Ecosystem services

Worth their salt – Determining the value of Limpopo's water ecosystems

A Water Research Commission (WRC) funded project is exploring whether indigenous knowledge is properly valued when natural products from water-linked ecosystems are commercialised, and how this issue can be addressed in planning and policy.

Article by Sue Matthews.

A salt miner tends to a xinzhava filter, used to extract brine from salt crust collected from the vicinity of the Baleni hot springs.

Barbara Tapela

The rich variety of ecosystem services provided by wetlands are often highlighted as a reason to protect these natural habitats. Provisioning services – according to the Millennium Ecosystem Assessment's definition – include food and medicinal products, freshwater for domestic and agricultural use, and reeds and grasses for roof thatching, floor mats and handicrafts.

The focus is generally on subsistence use of these goods, or even limited trade that allows members of the surrounding community to make a small livelihood at local markets or roadside stalls along tourism routes. But there are also 'success stories' of , for example, traditional baskets and bowls being offered for sale at top retail outlets, both within South Africa and abroad.

Since these ventures require consistent product quantities and quality, small-scale producers are often encouraged to enter into contractual arrangements, and there may be a number of middlemen between them and the 'end seller' if the market value chain – encompassing the full range of activities required to bring a product from conception to its end use and beyond – is very long.

Do the producers at grassroots level receive a fair share of the benefits of such trade, or are they being exploited and their indigenous knowledge not fully recognised? And what are the implications for the sustainability of the natural resource? Could the increasing demand for the products – coupled with rural population growth, poverty,

unemployment and the added pressure of climate change – threaten the resilience of ecosystems?

These are the kind of questions being explored in a project conducted for the WRC by the Institute of Poverty, Land and Agrarian Studies (PLAAS) at the University of the Western Cape. The ultimate aim of the research is to ensure that indigenous knowledge is incorporated into natural resource management planning and policy, specifically that associated with water-linked ecosystems.

South Africa already has some legislation addressing the issue. In 2004, Cabinet adopted an Indigenous Knowledge Systems (IKS) Policy, which is essentially an enabling framework to stimulate and strengthen the contribution of IKS to social and economic development in South Africa. More than a decade later, in March 2015, the Minister of Science and Technology, Naledi Pandor, published the Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill, 2014, for public comment.

Also in 2004, the National Environmental Management Biodiversity Act (NEMBA) was promulgated, with a chapter on bioprospecting, access and benefit-sharing to regulate bioprospecting involving indigenous biological resources and ensure the fair and equitable sharing of benefits arising from it. The NEMBA Bioprospecting, Access and Benefit-sharing Regulations subsequently entered into force in 2008, and in 2012 the guideline document 'Bioprospecting, Access and Benefit Sharing Regulatory Framework' was published to help different stakeholders understand the legal requirements and their rights in terms of the law.

"We're looking at the existing policies, but emphasising that the water sector must also exercise due diligence," says project leader, Dr Barbara Tapela.

"When indigenous resources from water-linked ecosystems enter the market value chain, we need to ensure that a fair and just portion of the value generated goes back into uplifting the livelihoods of the people who produce the resource, and improve conditions for communities where the wetlands are located."

The field research component of the project is focusing on a case study of the traditional salt makers at the Soutini-Baleni wetland, which encompasses the Mahumani vlei and the hot springs that help sustain it. The wetland, on the southern bank of the Klein Letaba River, approximately 40 km south-east of Giyani in Limpopo, was declared a Natural Heritage Site on World Wetlands Day in 1999 because the salt-making practices here are believed to date back 2000 years. The site's name reflects the terms used by the local Tsonga people, Soutini meaning 'place of salt' and Baleni 'wide open vlei'.

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Salt-making is practised only by women – nowadays from the surrounding villages – although in times past they came from as far afield as Mozambique. It typically takes place only during the dry winter months, although there is emerging evidence that some of the women have begun entering the salt mine at other times too. Traditionally, salt-making is governed by customs that include formal rituals

Transfrontier Parks Destinations

The brine is boiled until most of the liquid evaporates, leaving behind a salt residue that can be dried in the sun.

The salt is sold in Giyani's informal market.

and specific terminology to pay tribute to ancestral spirits. For example, access to the salt mine is only granted by the presiding priestesses after performance of an appeasement ritual that involves laying twigs and sticks at the base of an old leadwood tree, and reciting incantations to introduce new arrivals. The priestesses act on behalf of visitors who do not know the correct terminology, alerting the spirits to this fact and requesting their leniency.

Once admitted, the women stay for seven days, sleeping under the trees and eating food they have brought with them from home. Salt-making begins with the filling of buckets with salt crust scraped from the edge of the vlei. For each bucket of salt crust, one is filled with soil and another with river sand, and all of this material is deposited into a raised filter-basket called a xinzhava, which is made from twigs, grass and clay. River water is then poured over the mixture, dissolving the salt and allowing the brine to drip down into a container below. Next the brine is boiled over a fire to evaporate the fluid, after which the salt residue left behind is spread onto sacks and dried in the sun.

By the end of the seven days, the women return home with about 50-80 kg of salt each. Some of this may be bartered within the community – salt being exchanged for chicken or vegetables, for example – but it is also sold at local village markets, to informal traders in nearby Giyani and to traditional healers from further afield.

Recently, a few of the women have sold their salt through a private company that operates an ecotourism venture at the hot springs under a lease agreement with the provincial tourism agency. The company, Transfrontier Parks Destinations, runs Baleni Camp as part of its African Ivory Route in Limpopo, and has arranged for the salt to be marketed by Oryx Desert Salt, which is based in Cape Town but sells salt harvested from a remote part of the Kalahari Desert.

While the women earn R1 800 for 50 kg of salt, the final packaged product is advertised on the Oryx website at R650 for just 3kg! Smaller quantities may have even more of a mark-up, particularly when sold overseas under the banner of the burgeoning Slow Food movement.

"In the past, with commercialised indigenous products such as buchu, Hoodia and devil's claw, the contentious issue was around sharing of the financial benefits – basically, the people who grew the buchu ended up getting the short end of the stick," notes Dr Tapela. "In the case of Baleni salt, the surrounding communities have maintained the wetland by using its resources in ways that have not damaged them, so they have effectively paid the cost of ensuring those resources still exist. Are those costs, as well as the value of indigenous knowledge, being factored into the sharing of financial benefits?"

One way of assessing this is to construct a value chain map, which enables the tracing and tracking of relationships between different actors, such as producers, intermediaries, processors and exporters, as well as the flow of inputs, services, and credit through the chain. This was one of the first tasks of the field research, which entailed group discussions with the women who mine the salt, as well as meetings with the traditional leadership and the ecotourism company.

"In light of our findings we'll now be doing an action research process, whereby we'll be using this as a test case to see how we can improve this value chain so that it can work to benefit the local woman. The key stakeholders involved are quite keen for us to work together – they wanted to help the women by getting the salt into the market, but when you get into traditional rural communities, you need to have your finger on the pulse of the socio-political dynamics."

Dr Tapela explains that the traditional leadership was marginalised in the process of negotiating the ecotourism and salt-marketing arrangements, which meant there was a risk that these initiatives would not be tenable in the long term.

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So they have an interest in working with all the key stakeholders to find a way forward," she says. "The companies therefore have an interest, but they also have some ethical considerations, without which they would not have market credibility."

The learning achieved from this test case will be used to propose recommendations for critical interventions towards pro-poor, equitable, gender-sensitive and IKS-cognisant value chains, with the hope that the commercialisation of natural products could yet prove to be a valuable tool for addressing poverty, unemployment and inequality.

"It is for this reason that the WRC is emphasising and channelling more research resources towards the business of ecosystems as a way of centralising marginalised communities as beneficiaries, especially those from rural and peri-urban areas," says WRC Research Manager, Bonani Madikizela. "There is an urgent need to improve the quality of marginalised communities' lifestyles through unlocking wealth in aquatic ecosystems, without compromising the integrity of the ecological infrastructure or natural ecosystem health conditions. This is the essence of green economy."