to community members, because forests attract rain, and because the forest provides resources to community members:

“The bad side of the forest is that it keeps elephants that destroy crops. But, it attracts rain, so yes, it’s of value.” (Thomas, ASSETS participant)

Just over half of the non-participants indicated that the forest was a value to them (because of rain and access to resources):

“It’s of value to me, because one of these days I may be stranded [helpless] and then I can go to the forest to get something to sell for income.” (Lilly, non-participant)

The remaining non-participants indicated that it was of no value to them, generally because of the damage they suffered from crop-raiding animals:

“[T]o value something it needs to be a help to you. We get no assistance or benefit from [the forest], only problems: the elephants that will come and kill us in our homes. If it were to be divided it would be cleared so quickly with a machete and fire – we could see you in Gede [a town on the other side of the forest]” (Cathy & Sharon, non-participants)

Other reasons to value the forest included: it acts as a windbreaker; the forest was responsible for the building of Bogamachuko school by NABU; the forest brings other organizations and projects to the area, like Kipepeo; and the forest contains animals, some of which are found no where else in the world.

2.1.4 Would you be happier if the forest were not there?

In 1993, 59 percent of those forest-adjacent dwellers interviewed indicated they would be happier if the forest was not there (Maundu 1993). In this research, all ASSETS participants interviewed indicated that the removal of the forest would not make them happier. The reasons people gave for wanting the forest were generally focused on the fact that without the forest, there would be no rain and projects and benefits like the bursaries would end.

Half of the non-participants said they would not be happier in the absence of the forest, indicating that without the forest life would be more difficult, or that they would not be able to get resources from the forest:

“I would really want the forest there because it’s a help to me. If I have no money, I go there for water. It’s a help to me, I would be suffering if the forest were not there.” (Carrie, non-participant)

Others, who suffered heavily from animal damage, indicated they would be happier if the forest were not there at all:

“Would you be happier if the forest were not there?”

Yes, because there would be no animals to destroy our crops. Now, [the forest] is there and it brings nothing apart from the animals that destroy our crops. It is better if it doesn’t exist at all.” (Joel, non-participant)

Other reasons people were happier with the forest included: the forest acts as a windbreaker; forests purify air; and animals would be in the farms bothering people more often in the absence of the forest.

Only a handful of interviewees cited more intrinsic values associated with the forest – that they enjoy and appreciate living near a forest and knowing the animals living within:

“I’m used to staying near here, I was born here, I grew up here. If [the forest] is removed I won’t feel happy.” (Elissa, non-participant)

“I wouldn’t be happy – because animals like the elephant shrew – I wouldn’t be able to know that they exist [if the forest were not there].” (Anna, ASSETS participant)

“*Would you be happier if the forest were not there?*”

No

Why?

Because I wouldn’t know about the animals in the forest... In the absence of the forest there would be no animals like elephant, bush babies, and dik dik.

How is that a value to you?

At least I’ve seen an elephant and a dik dik. It’s a value to see and know the animals.

Did you always feel that way about animals?

After seeing them, because we always learned about them from books, but after seeing them [that’s when I started to feel that way].” (David, ASSETS participant)

2.1.5 Would you be happier if all or part of the forest were given out for *shambas*?

In 1993, Maundu found that 83 percent of those forest-adjacent dwellers interviewed favoured clearing the forest for *shambas*. None of the ASSETS participants interviewed favoured clearing the forest, because of the connection between forests and rain, and because the bursaries would stop:

“No, because the area might become like a desert. Even if they offered me 10 acres I would refuse.” (Esther, ASSETS participant)

“If the forest were given out to farming we would get some more *shamba* but there would be no rain. It’s better we receive the rain on a small *shamba* than no rain on a big one.” (Jacob, ASSETS participant)

“It’s only 20 years ago that this area [his farm] was full of trees, just like the forest. It only took a few years for it to be cleared, now the trees are gone and it’s dry. So, if the forest were divided into *shambas* it would only take a few years, then it will be dry like here. Then, we’d have nothing.” (Abraham, ASSETS participant)

Some participants recognized that it was only because they were receiving the bursaries that they wished the forest to be conserved, and that those in the community who were not receiving this assistance would not feel the same way:

“According to me, I get an assistance, I would suggest not to cut it down for cultivation.

And without assistance?

I would suggest to cut it for cultivation.” (Linda, ASSETS participant)

“For those people who are not receiving bursaries, they would be very happy if it were divided. To those people who are beneficiaries, they would not be happy because the bursaries would end and the animals would be homeless.” (Anna, ASSETS participant)

Only non-participants indicated that they would favour clearing the forest for farming, either because they/others would get farms or because the animals would go away. Not surprisingly, those people who suffered the most damage from forest animals most strongly favored clearing the forest, with a number of residents recognizing that others, who do not suffer from the animals, would not feel the same way:

“Yes, I would be very happy because once we grow our crops we get nothing because of the animals. But, those on the other side of the forest would oppose that because their crops do well.

But, you said you receive rainfall [from the forest], what if it's cut?

... If [the forest] were not there and there was no rain it would still be better. I don't like the forest at all” (Joel, non-participant)

“The people who would disagree with [clearing the forest] are the ones who live away, whose crops are not being attacked.” (Virginia, non-participant)

2.1.6 Is the forest under threat, or doing fine?

This question was included to try and assess how people perceive threats to the forest, as someone who does not think the forest is under threat may be less likely to take action on forest conservation issues.

Roughly a third of those ASSETS participants interviewed indicated that the forest was under threat, either because they knew of people who had been caught doing illegal activities in the forest or because they had noticed a change in the forest over time:

“It's under threat because I know there are people who sneak in, even though it's restricted.” (Karin, ASSETS participant)

“There has been a change since I've been here: there's been a reduction of trees” (Diana, ASSETS participant)

“Is the forest under threat or doing fine?”

It's under threat

How do you know?

Because there's a certain type of tree, I used to see when traveling from here to Matsangoni, but now, they are nowhere to be seen in the forest or around the homesteads. That tree is *Muhuhu*.” (Abraham, ASSETS participant)

Most non-participants and a number of ASSETS participants indicated that the forest was “doing fine”:

“The forest is doing fine. If people were using it too much it would already be finished. The forest is still there, the trees are doing fine. The forest is the same as in the olden days.” (Brandon, non-participant)

“How do you know the forest is doing fine?”

Because I see it the way it is. I walk from here to Matsangoni; it’s still the same way. People cut trees and it’s still the same as it was. The trees are still there, the animals are still there, it’s doing fine.” (Lilly, non-participant)

“It’s not under threat... when I see it, I see it’s doing fine.” (Lisa, ASSETS participant)

A number of those interviewees who lived further away from the forest indicated that they did not know how the forest was doing, because they do not go there.

Among the key informants, there was some debate as to whether threats to the forest are increasing or decreasing (with a number of government officials commenting that projects like participatory forest management have had a positive impact on the forest), but the literature on the forest is quite consistent: the forest is not “doing fine.” Although more ASSETS participants reported that the forest is under threat compared to non-participants, a surprising number of ASSETS participants reported that the forest was “doing fine” or that they did not know if it was under threat or not. Considering that these participants have attended environmental education seminars about the forest, it is interesting that they still felt the forest was “fine,” this suggests that the ASSETS is not effectively communicating the true state of the forest to participants.

2.1.7 Reporting

A greater level of community enforcement, where community members report those involved in illegal activities in the forest, is sometimes seen as a way of decreasing such activities. Although the vast majority of interviewees were aware of people being arrested or reported for illegal activities in the forest, it is very unlikely that regular community members would report someone themselves. Those people who are reported are in “business,” meaning they are involved in commercial carving and timber extraction, and they are reported by other people in “business” because of a disagreement or “jealously” – not out of any concern for the forest. Regular people would not generally report one another, as they sympathize with other members of their community and they do not want to cause a conflict, or “create an enemy” in the community:

“Why do they do it?[report each other]

Because they are jealous.

Can you explain that?

It’s like, if they had a misunderstanding before that, you might report someone to get back at them...

Are people more likely to report locals or outsiders?

It's just within the businesses. So carvers just report carvers. It's mostly just for wood carvers and for timber.

So regular people going in?

Normal people around homes, they don't report one another. Not unless they have a disagreement." (Danielle, non-participant)

"What can people do to help? [the forest]

Reporting those involved in illegal activities, but the only problem is that you will become an enemy of the community.

Does that keep people from reporting?

People fear it because there are some things you rely on the community for, if you become an enemy they won't assist you if you need it." (Martina, ASSETS participant)

"If a Giriama reported another Giriama what would happen?

It would create a grudge between the one who reported and the person, because the person has kids and a family to take care of, and you sent them to jail. It would create an enemy." (Nathaniel, ASSETS participant)

"What happens if someone in the community catches someone doing something illegal in the forest?

The Giriama people are so sympathetic. They won't report another Giriama. Maybe you have a family, if you're reported what will they eat? That's the job of the rangers, to catch people, why should the community do their job? People would say bad things about you if you reported another person, they'd say 'those people who don't depend on the forest, they have income, they think they're so learned'". (Michael, ASSETS participant)

Due to corruption, reporting someone for the purposes of forest conservation may have little effect:

"If you get caught, then you have to bribe the *askari* to solve the issue at the local level without going to the station. [After you bribe him] The *askari* tells you how they found out [who reported you], and then the fight begins." (Brandon, non-participant)

"I think that the government is relying on the *askaris* to protect the forest. But, it's the *askaris* that are selling the forest because they get bribes from people and then let them into the forest to get whatever they want." (Joel, non-participant)

Reporting someone can also be a safety concern, according to an NGO representative:

"Many people are not too keen on reporting. It's not on the open, but some people are suspected of being informants. If they know that you're for conservation, people suspect you of being an informant, [these people] can face hostility. Many times, the Forest Department doesn't treat the information with the secrecy it deserves. People can simply pay a fee to get out of going to jail, and then they're back in the community, saying 'you're the one that reported me,

what did you think would happen?’ Some of the fellows [people doing illegal activities] collude with officers, people in the community don’t know who to trust... At the village level, people watch the movements of the person they suspect of being an informant. Some of them live with the risk; they’re marked people.”

The data suggests that, in all likelihood, the majority of community members will not start reporting each other anytime soon. If A Rocha wants ASSETS participants to report those involved in illegal activities they must consider alternative reporting mechanisms – such as encouraging the use of the chief’s suggestion box, or helping to create a safe process for community members to establish rules and standards for the use of the forest and consequences for violations.

2.2 ASSETS related questions

2.2.1 Who is A Rocha?

The majority of ASSETS participants interviewed did not know who A Rocha was; many understood the bursary scheme but did not differentiate between ASSETS (the program) and A Rocha (the organization). Of those that were aware that A Rocha is the organization behind ASSETS, some felt that the organization was primarily charity, missionary, or education oriented, while fewer thought that A Rocha was a conservation organization:

“I heard who they were through the meetings. I know it’s an organization that helps school children with bursaries.” (Grace)

“I know it’s a group of white people, but I don’t know anything else. I know they are the bursary people.” (Rachel)

“It’s an organization made for conserving the forest and educating people about the importance of conserving it.” (Michael)

“We’ve not been attending many meetings, but at the last meeting we were explained that A Rocha is a church organization that takes care of the environment and the animals in the Arabuko-Sokoke Forest and birds at the ocean in Mida” (Emily)

2.2.2 Why did A Rocha start ASSETS?

Responses to this question were varied, but less than half of respondents felt that A Rocha started ASSETS for conservation purposes:

“Schools that border the forest were given assistance because they [A Rocha] want to conserve trees in the forest. They felt that they could assist children in the schools, and in return, the children would conserve the trees in the forest. (Jacob)”

“I think that A Rocha started the programme for bursaries so that people would sympathize with the forest. I think A Rocha decided to offer bursaries so the

community would oppose the destruction of the forest. I was told not to cut and hunt, and to keep an eye out for others [doing these things].” (Nathaniel)

A number of participants interviewed felt that A Rocha started ASSETS in order to help poor families with school fees, making no connection with forest conservation.

“They started the scheme because people are poor so they wanted assist them.” (Lisa)

“Because they thought that these children [here] don’t go to school because they lack school fees, so they’re offering bursaries so kids become educated.” (Gloria)

A number of participants felt that ASSETS was intended to act as a type of compensation for damage endured as a result of living next to the forest:

“They started it because they wanted to assist those around the forest because our crops were being destroyed by animals from the forest.” (Emily)

Interestingly, although A Rocha is a Christian conservation organization and many of the participants were Christian very few participants were aware that A Rocha was a faith-based organization, and recognition of A Rocha’s faith-based ethic of conservation did not emerge during the course of the interviews.

2.2.3 What do you see as the goal of ASSETS?

The overwhelming number of respondents saw the goal of ASSETS as strictly the education of children, with a handful mentioning the joint goals of education and forest conservation:

“ASSETS aims to help those that are not able to take their kids to school. So that children from families who can afford school and those that can’t can have an equal chance in life.” (Martina)

“The major goal is to educate children, so they might get some jobs and the parents can depend on their children, not the forest [for their livelihoods].” (Esther & Michael)

A small number of participants interviewed indicated that the goal of ASSETS was strictly forest conservation:

“The main goal is to conserve the trees in the forest. When we meet, they emphasize that we need to plant trees in the *shamba* and that should act as an eye [watch the forest] and disciples for A Rocha and tell other people to conserve the forest because it is a help to us.” (Emily)

According to Colin Jackson, the director of A Rocha Kenya, “the conservation of biodiversity is A Rocha’s goal, ASSETS is not just a bursary scheme.” The results from this section of the survey indicate that a great number of ASSETS beneficiaries do not perceive the program as conservation related, but rather a charitable program designed to help with school fees.

2.2.4 How does ASSETS work/where does the money come from?

A criticism of conservation revenue-sharing projects, where money/benefits derived from conservation or tourism are funneled to community members, is that community members are not always aware of how the project works and that the benefits come from conservation. This question was included to assess whether ASSETS participants were aware of how the project works. The majority of participants interviewed indicated that the bursary money was generated by tourists/entrance fees at the forest/Mida Creek:

“The tourists pay something to view the animals and plants in the forest. It’s through what the tourists give that helps us [funds the bursaries].” (Grace)

Some parents were aware of other sources of income, such as the parents’ 300 KSH contributions, as well as donations from abroad:

“The money doesn’t come from Kenya, it comes from Western countries to help people in Kenya. They money is donated. It works with the parents to assist the students.” (Jacob)

Interestingly, although many respondents did not identify ASSETS as a forest conservation program, most understood that the bursary money was generated from tourist visits to the forest. This contrasts strongly with another conservation project in the area. In 2003, the German conservation organization NABU financed extensive construction and renovation of Bogamachuko Primary School (Figure 3). These renovations were done in the name of forest conservation, to provide the community with a benefit from the forest and to help offset some of these negative aspects associated with living near the forest. Research participants were given a number of opportunities to list the benefits of the forest, good things from the forest, etc. but only a handful of listed the school construction as a forest benefit, despite the fact that the renovations were extensive and all of the participants had children attending that school at the time. This suggests that the construction of the school, although undertaken for conservation purposes, was perceived by the community as an aid project, whereas ASSETS made a clearer link between the bursary and forest. Although some ASSETS recipients felt that the goal of the program was to further education, they nonetheless understood that the bursary money was generated from the forest.



Figure 3: Renovated and non-renovated classrooms at Bogamachuko Primary School

2.2.5 Why was your child chosen? Are you aware of other requirements?

This question was designed to assess if ASSETS parents saw forest conservation as one of the requirements of the ASSETS program. The ASSETS application form contains a “confirmation” section, where applicants and their parents/guardians sign a form, declaring their commitment to:

- “- To keep a well maintained wood lot at home.
- To protect Arabuko-Sokoke Forest by not cutting down any trees from it, nor hurting wild animals or birds in it.
- To protect Mida Creek by not cutting mangroves, nor fishing with nets of undersized-mesh, and by releasing, in good condition, all turtles caught in nets.
- To be actively involved in conservation initiatives (e.g. mangrove planting, butterfly farming, bee-keeping, wildlife clubs etc.)
- To work in my holidays in order to contribute Ksh. 300 per term towards the conservation of Arabuko Sokoke Forest and Mida Creek.”

The vast majority of participants cited academic achievement as the requirement for participation in ASSETS. While good performance is a requirement, when asked of other requirements, only one participant remembered the “confirmation” specifically. Another participant cited conservation generally, and two additional parents felt that their children were chosen because of the child’s interest in conservation or being a part of Wildlife Club (which are indeed criteria):

“We were given a form to fill and on that form it has some requirements that you perform well. There are some sentences on that form that say to protect trees in the forest, not to cut down trees in the forest, to plant trees in your *shamba*, and when your child gets a grade above C you take the organization the report and you get the bursary.” (Emily)

“There are some regulations like planting trees and conserving animals and restricting people and telling kids to stop killing birds, we were selected to be an eye out for these things.” (Rebecca)

However, the majority of parents did not realize that their involvement in conservation activities is a requirement of ASSETS. This may be a result of the fact that the declaration form is written (many parents are illiterate) and in English (a language that few can understand fluently).

2.2.6 Would your child be in secondary without the bursary?

As one of the goals of ASSETS is to increase local education, this question was included to assess whether the program is making a difference in this regard, or whether it is simply subsidizing students whose families could have already afforded secondary school. The economic situation of those ASSETS participants interviewed varied. Only a handful of parents indicated that their child would have easily gone to secondary school without ASSETS bursaries (by selling livestock for instance), with the majority indicating that the child might have gone with difficulty, only one sibling would have gone, the child would not have finished, or the child would not have gone at all:

“He would not have gone at all. The way you see me now is how I am. I have no husband. For my daily earning I go weeding a plot to get payment to feed myself. My first born only went to Standard 7. This one wouldn’t have gone at all without the scheme.” (Lisa)

“The situation is bad; they wouldn’t have gone without the bursaries. I’m praying that the number of tourists increases [because we need more help].” (Rachel)

“[In] the absence of ASSETS they would not have gone to school. God sent ASSETS because of me [my prayers].” (Constance)

2.2.7 Do others in the community know about ASSETS? Do you tell them?

Most participants felt that ASSETS was generally well known in their community, indicating that most other community members were aware that there was a bursary program for students at Bogamachuko, but were not necessarily aware of the connection between the bursaries and the forest.

ASSETS parents are sometimes approached by friends and neighbours and asked how they can afford school fees, said one participant: “other people ask, ‘your husband is dead and your son is in secondary school, how do you do it?’ I tell them I have assistance” (Charity). However, given the cultural context, most participants are unlikely to share information of their good fortune too openly, “I tell only those that ask. I don’t go telling everyone.” (Abraham)

According to Jonathan Baya, A Rocha Kenya Assistant Community Officer, “[p]eople in this region have a ‘let me struggle along with the others’ attitude. If you don’t share what you have with your neighbors there will be problems.” In this context, people would rather not have the reputation for having something or receiving benefits beyond what other members of the community have. A strength of the ASSETS program is the clear method in which recipient are selected – the student was in Standard 8 at Bogamachuko, performed well, and lives within 3 km of the forest. Such a clear selection process facilitates parents explaining the bursaries to other community members, as the program is also within their reach. A handful of those parents interviewed mentioned that they tell others about the connection of the bursary to the forest:

“Others tell us we are lucky because our kids are beneficiaries ... we respond, ‘yes, it’s a benefit from the forest.’

Are others interested in joining ASSETS when they hear about it?

Yes, they like it, but we tell them, your daughters and sons should work hard. They normally see it as if we’re selected, but you need to do more, and take your child to school and settle them and pay the contribution.” (Rebecca & Daniel)

More than half of the ASSETS non-participants interviewed were aware that there was a bursary program available for students from Bogamachuko who perform well in Standard 8. However, only one of the non-participants was aware of any connection between the bursary program and the Arabuko-Sokoke Forest:

“I have heard there’s a specific *mazungu* that offers bursaries for those who perform well on their final exams. That’s all I know about it.” (Roberta, non-participant)

“I heard that those who perform well at Bogamachuko are taken by an organization for assistance. But, I don’t know anything else, like why it started or how it works, or the name of the organization.” (Julie, non-participant)

These non-participants had learned of the bursary program from other community members, from community meetings, and from their children attending Bogamachuko. Most non-participants indicated that they would join ASSETS if given the opportunity, as they would also like to receive benefits. Word of the economic benefits to be gained from ASSETS seems to have spread among community members; the connection of these benefits to the Arabuko-Sokoke Forest has not.

2.2.8 Does your child ever tell you about conservation and the environment?

When asked if their child receiving the bursary ever tell them about conservation or the environment, most of the ASSETS participants indicated that their children tell them regularly about the importance of the forest, that they should plant trees, and that they should tell others about the benefit of the forest. The recipient children also tell others in the family, generally younger siblings, about the importance of the forest. A handful tell others in the community about the benefit they receive from the forest, with varying results:

“It was just some few months ago that he [my son] was crying for school fees, and now he’s there because of the forest. Don’t you think he would tell the world about the importance of that forest? He is able to tell people about the importance of it because that’s where he gets the bursary.” (Lisa)

“[My son] tells [his siblings], ‘I’m going to school because of the forest, don’t let me come here and hear that you’ve been to the forest to kill those birds, I will beat you.’ They listen to him, and he normally tells them, ‘father passed away. I wouldn’t be going to school without ASSETS. Don’t you see the assistance I’m getting? It’s through the forest.’” (Charity)

“Yes, [my daughter] tells the small boys not to go for birds. They only listen when she’s around, but when she’s not there they still do it.” (Jacob)

“[My son] always emphasizes that it is through the forest that he gets the bursary. He tells me I should tell the other people the importance of the forest, and if I know of other people who burn charcoal or cut timber, I should tell them to stop... I normally emphasize the importance of the forest, but those who don’t receive the bursaries don’t see the importance. But I do tell them. I tell them that the forest brings money from tourists and they should conserve it because it contains precious resources that tourists come to see and when they leave, they leave us with money for our country.” (Grace)

“There are some hunters in the forest, some openly and some in secret. It happened that one day my daughter met someone who went hunting and they had the game openly. She met them and told them, ‘do you know it’s these animals that give me an assistance and we have permission to report people we catch, so to be on the safe side can you please stop hunting.’ Luckily enough, one of the students from that family was selected as a beneficiary this year. They were so thankful to my daughter because she told them about the organization. They’ve stopped hunting now.” (Anna)

2.2.9 Do you know other ASSETS parents? Would they be willing to be involved in an ASSETS parents’ association?

Rather than ask participants directly if they would be willing to be involved in a parents’ association, the question was phrased to be less pressuring. Nonetheless, the participants indicated they would be interested in joining such an association. When asked of the kinds of ideas they had in mind for the association, participants suggested a range of activities. In giving their ideas for the parents’ association, participant responses gave interesting insight into different ways they could be proactive about forest conservation.

Half of the respondents suggested that the parents’ association could be involved in planting trees, for conservation or commercial purposes. Interesting ideas included reforested the Arabuko-Sokoke Forest and surrounding areas with indigenous trees:

“What activities could you do?”

Planting of trees

Which trees?

Indigenous

Where?

In the *shamba* and in the area affected by illegal activities in the forest.” (Martina)

“What kinds of activities could [you] do?”

[Getting] seedlings from indigenous trees to plant, that will make us different from other groups, and people will know we are ASSETS parents [because of the indigenous trees].” (Linda)



Figure 4: Tree nursery in Kaembeni

A number of respondents suggested that the ASSETS parents start a group nursery (Figure 4); they would rear seedlings as a group, keep some for themselves to plant or sell some for profit:

“...if you grow seedlings in a nursery it becomes easier as a group because some people might travel and some might not be able to afford water that day. Then, we should separate some of the seedlings as a group, with some to plant in your own *shamba* and some to sell as a group.” (Emily)

Interestingly, some ASSETS parents suggested that the parents' association might act as a teaching organization by introducing non-participants to conservation and explaining the importance of planting trees and conserving the forest:

“We should rear and plant trees. Then, we should act like teachers to other parents on how to plant. Others will see the benefits we get from trees so it will be an encouragement to them to plant trees as well.” (David & Leah)

“We could plant trees in the area and explain to the non-participants on how to conserve the environment. Then, we would tell them that it's through the trees that we get the assistance, so they can see the importance of it [the trees and forest].” (Abraham)

“We should meet and teach others about nurseries, and then do a joint nursery and then take the seedlings to our own *shambas* to plant.” (Daniel)

In addition to conservation related projects and tree nurseries, a number of parents suggested income-generating projects that the parents' association could pursue, including: butterfly farming (for the Kipepeo Project); beekeeping; a merry-go-round; chicken/livestock farming; and starting a shop/business.

Some participants had creative ideas as to how income-generating projects could be used to help others or contribute to the ASSETS program, such as:

“We could get a business and then provide loans. We could provide money for school fees as a loan that needs to be repaid after a period of time [could use the profits of the business to provide the loans, not make a business of providing loans].” (Jaclyn)

“We could raise seedlings, sell them, and we could create an account and give the profits to A Rocha as our participatory contribution to create more bursaries.” (Rebecca)

A small number of parents suggested that the parents' association could undertake forest guards:

“Those parents living near the forest should help the *askaris* to catch those sneaking around the forest.” (Anna)

The responses from this question indicate that ASSETS parents have ideas about how they can take action on conservation. Their willingness to act as “teachers” for other members of the community could be especially useful for spreading the conservation message. A noted shortcoming of projects like ASSETS and Kipepeo is that the benefits are limited to a small number of the community members, spreading the conservation message from the few-hundred people receiving benefits to the 100,000 people surrounding the Arabuko-Sokoke Forest is a challenge (Gordon and Ayiamba 2003). ASSETS parents are both willing and able to spread the conservation message to others, but this will likely require some organizational aid on behalf of ASSETS.

2.2.10 Would you be willing to do forest patrols?

According to the ASF warden and others, communities surrounding the forest need to become more involved in conservation. Francis Kirimi Mbaka, the warden, specifically suggested that communities become involved in protection and patrolling of the forest, “so they feel it’s theirs.”

The ASSETS parents interviewed were roughly equally split between those who would be willing to conduct community forest patrols, provided they had proper permission from the appropriate authorities and that certain safety precautions were taken (e.g. they were in a large group). One parent, who was willing to do the patrols, remarked wryly, “[i]f the forest rangers were doing their jobs right there would be no need [for a parents patrol].” (Michael)

Some women rejected the idea of being a forest guard, as, “that’s only for men. Women cannot go and chase men from the forest.” (Karin). Other participants who were unwilling to act as community forest guards cited safety as the primary cause of their reluctance:

“Those forest rangers doing patrols now have guns. At least they have some weapons to scare thieves. We have no guns, the thieves might gang up on us because we have no weapons to scare them.”

“I’m afraid of elephants, so I would not accept [being a patrol].” (Gloria)

2.3 Parents’ suggestions and criticisms of ASSETS

Most participants were grateful for the support they received from ASSETS and hesitant to criticize a program that has helped them. Nonetheless, a number of suggestions and criticisms of ASSETS emerged during the course of the interviews. A number of participants indicated that they would like to learn more about conservation and the environment. Some participants indicated that their time spent with ASSETS staff was insufficient and that the program is too focused on the students, with too little attention paid to the parents:

“Whatever they [ASSETS] are doing now is good, we normally ask questions in meetings and they answer them, but there is not much time. They spend a whole day with the students but only a few hours with the parents. If we parents were given the same amount of time as the students we could learn more.” (Anna)

“Has your family received a lot of communication from ASSETS or not?”

One meeting, one for the parents and 3 days with the beneficiaries.

Do they need to spend more time with the parents or is it fine now?”

They should teach the parents more about conservation of the environment... they’ve not told us anything about the environment.” (Abraham)

Some participants indicated that meetings were singly focused on financial issues, not conservation, “we [only] know the importance of paying the 300 KSH” (Jacob)

Some participants perceived ASSETS as having a limited scope, suggesting that the project should expand to other community residents:

“It would help if ASSETS could give trees to participants and non-participants because the carvers still need the wood... I wish for ASSETS to continue forever, my children have been helped but I want my friend’s children to be helped to get an education so they have something else to depend upon besides the forest.” (Esther & Michael)

“The involvement of A Rocha with parents should involve not only ASSETS parents, it should also include non-participating parents, especially parents with kids in lower classes, so that when they reach Standard 8 they will already know what the organization is and how it works.” (Emily)

2.3.1 Expanded ASSETS activities

A number of respondents indicated that they wanted to be involved in a greater number of projects, some only wanted ASSETS to help them access existing projects:

“Our main problem is getting the beehives. We can pay the small money. Can ASSETS help us to get to the beehive people?” (Abraham)

“I’d like to learn other activities, like when the environmental officer who came to teach us about nurseries. I’d really like to learn more.” (Emily)

2.3.2 School fees

Some ASSETS participants felt that bursaries were not being issued in a timely manner:

“I send my part of the money, expecting that A Rocha will send theirs, but sometimes they are late to the point where the kids are sent home.” (Gloria)

“The problem is you don’t know when the bursary is coming, or it doesn’t come soon enough... maybe your child goes to school and is sent away for school fees and they don’t know then the fees will come.” (Rachel)

2.4 Learning through ASSETS

Transformative learning, a theory of adult education, describes the process by which people construct more dependable interpretations of life, through a process of assessing the context of their beliefs and opinions, seeking informed or negotiated agreement, and making decisions based on the insight they have gained (Mezirow 2000). Involvement in ASSETS appears to have contributed to instrumental and communicative learning.

2.4.1 Instrumental Learning

Instrumental learning, is task oriented or skills-based learning, and includes learning new information, learning to deduce cause-effect relationships, and learning to share ideas and dialogue (Mezirow 2000).

ASSETS participants acquired a range of new information about the forest and species within, for example:

“We heard that the forest has 273 species of birds and that some are only found in the Arabuko-Sokoke Forest... The forest attracts migratory birds and they are being identified by rings.” (Michael, participant)

“Through research that was done in all the other forests, they found that the elephant shrew was only found in this forest.” (Diana, participant)

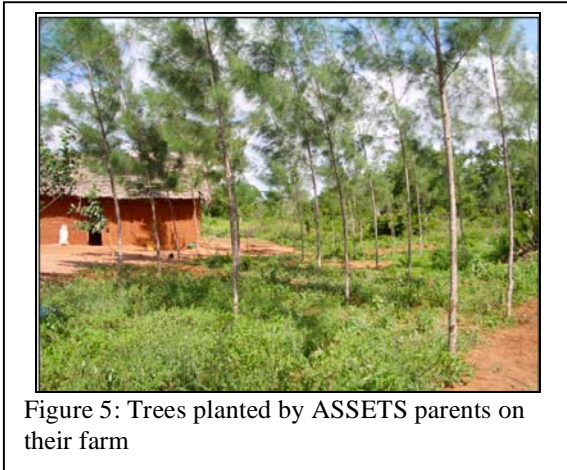


Figure 5: Trees planted by ASSETS parents on their farm

In terms of task-oriented learning, ASSETS participants learned about tree planting on their farm, such as how to space trees when you plant them, how often to water trees, and how to protect young trees from farm animals (Figure 5). Although tree planting is not a major component of the ASSETS program, it is encouraged, as it provides farmers with extra income and lessens their need to go to the forest for wood products. Prior to their involvement in ASSETS, many participants had not realized it was possible to grow trees and sell them for money. Said one participant:

“I learned that a tree is like an asset, you can sell it for income, or use it yourself [for firewood or building]” (James, participant)

The most frequent example of instrumental learning was the case-effect relationship between deforestation and aridity. When asked about the benefit of the forest, nearly all of the ASSETS recipients mentioned the “attraction of rain.” Most of the recipients had “always known this,” or had learned it long ago in school. However, a number of participants indicated that, although they had heard trees attract rain from other sources, ASSETS provided the “emphasis,” and they had not fully believed it until participating in the program. The introduction of the ASSETS program in Kaembeni happened to correspond with a severe drought in the region. This message seemed to have special significance to the participants; given the environmental conditions they were experiencing (Figure 6).

Many participants engaged in a process of critical thinking, examining the current environmental conditions in their area in the context of deforestation, for example:

“How did you come to know that [the land is becoming arid from lack of trees]?”

I didn’t know, but after I went to the meetings I was told. I saw that there are no more big trees here because people are making charcoal... I was told [forests attract rain] and initially I didn’t know it was true, but I proved it [to myself].
(Constance, participant)

Other participants made a similar conclusion based on the history of harvests and deforestation:

“Do you believe it’s true, that trees attract rain?”

I can’t understand how [this works], but during the past years we used to harvest a lot and now our harvest is poor, but we used to have more trees ... I see there is a difference in the weather conditions. I connect the poor harvests with the trees, but I don’t know [the scientific details of this].”

(Jacob, participant)



Figure 6: Kaembeni area palms after years of drought

Another resident:

“During the olden times, there were so many trees and closed forests; we had good harvests. There were less people and less cutting of trees. We used to receive a lot of rain ... now, the harvests are very poor.” (Diana, participant)

Learning to share ideas and dialogue was not a major learning outcome. However, some participants had begun telling others in the community about forest conservation. Observes

one participant:

“Due to the ASSETS program, parents of this community have learned about the destruction of the forest and they now see it as their responsibility to protect the forest and teach others about it – to tell others that what they’re doing [destroying the forest] is wrong.” (James, participant)

As the act of confronting another community member about their activities in the forest is not generally culturally acceptable, the action of speaking out on conservation could also be classified as communicative learning, as it involves cultural and normative values.

2.4.2 Communicative Learning

As opposed to instrumental learning, where competency is measured in terms of being able to complete a given task, communicative competence “refers to the ability of the learner to negotiate his or her own purposes, values, feelings, and meanings rather than to simply act on those of others” (Mezirow 2000, p. 10). Communicative learning involves understanding, questioning, and negotiating cultural and normative values.

Although those community members heavily involved in illegal extraction from the forest are known to the community, the issue is highly sensitive and confronting another person about their use of the forest is uncommon. Community members surrounding the Arabuko-Sokoke Forest who openly support conservation have been known to receive death threats from neighbours (Gordon & Ayiamba 2003). However, some ASSETS participants have begun telling others about the forest, and confronting those people they know to be involved in illegal extraction:

“Before I joined ASSETS, I would see people coming out of the forest with poles or logs for carvings and I wouldn’t pay any attention to them. But, after joining in ASSETS I have the confidence to tell people coming out of the forest about the importance of the forest and about conserving it, and I’m doing it...I normally tell them that if we destroy the forest we’ll be missing some benefits from organizations like A Rocha that help us, and if we destroy the forest it will be gone forever and future generations will be told, ‘there used to be a forest here.’”
(James, participant)

This participant visited a number of people he knew who were undertaking illegal activities within the forest, telling them about the importance of it and warning them of the consequences of being caught. By his account, a number of them had changed their behaviour as a result of his intervention.

Another ASSETS parent took similar action:

“Before I joined ASSETS I would see people cutting trees for poles and I would think it’s alright. But after I attended the meetings with A Rocha I can tell people about the importance of trees... I explain the benefits people can get and the destruction they can cause by cutting trees.” (Marlene, participant)

According to the participant, the three people she was confronting about their illegal pole cutting in the forest had stopped, and were looking for alternative work to earn an income.

Participation in ASSETS led to a variety of learning outcomes, including: learning new information such as the biology of the forest and that trees can be sold for income; learning new skills like how to properly space and water seedlings; and an increased recognition of the connection between deforestation and aridity. Some ASSETS participants took action on conservation issues after participating in the program, including starting nurseries, planting trees in their *shambas*, telling others in the community about the importance of the ASF, or confronting those involved in illegal activities in the forest.

3 Conclusion & Recommendations

Overall, ASSETS participants were very positive about the Arabuko-Sokoke Forest and its conservation. Participants and non-participants alike felt that the importance of the forest and the interest in its conservation were related to the association between trees and rain. However, although many participants were enthusiastic about conservation, few had proactive suggestions as to how to further conservation, apart from “staying out” of the forest. Most ASSETS participants understood that the bursary money was generated from the forest, though many thought that the goal of the program was education rather than conservation related.

Among the wider community in Kaembeni, many ASSETS non-participants were aware that there was a bursary program available for students at Bogamachuko, but did not know of any of the details of the program, like the connection between the bursaries and the forest. However, many of the ASSETS participants expressed a desire to become involved in an ASSETS parents’ association, with a number of participants suggesting that their organization “act as teachers” to others in the community in order to spread the word about forest conservation to non-participants.

The ASSETS participants in this study varied in a number of ways: their relationship to the child (parent or sibling); their involvement in other conservation projects; the number of years they had been involvement in ASSETS; the number of ASSETS recipient children they had; and the number of meetings they had attended. While it is obviously difficult to quantify learning and make conclusive statements about the correlation between different variables, a few generalizations can be made:

- Learning and especially changed behaviours (like planting trees) were more evident in participants that had been involved in ASSETS for a longer period of time. This may be a result of the fact that those who joined the program in the early years received seedlings to start their own woodlot, whereas those who joined more recently did not.
- ASSETS participants who were the parent of the recipient child tended to be more enthusiastic about the program than those participants who were the recipient child’s sibling.
- Participants who attended the ASSETS meetings generally learned more and took more action on conservation than those participants who had not attended meetings, though there were notable exceptions.

Recommendations

1. Conservation of shamba “bushes”

The *shambas* surrounding the west side of the ASF are still comparatively well forested and many people have “bushes” on their *shamba* – small forest patches from which they can access firewood and poles, or make charcoal. However, these bushes are steadily being cleared, and a number of respondents indicated that they had recently “finished” their bushes (Figure 7). Although some of these respondents were passionate about conservation of the ASF, they saw conservation as something that happens within the

forest, not on their farms; there was no indication that they felt that their own “bushes” should be conserved. These areas are important for the maintenance of the forest and as habitat for its species, but ASSETS appears to be focused exclusively on the areas within the Arabuko-Sokoke Forest.

ASSETS should consider expanding the scope of its programming, to consider conservation beyond the arbitrarily defined boundary of the Arabuko-Sokoke Forest reserve. If the forest is to survive, stewardship outside this boundary must not be ignored.

2. Define “Helping”

Further to the above recommendation, ASSETS should consider specifically defining things that people can do to be proactive and “help” the forest, such as conserving trees on their own *shamba* or planting indigenous trees in the forest or on their farms. Many participants were very grateful for the help they received from ASSETS, but unsure of how they could help the forest since many lived some distance from it and had not visited it in many years; in their minds, the only thing they can do to help the forest is to stay away. Given that ASSETS participants generally had no more ideas how to help the forest than non-participants, this component of the program should be strengthened.



Figure 7: *Shamba* near the ASF, cleared of “bushes”

3. Communicating the state of the forest

The fact that many participants felt the forest is “doing fine” is concerning. Those interviewees who felt the forest was under threat used specific examples from their own experiences to illustrate how the forest had changed (e.g. there are fewer *muhuhu*), while those who felt that the forest was doing fine made more general observations – essentially that the forests and trees are still *there*, so the forest is not under threat. ASSETS environmental education could consider using more specific, local examples of how the forest has changed – for example, that there are fewer *muhuhu* now than before – to better communicate the state of the ASF.

4. ASSETS membership: pick a person and stick with it

ASSETS should consider treating participation in ASSETS as membership in an organization by signing up a specific member of the family as the ASSETS member. When a meeting is called, that person should attend, not simply the person for whom it is most convenient that day. Stress that the ASSETS parent should be the parent who is most often available for meetings, bearing in mind that ASSETS participants who were the parent of the recipient child tended to be more enthusiastic about the program than those participants who were the recipient child’s sibling.

5. Communicate in a language people understand

Future written communication with the parents should be in a language they understand fluently, not English. This includes the parents' section of the application form. Literacy among ASSETS parents is often low, provides an opportunity for A Rocha (alone, or in partnership with other organizations in the area) could consider implementing an adult literacy program, with a conservation focus.

6. Parents Pledge

The ASSETS application form contains a "confirmation" where applicants and parents pledge to maintain a wood lot at home and to protect and conserve the forest. However, when asked about any requirements of the ASSETS program, only a handful remembered the confirmation. This may be a result of the fact that the confirmation was in English, that the participant was unable to read, or they may have simply forgotten. In addition to the confirmation on the application form, when new ASSETS parents have their first meeting, ASSETS could consider administering a group "pledge" and then have parents sign and submit their confirmations at this time.

7. Parents Association

ASSETS participants were willing and enthusiastic to join a parents association – to help conserve the forest, to spread the word about the importance of the ASF to non-participants, and to increase local economic development. A Rocha should encourage the parents to organize the association and provide whatever support they can, financial, technical, organizational or otherwise, as they attempt to implement their ideas. In some instances, it might be beneficial for A Rocha to partner with other organizations in the area, or at least provide ASSETS participants with the information they need to become involved in other projects (e.g. beekeeping).

References

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Appendix I: ASSETS Participant Interview Schedule

Obtain: name of child, the year they began ASSETS, length of time the family has lived in the area, their distance from the Arabuko-Sokoke Forest and/or Mida Creek, attempt to assess the extent and type of resource use if possible.

Tourism

- Have you ever seen a tourist in your area? (Y/N)
 - Were you aware that they visit the Arabuko-Sokoke Forest?
- Why do you think tourists come to the Arabuko-Sokoke Forest? What do they like and dislike?
- Does your community benefit from tourism in the forest? How?

General Questions about the Forest

- Why is there interest in conserving the Arabuko-Sokoke Forest?
- What can people do to help the forest? What can people do to hurt the forest?
- What, if any, good things does the forest do for you and people in your area?
- Does the forest bring any problems? Do you have any problems with animals? (Y/N, explain)
 - How often do they come?
 - Last time they came?
 - Damage done?
 - What do you see as the solution to these problems?
- Is the Arabuko-Sokoke Forest of any value or significance to you? (Y/N, explain)
- Would you be happier if the forest were not there? (Y/N, explain)
- Would you be happier if all or part of the forest was given out for farming? (Y/N, explain)
- Do you think that the Arabuko-Sokoke Forest should be closed off to people or should people be allowed to access certain things with regulations?
 - Which things?
- Is the Arabuko-Sokoke Forest under threat or doing fine?
- Does the Arabuko-Sokoke Forest belong to the people or the government?
 - Is that the way it should be?

Resource Use in the Forest

- What resources do you get from the Arabuko-Sokoke Forest?
 - Suggest legal activities, such as mushrooms, honey, wild fruit, attempt to assess illegal use.
- Do you plant any non-food trees on your shamba?

Reporting

- Have you ever heard or anyone being reported or caught for illegal activities in the Arabuko-Sokoke Forest?
- Is it common for people in the community to report each other?

-Have you ever heard of a situation where somebody was threatened, hurt, or had their home or shamba harmed because they reported someone?

About ASSETS

-How and why did you become involved with ASSETS?

-Do you know who *A Rocha* is?

If no, then explained that it's the organization that administers the bursary program.

-Why do you think that *A Rocha* started ASSETS?

-What do you see as the goal of ASSETS?

-How does ASSETS work and where does the money come from?

-Why was your child given an ASSETS bursary?

Are you aware of any other requirements [to get the bursary]

-Would your child have been able to go to secondary school without this bursary?

Activities & Learning:

-Has your child [the recipient] ever told you or your family anything about the Arabuko-Sokoke Forest, conservation, or the environment? What?

-Did that make you think differently about the forest, or behave differently in the forest?

-Does he/she tell others in the community about the forest, conservation, or the environment?

-What types of ASSETS activities have you participated in?

-Prompt: recipient days, tree planting, parents meetings

How often? When was the last time?

-Do you think that participating in these activities is a good use of your time?

-Do you find that you learn while you are participating in these activities?

-Have you learned any new skills since you began participating in ASSETS?

Explain and expand: what, how, why, etc.

-Have you learned any new ideas?

Explain and expand: what, how, why, etc.

-Does participating in ASSETS make you think in new ways about your activities in the environment?

Explain and expand

-Have you changed any of your behaviours as a result of participating in ASSETS?

Explain and expand

-Has your involvement with ASSETS changed the way you use the forest? (Is the way you use the forest now the same as it ever was or different?)

Explain and expand

-Has your involvement with ASSETS changed the way you think of the forest? (Is the way you think of it now the same as it ever was or different?)

Explain and expand

-Do you know any other ASSETS parents?

-Would you be willing to be involved in an ASSETS parents association?

-What kinds of activities could they do?

- Would they be willing to do forest patrols?
- Do you other people in the community know about ASSETS?
What do they know? Do you tell other people about ASSETS? What? Has anyone you told changed their behaviours or attitudes about the forest? Do you think most other people would be interested in joining?
- Have you had any problems with ASSETS?
- What would you suggest to improve ASSETS?

Other conservation programmes:

- Besides ASSETS, have you been involved in any projects:
- Do you know of the following, and have you been involved with them:
 - Kipepeo
 - Aloe farming
 - Mushroom farming
 - Beekeeping
 - Silkworm farmingIf yes, for how long, and what they learned about the forest and conservation
- Have you ever heard of FADA of ASFADA (Arabuko-Sokoke Forest Adjacent Dwellers Association)?
- Do you have any comments, anything to add, or anything to ask me?

Appendix II: ASSETS Non-Participant Interview Schedule

Name, distance from the forest, length of time in the area.

Tourism

- Have you ever seen a tourist in your area? (Y/N)
 - Were you aware that they visit the Arabuko-Sokoke Forest?
- Why do you think tourists come to the Arabuko-Sokoke Forest? What do they like and dislike?
- Does your community benefit from tourism in the forest? How?

ASSETS

- Have you heard of the ASSETS programme or A Rocha?
 - Prompt: it's a conservation programme that awards bursaries to secondary school students.
- Where did you find this out? What have you heard about it (+ve and -ve)?
- Would you want to join the ASSETS programme if you had the chance?

General Questions about the Forest

- Why is there interest in conserving the Arabuko-Sokoke Forest?
- What can people do to help the forest? What can people do to hurt the forest?
- What, if any, good things does the forest do for you and people in your area?
- Does the forest bring any problems? Do you have any problems with animals? (Y/N, explain)
 - How often do they come?
 - Last time they came?
 - Damage done?
 - What do you see as the solution to these problems?
- Is the Arabuko-Sokoke Forest of any value or significance to you? (Y/N, explain)
- Would you be happier if the forest were not there? (Y/N, explain)
- Would you be happier if all or part of the forest was given out for farming? (Y/N, explain)
- Do you think that the Arabuko-Sokoke Forest should be closed off to people or should people be allowed to access certain things with regulations?
 - Which things?
- Is the Arabuko-Sokoke Forest under threat or doing fine?
- Does the Arabuko-Sokoke Forest belong to the people or the government?
 - Is that the way it should be?

Resource Use in the Forest

- What resources do you get from the Arabuko-Sokoke Forest?
 - Suggest legal activities, such as mushrooms, honey, wild fruit, attempt to assess illegal use.
- Do you plant any non-food trees on your shamba?

Reporting

- Have you ever heard or anyone being reported to KWS or the Forest Department for illegal activities? (ask for what, were they outsiders/locals, etc.)
- What do community members do when they catch someone doing something illegal in the forest? Does the chief get involved?
- Would most community members report outsiders for illegal activities? What about locals?
- Have you ever heard of a situation where somebody was threatened, hurt, or had their home or shamba harmed because they reported someone?

Other conservation programmes:

- Have you been involved in any projects in the community?
- Do you know of the following, and have you been involved with them:
 - Kipepeo
 - Aloe farming
 - Mushroom farming
 - Beekeeping
 - Silkworm farmingIf yes, for how long, and what they learned about the forest and conservation
- Have you ever heard of FADA of ASFADA (Arabuko-Sokoke Forest Adjacent Dwellers Association)?
- If someone had a proposal to start an organization, what kind would you prefer?
- Is the way you use the forest now the same as it ever was or different?
- Is the way you think of the forest now the same as it ever was or different?
- Do you have any comments, anything to add, or anything to ask me?