

Gobabeb Times



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As readers of the Gobabeb Times will know, Gobabeb Training and Research Centre is going through a state of transition. That means that the staff and other residents at Gobabeb have, since 1 March, worked on making the Centre more effective and efficient in everything it does. A key concern at the start of the transition period was communication amongst resident staff and others involved in the programme. Based on weekly staff meetings and monthly reports from all staff, internal communication has improved immensely and continues to do so. Visitors have also commented on receiving a warmer welcome, and look forward to the ongoing changes when the scientific atmosphere becomes a more professional, dynamic underlying tone.

The transition period has been given what will amount to a six-month extension and it is expected that a new Director will be in place early in 2012. Meanwhile, the highlights of the first six months of the transition period have been several. They included the agreement with the Geological Survey and its German counterpart, the BGR, for Gobabeb to carry out a research and monitoring programme on behalf of the Strategic Environmental Monitoring Plan addressing the uranium rush. The long-negotiated MoU with the Max Plank Institute for Biogeochemistry, Tall Tower Atmospheric Gas Measurements (TAG) Group has finally been signed and we expect their installation to be functioning within six months. The ongoing microclimatology programme is being expanded and visiting scientists have continued their individual programmes ranging from analogue weathering of Mars rocks to internal structure of the Namib dunes. The signature programme of Gobabeb, its long term ecological monitoring, is being reinstated and will again be the background basis for all activities and programmes of visitors and residents alike.

In terms of infrastructure, the new battery bank to upgrade the solar energy system has been tendered and will be installed in mid-September while the extension to the solar panel array will be available toward the end of the year. When the inverter, damaged by lightning early in 2011 is fully operational again, Gobabeb will have a new expanded energy system to support the envisaged, redesigned research and training programmes. This, of course, has been accompanied by attention to the aging solar water heaters, to the trickle filter to maintain the quality of the wastewater for recycling, and providing an overall paint job to enhance the appearance of Gobabeb.

On the overall governance side, the management committee has been busy and regularly updated about developments on site at Gobabeb and it is expected that the Board of Trustees will discuss and approve the new management structure and the terms of reference for key management positions in September. With that the transition period will be fully on track for putting the Gobabeb Training and Research Centre firmly on its trajectory for the future.



The MEG3 project, Modules of Education at Gobabeb, supports Gobabeb's education and training programme. Three phases of the project have been funded by the Finnish Embassy over the past six years, and funding continues until the end of 2012. The function of MEG1 was to collate information into an accessible resource for trainers, and MEG2 continued expanding on the materials available while providing training opportunities at Gobabeb. Much of the resource development is based on Enviroteach, a set of environmental education resources developed for Namibian teachers.



A learner from Hanganeni Primary School of Swakopmund setting up a pitfall trap in the Gobabeb dunes ecosystem during a training visit.

MEG3 offers opportunities for schools in the Erongo Region to participate in syllabus-related, research-based training courses at Gobabeb, and it has a regular programme with the nearby rural school, JP Brand Primary (Utuseb). The project subsidizes a range of visiting school groups and it funds the digitization of environmental education (EE) materials and activities for the use of teachers. Furthermore, there are programmes for environmental clubs at schools in Swakopmund and Walvis Bay, with a focus on smaller groups of learners who are members of these clubs.

To ensure good liaison between schools and Gobabeb, a coastal office has been opened at the Walvis Bay Multi-Purpose Centre. Rufina (or Kela) is employed by the project and is responsible for disseminating information that promotes Gobabeb's initiative to educate learners in the region about the environment, scientific reasoning, critical thinking, teamwork and appropriate technologies. She assists the focal teachers of the various MEG sponsored schools with the running of environmental clubs, which are a means of ensuring the sustainability of environmental education at these schools. She runs weekly activity sessions with the emphasis on hands-on learning directly from the environment. Apart from the weekly sessions, the learners also receive extensive research-based training at Gobabeb during holidays and certain times of the year. Rufina deals with a group of approximately 70 grade 6 learners of three schools in Walvis Bay (Narraville, Flamingo and Tutaleni Primary) and three in Swakopmund (Hanganeni, Vrede Rede and Festus Ganteb Primary).

At Gobabeb, Laura and Annetjie (trainers) run the training courses, assisted by interns as necessary. During the second schools semester, Gobabeb has had visits from four MEG3 funded schools: the JP Brand Primary School (MEG pilot school), Thalitha Kumi Christian Academy and the Hanganeni and Vrede Rede primary schools respectively.

During the visits to Gobabeb, these groups participated in hands-on training activities in topics such as appropriate technology, desert ecology and scientific inquiry. Among other activities, learners enjoyed solar baking in Gobabeb's solar cookers, the BBC Dune Video, The Namib Picture Building Game, the spider web game, the scavenger hunt, a tour around Gobabeb's weather station and energy system, and nature walks.



Walvis Bay schools making observations of environmental problems around Kuisebmund.

Learners collected insect data from the three different ecosystems around Gobabeb, analyzed the data, and gave brief presentations on their findings to their teachers and the trainers.

At the end of the visits, learners were sad that they were leaving, but it was also encouraging that they enjoyed their visit to Gobabeb and we hope that they have gained environmental awareness, which they can have for the rest of their lives - as the saying goes "lessons learned are lessons lived".

Training of school groups is always fun and interesting, and we are looking forward to many more exciting training experiences.

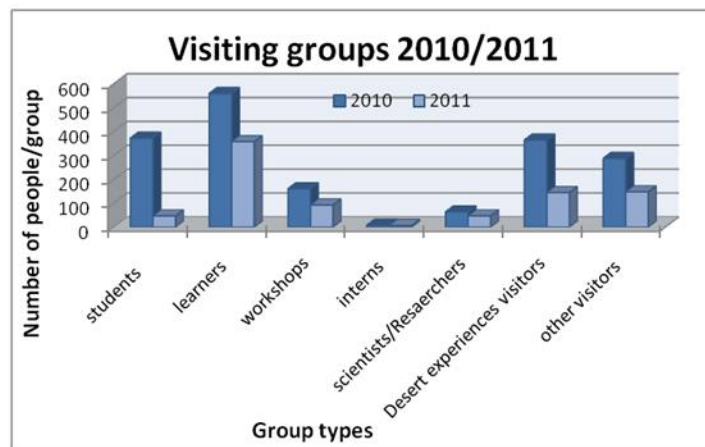


Learners from JP Brand Primary School during a solar cooking demonstration.

A Summary of Gobabeb Visitors from 2010-2011

Ottilie Amunvela

Every year Gobabeb welcomes hundreds of students, researchers, interns, and visitors. People come to the centre from all over Namibia and around the world. It is with great pleasure that I present you with summary of Gobabeb visitors for the year 2010 and half of 2011 (January-July).



Graph 1: Summary of visiting groups

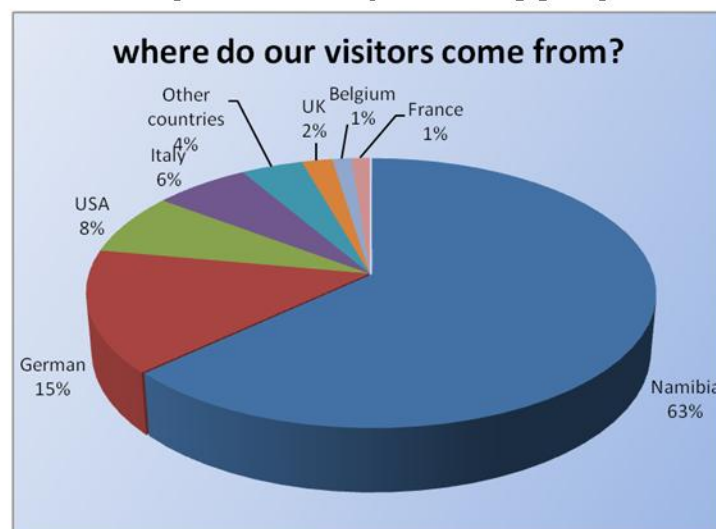
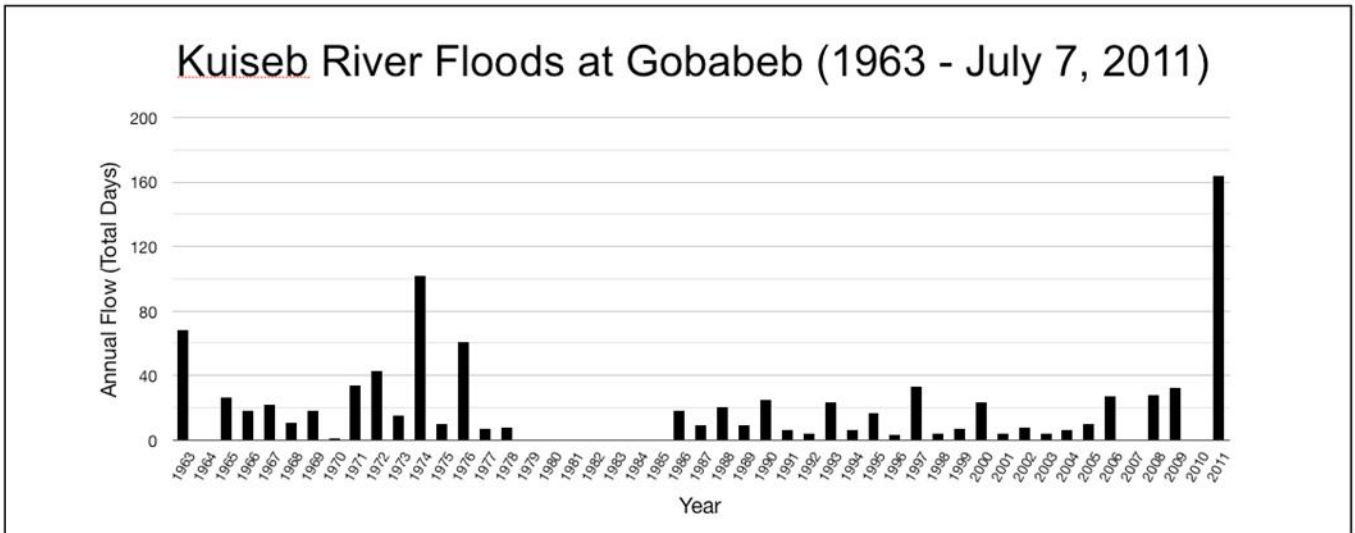
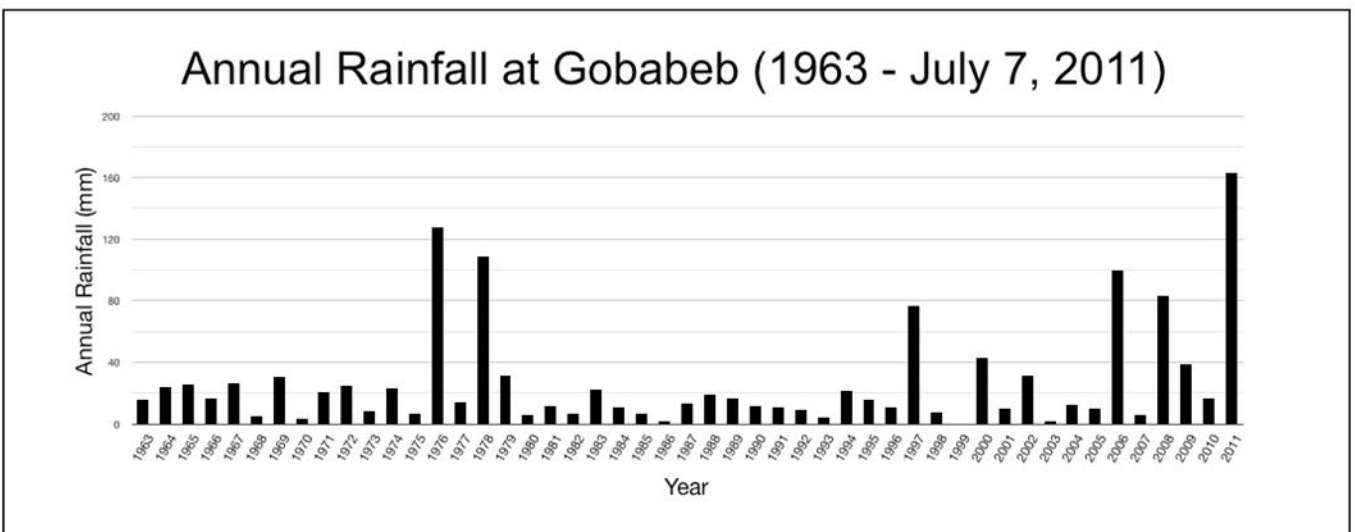


Chart 2: A graph of the countries that our visitors come from. The category "other countries" shown on the chart is made up of 25 countries from which we received 20 or less people in 2010-2011

When I first arrived at Gobabeb in July 2010 the gravel plains were a barren pale and the sands of the Kuiseb River hadn't flowed with water for over a year. Now, almost 12 months later, this desert couldn't appear more different - golden grasses wave in the eastern winds and the slowly diminishing chanel of the Kuiseb are still flowing. In fact, the 2011 flood season shattered the Kuiseb's previous 3 month flow record of 1974 and is still rolling past Gobabeb now ... a full 6 months after the first flood came down in the beginning of January.



A glance at the below graph of Gobabeb's rainfall totals over the last 50 years shows one attribute clearly: high variability! While Gobabeb usually receives less than 30 mm of rainfall, this does not mean high rainfall years are not normal - 6 years have had over twice that amount. Clearly, both high and low rainfall year help to maintain the critical ecosystem functions that make the Namib the Namib. Wet years - like this year's La Nina induced rain - can transform the desert dramatically. Some of these changes, particularly the growth of short-lived ephemeral grasses, are crucial for the long term stability of the ecosystem. Although the grasses do not live for long, their nutrients continue feeding into the ecosystem long after death. For example, almost two-hundred species of tenebrionid beetles living in the Namib depend on wind-blown detritus for survival.



Variability in desert rainfall is not restricted to the hyper-arid central Namib - the wetter eastern Namib also experiences extreme temporal rainfall variation. As the Kuiseb River's flow is dependent on the runoff from rainfall in the highlands to the east, low rainfall years do not result in flows past Gobabeb. A flood diversion wall was built near Rooibank in 1961 to prevent flooding in Walvis Bay, making it more difficult for the Kuiseb to reach the Atlantic. The picture on the right from NASA's Earth Observatory shows the Kuiseb as it nears the ocean on February 27th, 2011.



Note: David Montgomery, formerly the Training Coordinator at Gobabeb, departed in July. The Kuiseb finally stopped flowing on the 2nd of August after 184 days of continuous flow.

German Secondary School Supports Training at Gobabeb Philip Linder

Gobabeb's funding comes from a variety of different sources. While most of the support for school groups to come and get Training here at Gobabeb comes from the MEG III program, a few groups are supported by smaller sources of funding. The student's council of the Markgräfler Gymnasium Müllheim (a secondary school in Germany) organizes several events every year, including a big concert with an audience of about 600 people. The profit from this concert is donated to welfare institutions, for example, HIV/AIDS organizations. GIZ intern Philip Lindner was part of this council before he came to Gobabeb in 2010. Having this relationship, Philip helped organize that a part of the profit of the concert in 2011 was donated to Gobabeb. It was decided that the money raised by MGM (4500 N\$) should go



Philip teaching learners from Arandis about Gobabeb's first order weather station

towards helping disadvantaged schools in Namibia to come to Gobabeb.

The first group to be supported was the Talitha Kumi Christian Academy from Arandis, that visited Gobabeb from the 4th July to the 6th. The learners learned about Solar Cooking, and plants and animals in the environments of Gobabeb. They had a wonderful time and visiting Gobabeb was an experience that they will probably remember for a long time.

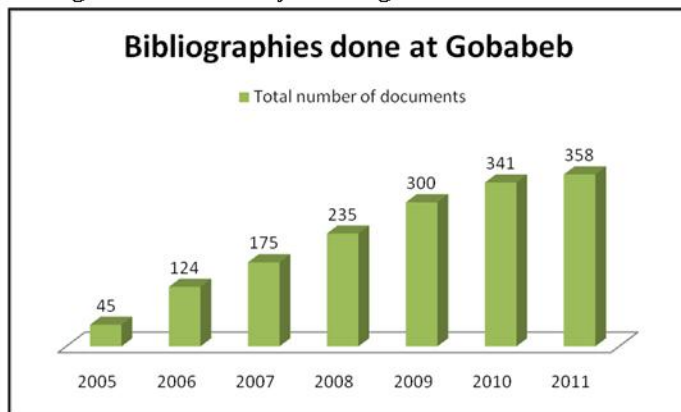
The collection of publications for the Gbb-Bibliography provides something of a *behind-the-scene look* at the Station's library – it looks beyond the obvious activities of research and teaching, events with which most people are familiar. You may ask – why Gobabeb of all places? – Well, first of all, that's the nature of Gobabeb's dryland research programs, which drives information exchange to improve sustainable management of drylands. Gobabeb's locality in the Namib Desert, its long history of environmental research and its national and international connectivity, further make it an appropriate platform for innovative information dissemination and exchange

Data networking is what it is all about. The outcome of the Station's long-term ecological research by monitoring the desert environment - be it hourly, daily, monthly, annually or at intervals - is its research bibliography, the Station's single most important dataset – apart from the climate dataset.



Our annual publications record begins with the modest, but very important “Scientific Papers of the Namib Desert Research Station” in 1962 – and from then onwards the growth in research production is the trend forward. A total of 1657 publications articulate the past, present and, to an extent, the future of research and education at Gobabeb. Keywords in the bibliography reinforce what we all know - research at the station is diverse. It spans all types of flora and fauna and all areas of our physical desert environment.

Our next leap forward is to digitize the bibliography – and we are well on the way to achieve this undertaking within the next year – with the appreciated support of all the students and interns working at Gobabeb at any given time. These library resources at the Gobabeb Centre will serve as a model and a training unit to introduce, share and process information quickly, effectively and publicly for open access, within Namibia and internationally. Circulating digitized information resources, like the bibliographic repositories at Gobabeb's library, promotes information exchange and accessibility to a larger audience.



The impacts of our bibliography are real and important. However, most of the authors are out of immediate sight, having their careers in academic science, environmental organizations, business and industry, the arts, law and many other professions. But by contributing to the understanding of our Namib Desert environment these science writers are excellent communicators and are effectively engaged in decision making of a healthy and sustainable desert ecosystem service.

Our appreciation for your support of our Station is not something kept behind the scenes.

Every gift is important and appreciated, particularly in these times of budget cuts across the Station. We and our students extend to you our heartfelt gratitude for your contributions.

SOIL is Great: Updates on a Mine Topsoil project at Gobabeb

Since November 2010 two Masters students, Taimi Kapalanga and Monica Thomas, have been working on the development and implementation their projects at Gobabeb Training and Research Centre under the auspices of Namib Ecological Restoration Monitoring Unit (NERMU). The projects are funded by both Langer Heinrich Mine and Country Pilot Partnership – Young Professional Research Associate (CPP-YPRA), a programme for Namibia’s Ministry of Environment and Tourism. In this article Taimi Kapalanga gives an update on the progress of her research so far.

Assessment of Water Infiltration and Retention Capacity of Natural and Stockpiled Topsoil at a mine in the Namib Desert

It is a fact that for plants to grow and survive in any environment, they need water. However, water has to infiltrate into the soil and remain there long enough for the plants to use overtime. Therefore to restore plant communities after disturbance, it is crucial to understand the factors that influence water infiltration and retention capacity into desert soils, from both undisturbed and disturbed surfaces. In this study we conducted experiments on topsoil samples collected from different stockpiles at Langer Heinrich Uranium Mine. First, we tested the abilities of the different topsoils to absorb water and to retain it after saturation. This was done by using thirty-two purpose made containers to hold dry soil sampled from the stockpiles. Then soil moisture sensors connected to a data logger were used to record soil moisture over time at different depths in a container. Secondly, soil moisture retention time was determined by drying wet samples in a drying oven and each sample’s weight (in grams) was measured at regular intervals using a weighing balance. Thirdly, we determined the soil textural classes and percentage organic matter using standard soil sieves and the loss-on-ignition method. All experimentation went well. Field testing is yet to be done but this will depend on the results from the completed experiments. From the basic analysis of the collected data, they show very interesting results. We are currently busy with detailed analysis of these data. *Soil IS great!* If everything goes well the first and final draft papers are planned to be completed by end September and October 2011. *By Taimi Kapalanga*



Gobabeb intern Lahja Tjilumbu assists with the collection of soil samples



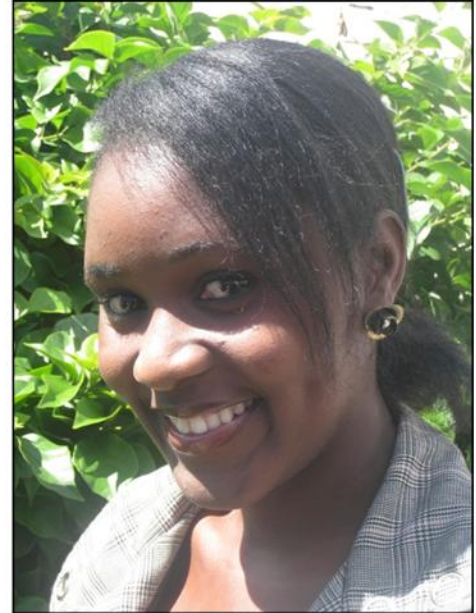
Taimi and Lahja examining soil samples in the lab

Gobabeb Welcomes New Staff Members

Gobabeb's newest staff members share a little bit about themselves and what they will be accomplishing while here at the station. The centre is proud to welcome Annetjie, Kela, Laura, and Christine!

Rufina Ineekela Shifa was born in Okalongo in the Omusati region and grew up in Walvis Bay and she therefore considers herself a "*baainaar*" (which means; a person from the Bay). She joined Gobabeb on 1 July 2011. Before joining Gobabeb, Kela as she is commonly known was a young professional at Desert Research Foundation of Namibia (DRFN) where she worked on the Namib Sand Sea UNESCO Nomination Dossier and various other projects. She currently works on an Environmental Education Project with coastal schools and is based in Walvis Bay.

Kela obtained her undergraduate degree at the University of Namibia with majors in Environmental Biology and Geography (GIS and remote sensing). Her main interests are in Environmental Sciences, especially in the Education sector (youth capacity enhancement). She also has a growing interest in Environmental Management and Restoration Ecology. Kela believes that for her; life itself is a classroom and every day we are learning new lessons, so she is looking forward to learning a whole lot of lessons at Gobabeb



Hi! My name is **Laura McElroy** and I am the new Training Coordinator here at Gobabeb. I arrived at Gobabeb in July along with Christine, the other Grinnell Fellow. I come from Springfield, Missouri, USA. I am a recent graduate of Grinnell College which is in the small town of Grinnell, Iowa. While there, I majored in Biological Chemistry and participated on both the soccer and swim team. I am extremely excited to be here at Gobabeb and am looking forward to an amazing year!



Hello, my name is **Annetjie Siyaya**. Gobabeb is not completely new to me although, never in my wildest dreams did I ever imagine myself working here. However, one can never have enough of the tranquility and spectacle Gobabeb has to offer, more so that I got to see the river flow! I was born in Rundu but grew up in Otjiwarongo. I speak seven different languages, all of which I learned when I was young, from playing and interacting with other children, except for English and Afrikaans, which I learned in school. At the University of Namibia (UNAM), I studied Environmental Biology and Molecular & Physiological Biology (quite a mouthful) and graduated with a Bachelor of Science degree, early this year. My final year project at the UNAM was on fire and its effects on ground dwelling invertebrates. Being part of the University's girls volleyball team, I got the chance to take part in a tournament that was hosted by Botswana. Apart from volleyball, I also enjoy jogging. I will be working in the training section as training assistant, alongside Laura and Kela. Ahead of us is the MEG3 project and

I am looking forward to an exciting training experience and hoping to contribute invaluable to the training section and to Gobabeb as a whole.

Christine Grummon arrived at Gobabeb on 11 July 2011, as the new Grinnell Corps Research and Information Technology Support Fellow. She will be spending the year at Gobabeb maintaining the station's computers, assisting with research projects, and coordinating internships. Christine was born and raised in East Lansing, Michigan, U.S.A. and she recently graduated from Grinnell College in Iowa with a bachelor's degree in Human Ecology. Her third year at Grinnell Christine studied abroad in Tanzania, learning about human evolution and the ecology of the Serengeti. Her interests include conservation biology and sustainable development. She also enjoys drawing, playing the banjo, and playing ultimate Frisbee. Christine is excited to get to know Gobabeb and explore the beautiful landscape around the station.



.....There is nothing more awful than saying Farewell to colleagues and friends but we know that Farewells are not forever nor are they the end.....

Mr. Hiskia Mbura was one of the long-term staff at Goba-



beb Training and Research Centre. He served the centre from June 2008 to July 2011 as Senior Research Technician. Apart from being a senior technician, Hiskia contributed significantly to the centre services and programmes

development and management.

But time has come that we say farewell to him. As a fellow student, colleague, and friend indeed, it was a wonderful experience working with you. A lot of good memories remain and will be long cherished.

On behalf of the Gobabeb management and staff, I would like wish you happy adventures, fantastic new friendships, and marvelous experiences.

Young & Optimistic



Ms. Taimi Kapalanga (Research Technician) & Ms. Otilie Amunyela (Receptionist and Administration Assistant) are proud to be the longest serving young staff at the centre.



Our mission

is to promote sustainable lifestyles, conservation and restoration of natural capital in drylands through innovative research, long-term monitoring, broad-based training, outreach, networking and tourism.

Gobabeb Training and Research Centre

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