

ANNUAL | 20 REVIEW | 21























**DISCOVER** A Rocha Kenya A Rocha Kenya (ARK) is one of 21 national organisations of A Rocha, an international Christian conservation organisation that is committed to practical biodiversity conservation through scientific research, environmental education and sustainable community-based conservation programmes.

A Rocha bases its work on the recognition that the Bible has clear teaching about the importance of the environment as God's creation, of his love for it and of our responsibility to look after it and not over exploit, destroy or degrade it.





2021 saw the relaxation of the main restrictions and the 'dryness' of the COVID-19 pandemic and a return, moreor-less, to normal life in Watamu. Numbers of visitors at the A Rocha centre picked up and programmes, including environmental education, went back to full swing. However, 2021 will be remembered by many as a year that was dry in the very real sense of the word with the rains starting early in April but stopping almost immediately and not returning. This heavily impacted our community work, particularly the farming, with none of our farmers being able to raise a crop of any sort and the drought driving more people to cut down trees to turn into charcoal.

Despite this and other challenges, you will read in this review how the A Rocha Kenya team still managed to achieve some magnificent results: continuing to build strong relationships with farmers, church members, government officials, teachers, researchers and teaching about the importance of caring for God's creation. It also tells of how we were blessed with significant funds for securing the threatened forest of Dakatcha.

We will also report on the excellent ongoing work by our marine team on sharks and corals and how the marine governance initiative stepped up several notches in its support of KWS and the implementation of the marine protected area management plan. Our work with the fishing communities around Mida grew, culminating in the first ever Community Fishing Competition for

Kenya – planned to be the first of hopefully many annual such events raising awareness for marine conservation and instilling a pride and respect for sustainable artisanal fishing.

Furthermore, you will read of the first inklings of unravelling the mystery of where our Afrotropical migrant birds disappear to each year to breed - a highly exciting project in collaboration with the Swiss Ornithological Institute. The Kenya Bird Map, for which A Rocha is a lead partner, moved to a new level with funds from JRS Biodiversity Foundation / GBIF to digitise historic bird records and started to develop tools for accessing the data more effectively for researchers and conservation authorities alike. Finally, the longrunning bird migration studies at Ngulia, Tsavo West National Park, saw another successful season under A Rocha's leadership with 5,904 Palearctic migrants ringed in just 10 days.

And so, despite the dryness, we felt the truth of Isaiah's words, "Water will gush forth in the wilderness and streams in the desert. The burning sand will become a pool, the thirsty ground bubbling springs." We look forward with hope to seeing more of this in the year to come and gratitude for the year past.

Dr. Colin Jackson A Rocha Kenya Founder and Director

## **PROGRAMMES**

Terrestrial Research Scientific Research and Monitoring Marine Research Environmental Education Marine Governance Conservation **Creation Care** Farming God's Way Karara Conservation Centre Conservation Watamu Conservation Centre centres Dakatcha office





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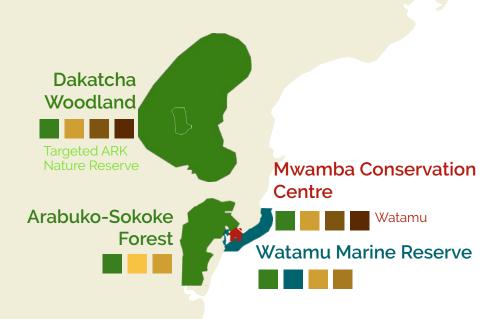
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## **ECO-BURSARIES**



ASSETS (Arabuko-Sokoke Schools and Eco-Tourism Scheme) uses funds generated from eco-tourism to provide 'eco-bursaries' for local children to attend secondary school. The bursaries are closly tied to the conservation of two of Africa's most important eco-systems: Arabuko-Sokoke Forest and Mida Creek.

In 2021, we supported 129 students briging the total number of beneficiaries supported since 2001 to 735 students.

In response to ASSETS, the parents of thebeneficiaries formed a conservation association called 'Muvera wa ASSETS' (Thank you ASSETS) with the objective of reducing pressure on the forest and creek through sustainable alternative sources. Muvera also acts as a conservation ambassador for A Rocha as they endeavor to pass on what they learn to community members around them.





#### Muvera Wa ASSETS

In collaraboration with the Kenya Community Development Fund, we continued to work with community members on a range of alternative sustainable livelihoods:

#### Fireless cookers

A fireless cooker is an insulated container that allows food to cook after it has been removed from a heat source. This vastly reduces the amount of fuel required and comes with the added health benefit of reducing exposure to smoke for the cook.

This initiative aims to reduce the pressure and dependency on the Arabuko-Sokoke Forest for firewood as well as reduce the amount of wood burnt which in turn reduces carbon released into the atmosphere. As well as the additional health benefits, using fireless cookers lowers the amount of time needed to collect firewood.

23 beneficiary parents were trained on how make and use a fireless cooker, and are sharing this new technology with their neighbours.

#### **Solar lamps**

20 ASSETS beneficiary families were given lantern solar lamps to provide alternative lighting means. This also helps the students as they can comfortably do their homework and further studies in the evening.

#### Tree planting and tree nurseries

Six tree nurseries were established in six ASSETS schools under the care of both Muvera Wa ASSETS and Wildlife Club of Kenya (WCK) students. 10,080 tree seedlings were planted both in schools and community spaces.



I use less firewood and spend less time on direct heat while cooking. I can also do my other household chores without worrying that the food will burn.

Gladys Msuko, Mijomboni community



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#### **Nurdle education kits**

In October, we received a Nurdle Education kit from NurdlePatrol.org. Nurdles are small plastic pellets which form the raw materials for plastic products. The presence of these pellets is dangerous and can harm aquatic life, such as birds, turtles and fish, who mistake them for food, resulting in blocked intestines which can eventually lead to death.

#### In schools

After a long break due to Covid19, we were happy to be back in schools to raise awareness about Elasmobranchs (sharks, rays and guitartfish). We reached 809 students from eight schools close to the Watamu Marine National Park, helping them understand more about the Marine National Park, its benefits and threats, and motivating them to actively protect the marine park. This was received with notable enthusiasm and a genuine desire to learn and help.





## **Community fishing competition**



## Conservation events are an effective way of raising awareness about environmental matters.

They offer participants an opportunity to closely interact with the resources, giving a first hand experience of the status of the resource at hand and influencing behavioral change. Fishing competitions have happened in Watamu for decades - but for the deep sea sports fishermen in huge boats and expensive gear. A Rocha Kenya organised the first ever Community fishing competition in the Watamu Marine Protected Area (WMPA). Seven fishermen from Mida, Uyombo and Sita villages participated in the competition, which involved the use of of no nets but only lines with hooks of a specific, legal size, to emphasise the importance of sustainable fishing methods and conservation of elasmobranches in the WMPA.

The objective of this event was to:

- empower and motivate fisher-folk to appreciate and improve their profession and work
- enhance enthusiasm towards the conservation of marine resources by promoting sustainable fishing methods
- foster good relationships among fishermen, fish traders, consumers, and other stakeholders to enhance collaborations in the management and governance of the Watamu MPA
- create awareness about the importance of sharks and rays

After being out for several hours, the seven fishermen brought in their catch, weighing only 3 kgs in total, evidence of the deteriorating state of the reserve. This is due to the increased use of illegal fishing gear and poor local governance within the local fishing community.

At the end of the competition, each participant was awarded a certificate, a small financial reward and the team with the highest catch was offered a dinner voucher by Turtle Bay Beach Club hotel. This event was publicized in local and national media, and many fishermen committed to take part in the next event.

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## MARINE GOVERNANCE

#### **Governance workshops**

Good governance of natural resources such as a marine protected area is critical for the maintenance of the rich biodiversity present together with the livelihoods of a large and diverse number of people living adjacent to it.

71
stakeholders
gathered over three
workshops

In Watamu, A Rocha has been privileged to take a lead in working closely with KWS and key conservationists to devise a good marine governance structure. This was part of a three year partnership with the University of St Andrews, Scotland, which has resulted in an exciting initiative drawing in over 70 stakeholders to contribute to a robust system.

A Rocha led two key workshops in 2021 with stakeholders to both share social, economic and ecological trends within the MPA since 1968 and to obtain their input to the initiative. This has synchronised with KWS seeking to implement a management plan for the MPA and provided an excellent model for doing so. As a result four focal area working groups were formed with 'Specific Watamu Action Teams' (SWATs) being created for each component of the plan. The working groups were commissioned by Mr Samuel Tokore, Senior Assistant Director, Coast, KWS (Mombasa).





40 stakeholders trained in Mida and Uyombo

#### **Alternative livelihoods**

Fishing is difficult during *kusi* season, marked by long rains and rough sea due to strong south easterly winds. Most fishermen being artisanal, they cannot conduct deep sea fishing because they do not have the proper fishing equipment.

A Rocha is working with fisher-folk families to reduce illegal fishing (e.g. using under-size mesh nets) during 'kusi' by piloting Farming God's Way as an alternative livelihood. Early results were excellent, but failed rains meant we will need to try again next year.

18
staff members and volunteers working on this project

## Using technology to improve marine governance

A Rocha Kenya received Virtual Reality (VR) headsets and 360 cameras from the University of St Andrews to help raise awareness about marine conservation. In collaboration with the university's Computer Sciences Department, ARK is working to develop VR videos on the Watamu Marine Protected Area to help children and community members understand topics such as ocean biodiversity and coral bleaching.







The frenzy for land purchasing continued unabated across the Dakatcha landscape through 2021 coupled with relentless cutting of trees for charcoal. Raising further funds to secure the remaining sections of standing forest holding the Sokoke Scops Owl remained a priority. Land prices rocketed 2-3 fold over the previous year and continue to rise, adding to the urgency.

In 2021, with support from generous individuals and key donors, we have managed to increase the area of forest secured by almost two and a half times from the end of 2020, reaching a total of 3,995 acres / 1,616 ha of protected habitat. This forest is known to be a home for the Endangered Sokoke Scops Owl, Sokoke Pipit and Golden-rumped Sengi among many other species.

The area secured so far is a series of forest blocks spread across the target area of forest known to hold these species. The area currently forms two main sections with smaller outlier plots where forested land has been offered for purchase by landowners. We now aim to close the gaps between blocks and create a single block of forest. This will invariably include areas of abandoned farmland where forest has already been cleared, however we are already seeing signs of of hope through natural regeneration of forest trees.

To clarify the status of the land as part of a reserve, we have installed concrete beacons at key plot corners and border points around the edge of the reserve to clearly mark it as a reserve.

This goes hand in hand with raising further awareness among the adjacent community about the reserve and why it is being created. We seek to work in partnership with other concerned entitites to engage with the wider community and help them to use it sustainably.











### **Engaging Dakatcha communities in conservation efforts**



With increasing pressure on the reserve due to the widespread clearance of trees to make charcoal, we have employed six scouts from the local community to patrol the reserve. They work to inform and enthuse community members about protecting what is an incredibly unique forest on their doorstep and stop any illegal cutting and snaring of wildlife. While charcoal burning is still rampant in the area, it has thankfully stopped within the blocks of forest making up the reserve. The scouts have further reported an increase in the number of sightings of larger mammals such as Bushbuck as well as the Golden-rumped Sengi.



#### **Creation Care**

As Dakatcha is a predominately Christian community, churches are a fundamental channel to reach local communities. We worked with five churches taking them through a series of six sessions on biblical teachings linked to Creation Care. This was an eye-opener for many congregants, who were led to appreciate the beauty of creation and understood their responsibility in caring for it.

To complement biblical teachings, we trained farmers on sustainable farming practices using the Farming God's Way programme. In 2021, 163 visits were conducted to provide support to the farmers, especially to farmers implementing the method for the first time.

The number of farmers practising FGW increased from 50 to 72. One of the farmers who had started on a small piece of land decided to more than double the size of land farmed following a successful harvest!

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In 2020, the Terrestrial Science Team started an exciting four-year study to uncover the hitherto unknown migration patterns of two Afro-tropical migrants: the Red-capped Robin Chat and the Mangrove Kingfisher.

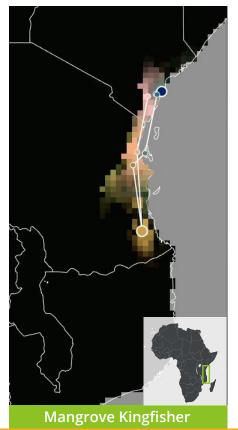
To learn about the migration of these two species, 10 Mangrove Kingfishers and 15 Red-capped Robin Chats were equipped with geolocators - a light-weight device used to map migration routes, requiring recapture in order to retrieve the data.

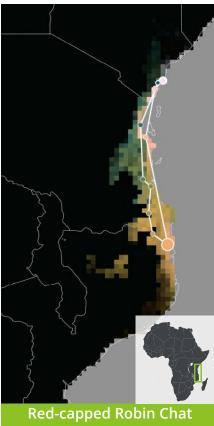
In 2021, the team retrieved seven geolocators (two kingfishers and five robin chats). Initial data analysis reveals that MKs move to the coast of Tanzania while RCRCs go further south, as far as Mozambique. 30 more geolocators were deployed (15 for MK and 15 for RCRC) in 2021, with the hope that the team will recapture more birds next year for further analysis.



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#### **Waterbird counts**

21 sites of fresh, salt and brackish water were visisted and surveyed, spanning from Mombasa to Tana River Delta. Monthly counts at Mida Creek and Sabaki River Mouth were conducted. A total of 114,006 individual birds were counted of 106 species.

#### **Butterfly surveys**

Over 240 butterfly surveys were conducted along the Mwamba Nature trail with 141 species identified to date, and published on **GBIF**. The unidentified species were collected as specimen for further analysis at the National Museums of Kenya.

### **Bird ringing**

Over the year, a total of 408 birds of 43 species were ringed in Watamu. The highlight was catching a migrating Marsh Warbler, ringed in Bulgaria! The weekly ringing sessions intensified between May and July to increase chances of re-capturing and equipping MKs and RCRCs.

#### **Dakatcha Woodland**

A total of eight Bioblitz sessions were conducted with 14 grids being surveyed for insects,6 for herps and 36 grids for the Sokoke Scops Owl (SSO). Of the 36, 15 grids were confirmed to have the owl.

31 camera trap sessions were carried out across 27 grids. An intial checklist of 26 mammal species for the A Rocha Dakatcha Nature Reserve and its immediate surroundings was published on **GBIF**.

Ten audio-moths were deployed across nine grids to record nocturnal bird and animal sounds primarily to detect the presence of Sokoke Scops Owls.









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Every year since 1969, bird ringers meet at Ngulia Safari Lodge in Tsavo West National Park to participate in the ringing of Palaearctic migratory songbirds.

These are birds who breed in Europe and Asia and migrate to spend the winter in Africa. Most of these birds fly south at night, passing over Tsavo in November and December. On dark, misty nights, the migrating songbirds become disoriented and land in the bush around the lights of the lodge.

This is a rare opportunity in the phenomenon of bird migration around the world – being able to trap and tag birds that are in active migration flight. The birds are gently caught, carried in cloth bags, identified, measured, and fitted with a light, uniquely numbered metal ring, before being released to continue their journey.

Pioneered and led by Dr David Pearson and Graeme Backhurst for 45 years, the project is now headed up by A Rocha together with the Nairobi Ringing Group based at the National Museum in Nairobi.





A total of 592,932 Palearctic migratory birds of 72 species and 17,851 individuals of Afrotropical birds of 234 species have been ringed in the last 52 years (1969-2021) at the site.

In 2021, 5,904 Palaearctic migrants of 32 species and 249 Afrotropical birds of 69 species were ringed. These data help us track migrant bird populations and enable us to gain a better understanding of how birds migrate.

#### Palearctic migrants ringed in 2021:

Jacobin Cuckoo

Eurasian Nightjar

Eurasian Sparrowhawk

Eurasian Roller

Red-backed Shrike

Isabelline Shrike

Ortolan Bunting

River Warbler

Eastern Olivaceous Warbler

Upcher's Warbler

Olive-tree Warbler

Basra Reed Warbler

Great Reed Warbler

Sedge Warbler

Eurasian Reed Warbler

Marsh Warbler

Common House Martin

Barn Swallow

Sand Martin

Willow Warbler

Eurasian Blackcap

Garden Warbler

Barred Warbler

Common Whitethroat

Rufous Bush Chat

Spotted Flycatcher

Irania

Thrush Nightingale

Common Nightingale

Common Rock Thrush

Isabelline Wheatear

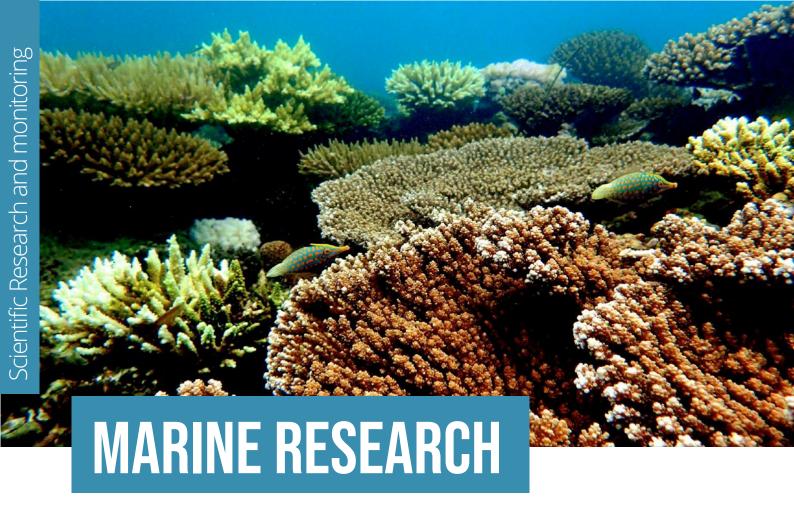
Northern Wheatear











### **Coral Reef Report Card**

Watamu Marine National Park (WMNP) is one of the oldest no-take Marine Protected Areas (MPAs) in the world, established in 1968. Since then, the park has been effectively protected against local human threats, such as fishing and unsustainable coastal development.

However, the coral reefs in the park face the global threat of increasing thermal stress and coral bleaching. In collaboration with Kenya Wildlife Service, A Rocha Kenya has been monitoring the coral reefs of WMNP for over 10 years.

In 2021, we produced a Coral Reef report card, summarizing evidence available on:

- Past changes to WMNP's corals reefs from 1983-2020
- Present resilience of coral community, with signs of hope and ongoing issues
- Future action to protect and even improve the park's coral community

Access the Report Card **here**.



#### Discover the marine life of WMNP



The WMNP is a important breeding ground for a number of critically endangered and near threatened species. Our marine team carried out 16 scuba surveys and deployed Baited Remote Under Water Video Stations (BRUVS) along the slope to find out more about the habitat; sharks and ray populations and other biodiversity in the area.



Halavi Guitarfish - Critically endangared frequently seen in the sandy bottoms and seagrass



**Honeycomb Stingray** - *Endangered*Diamond-shaped, its body width is about 1.3m



Whitespotted Eagle Ray - Endangered Large ray of up to 3m wingspan and 5m long



**Blacktip Reef Shark** - *Vulnerable* Small shark measuring approximately 1.6m

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The A Rocha family helps to protect 450,000 hectares of tropical forests across four African landscapes. Yet a wealth of data on these landscapes is still poorly accessible, as it is either buried in reports or museum collections. If digitized and published, these data could be used in making informed and sound conservation decisions and policies.

With funding from JRS Biodiversity Foundation, A Rocha Kenya in collaboration with 10 other organisations started working on another Biodiversity Information for Development (BID) project on raising the profile of data for conservation of four forested African landscapes notably the Atewa forest of Ghana, Kwande and Oban-Liku in Nigeria, West Bugwe in Uganda and the coastal forests and kayas of Kenya — all being of international conservation importance.

Within this project, we are digitising over 130,000 records from 55 different datasets ranging from birds and mammals to butterflies and mushrooms.

#### In 2021 the team:

- held a virtual inception meeting with 15 participants attending from 10 partner organisations,
- trained partners on data entry according to the strict Darwin Core Standard and how to then clean data thoroughly, write good metadata and finally publish the data on the GBIF database,
- expanded the GBIF network by registering A Rocha Uganda as a publisher and ABRI on the GBIF Registry of scientific collection,
- digitised and organised many thousands of records for publishing.

Check out the **GBIF website** to view our published datasets.

**Pod Mahogany Tree** (*Afzelia quanzensis*) - locally known as 'mbambakofi', this deciduous tree with extremely hard wood grows up to 35 metres tall. It is used for timber and is also an ornamental shade tree. It is among the 328 plant taxa recorded in the initial **Plant checklist of the A Rocha Kenya Dakatcha Nature Reserve**. The publication of such datasets enables wider usage and informs decision-making for the conservation of plants and other biodiversity.















# **SOKOKE FOREST MTB CHALLENGE**



### **Racing for conservation**

May 2021 saw the third edition of the Sokoke Forest MTB Challenge - a three-day sporting event to raise awareness about and funds for ASSETS eco-bursary scheme. The event started on Day 1 with an untimed fun ride of c.50 km followed on Day 2 with a shorter family fun ride of c.15 km. The main challenge (70km) took place on the third day, with riders competing for cash and non-cash prizes.

Apart from a great biking event, the Sokoke Forest MTB Challenge aims to conserve the rare and unique wildlife in Arabuko-Sokoke Forest and give children living in poverty around the forest a chance of an education and a future by raising funds for eco-bursaries.

These bursaries are distributed to children in communities living adjacent to Arabuko-Sokoke Forest and Mida Creek through ASSETS – the Arabuko-Sokoke Schools & Eco-Tourism Scheme. These eco-bursaries support children through four years of secondary school and are closely linked to practical conservation action to protect the unique yet threatened habitats of the forest and creek.

A big thanks to Turtle Bay Beach Club and Ocean Sports Resort for helping to organise the event and to Lordship Africa for sponsoring the event.

















### The main challenge

Only two weeks after COVID restrictions were lifted, we were delighted to have 72 people register for the event. Of these, 55 entered the main Challenge through plenty of deep sand! The 70km route took the cyclists through coconut plantations, along mangrove forests, rural villages, and through the heart of Arabuko-Sokoke Forest, up gruelling climbs and down challenging descents. It started and ended at Turtle Bay Beach Club by the white sands and azure water of the Indian Ocean.

Kenneth Karaya took first place for the mens category, with Jordan Schleck only a second behind him. Geoffrey Langat followed four mins later, with David Kinjah and Davidson Kamau coming in fourth and fifth respectively.

This race is the only one in Kenya to give equal prize money to women as for men. For the Ladies, Nancy Debe came a clear first (9<sup>th</sup> overall), followed an hour later by Dinnah Safari, then Jennifer Kanini, Julia Miringu and Margaret Ashley.

The youngest rider, only 15 years old, came in 25<sup>th</sup>, beating 30 other riders!

This successful event allowed us to raise over half a million Ksh toward eco- bursaries. Join us next year, on 20 and 21 May 2022!

## Family fun ride

A day before the main challenge, a family fun ride was organised for 15 young participants aged 6 to 15. A 12km route was followed, taking the young riders through local villages to the edge of the mangrove forest of Mida Creek.

An award-giving ceremony was held at Turtle Bay Beach Club where all the particitipants received a race certificate and a medal.

Find out more about the event on the dedicated website: **sokokeforestmtb.or.ke** 

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Jeremy and Laura Webb, together with their three daughters Phoebe, Abigail and Joy, joined the hospitality team in August after a long wait due to Covid restrictions. As they work with the rest of the team, the Webbs hope that when you visit you will find a warm family to welcome you and that you'll leave with plans of coming back!

#### Our guests

Over the years, Mwamba has hosted hundreds of guests, researchers, schools groups and volunteers from all over the world. This was disrupted in 2020 due to the pandemic, but we were happy to welcome 347 guests in 2021.

There has been a growing popularity for staying at Mwamba amongst kite surfers. We are ideally located on the best section of beach for kite surfing with a kite school operating right in front of us.

We are always encouraged by our repeat guests who have made this a home away from home. Our doors are always open, you can find us on <u>Booking</u>. <u>com</u>, <u>Airbnb</u> or write to us at <u>mwamba@arocha.org</u>.



**Booking.com** 



#### **Our volunteers**

Worldwide, volunteers form an essesntial part of the A Rocha team. They come in from different walks of life and all ages but with a common goal: to learn and to offer a helping hand. They generously give their time and skills in our different areas of work, contributing in a big way to the mission and vision of A Rocha.

In 2021, we hosted 20 volunteers and interns from both within Kenya and overseas. A Rocha aims to build capacity of young kenyans and train them up to be future conservation leaders all over the world.

If you are interested in our internship programme please write to us at <u>volunteers.kenya@arocha.</u> <u>org.</u>









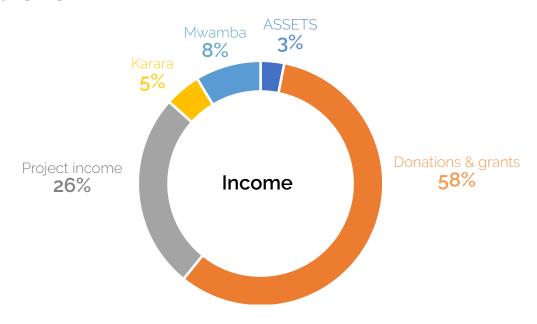


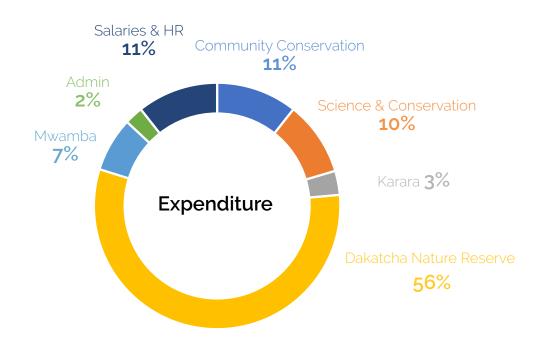
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## FINANCES AND FUNDRAISING

2021 was marked by a significant increase in our income, reaching a high of Ksh 71,790,560 (\$604,960), 92% of which was grant income, and c.60% of this was for land purchase in Dakatcha Woodland. Our total expenditure was Ksh 97,774,726 (\$823,921).

We are grateful to donors, partners, friends, foundations, organisations and churches that have supported us this far. Every gift that we have received has been helpful in keeping the work of A Rocha Kenya going.





### Over a quarter million dollars spent on land purchase

Land purchase has accelerated further in 2021, with a total of KSh 33,000,000 (\$278,012) spent on acquiring land to extend the A Rocha Dakatcha Nature Reserve. The Reserve now spans over 3,995 acres / 1,616 ha.

Thank you to our partners and donors in this endeavour to save Dakatcha Woodland!











## Would you like to support our work?

Our funding priority for 2022 is the Arabuko-Sokoke Schools and Eco-tourism Scheme. We appreciate your contribution to help us fund as many eco-bursaries as possible for children living adjacent to key habitats for conservation.

Click <u>here</u> to read more and donate or go to arocha.org/en/projects/a-rocha-kenya-assets.



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