



# TESSA: a tool for valuing

As readers of *World Birdwatch*, my guess is that you fervently believe that nature is worth preserving for itself, because of its own intrinsic value. Unfortunately, not everyone thinks like you or me.

Many people feel that wildlife is a luxury—and that basic human needs are more important. How can it be relevant, they ask, that a rainforest harbours an obscure brown bird, when the local human population needs more land on which to grow crops? For a Government

policymaker or local community, the decision may seem straightforward: chop down the forest and plant crops, so that people can eat, survive and thrive.

The decision may *seem* straightforward—but is it? The deepening understanding of Man's dependency on nature has called into question the simplicity of such choices. There is now a worldwide appreciation that humans depend on natural services to produce our food and guarantee our water supplies.

Over the past two decades, the concept of “ecosystem services”, as they are known, has risen exponentially in prominence. Thanks to an intergovernmental process culminating in the Aichi Biodiversity Targets agreed in 2010, signatories to the Convention on Biological Diversity are now committed to “restoring and safeguarding... ecosystems that provide essential services... by 2020”. Countries now have an obligation proactively to protect ecosystems, precisely because

of their citizens' reliance on them.

But what is an “ecosystem service”? In essence, it is a characteristic of nature that underpins our existence through processes that bring people direct benefits. The formation of soils is an example of such a process: how else can we grow crops (the ecosystem service itself)? The provision of clean water is another: everyone needs to drink. Then there are regulations of local and global climate, harvesting of wild goods (whether animal, plant



A team in the Dominican Republic survey the Sierra de Bahoruco forest to calculate carbon storage which contributes to climate change regulation (Isadora Angarita)

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or mineral), protection from flooding, opportunities for recreation, and so on.

As concepts these may seem nonsense—everyone understands that people need water for example—but it is all too easy for them to remain abstract, devoid of real meaning. Taking ecosystem services for granted is effortless. As a consequence, the contribution nature makes to human wellbeing has been—until far too recently—consistently overlooked and undervalued in decision

making. As Jenny Merriman, BirdLife International’s Ecosystem Services Officer, explains: “There is a lack of information on how nature contributes to our lives. Unravelling its true value is key to using ecosystems sustainably.”

In common with many conservation groups and academics worldwide, BirdLife International believes that robust information on ecosystem services can help to communicate the value of nature to decision makers.

A robust economic rationale that places human wellbeing at its core, in turn, can produce a positive outcome for biodiversity. Win-win.

From a conservationist’s perspective, the trick is to speak decision makers’ language by putting a unarguable value (whether monetary or non-monetary) on ecosystem services—first calculating, then communicating, how much they are actually worth—and, critically, making crystal clear how this value would change if the land use were altered. Since money makes the world revolve, in many cases talking dollars forces those responsible for such planning to sit up and listen.

For policymakers to reach a truly informed conclusion about what is best for human wellbeing (and, hopefully, for biodiversity conservation), they need to be able to weigh up the cost of losing clean water supplies against the economic benefit of extending agricultural land, and to compare the impact on local communities with that on the national economy. Does conservation or conversion deliver greater net benefits? This, says Jenny Merriman, is where “TESSA” comes in.

TESSA—the Toolkit for Ecosystem Service Site-based Assessment—is BirdLife International’s game changing, user friendly approach to defining the economic significance of important sites for conservation. Developed in collaboration with the RSPB (BirdLife in the UK) and a further half dozen organisations, “TESSA demonstrates nature’s real economic value to people, often in monetary terms”, says Merriman, “and this in itself carries weight with decision makers, thereby helping to promote better planning decisions”.

In essence, TESSA does three things. It enables users to determine the current economic value of each ecosystem

service at a site and to work out who benefits. It helps practitioners to do the same for an alternative land use at the same site. Then—assuming that someone somewhere is considering whether to convert the land use to this alternative state—TESSA tots up the net differences and explains how to communicate the results to that person.

Let’s take an example. Imagine a tract of rainforest with villagers living around its periphery. And imagine that the local forestry department is weighing up whether to grant a logging concession. Typically, the official charged with the decision might have dollar signs for eyes, thinking only of the national economic boost produced by harvesting the timber. Even if the official recognise that the intact forest provide useful services, s/he probably does not know how to calculate their worth.

The scales are thus skewed: on the one hand, an incontrovertible multi-million dollar financial boost; on the other, a vague, unquantifiable suggestion that clean water might be useful. TESSA redresses the balance, evaluating the current economic value of the forest’s key ecosystem services (water services, climate regulation, harvesting of wild goods, production of cultivated goods, nature-based recreation). It then conducts the same analysis for the logged land, calculates the net difference in value, and its winners and losers.

Those using TESSA then feed this package of analysis to the forestry official. Now—and only now—can the public servant take a truly informed *economic* decision that evenhandedly weighs up the pros and cons. By talking the right language, the prospects for preservation of the forest and its wildlife are markedly enhanced.

TESSA is usually deployed when seeking to influence a proposal to convert an existing



ABOVE Rara National Park in Nepal is an exceptionally beautiful area that provides multiple benefits to people locally and nationally (Jenny Merriman)

BELOW Using TESSA, Bird Conservation Nepal worked with local communities to value the benefits from Rara to provide management recommendations that deliver conservation alongside sustainable use by the community (David Thomas)



site that is important for biodiversity into a land use that would be poorer for wildlife. But TESSA works just as effectively the other way round: when considering whether to invest in returning a degraded site to something like its natural state. Reverting farmland to a wetland, for example; or reforesting a denuded hillside.

TESSA is not the only way to assess the benefit of ecosystem services: other methods have been around for several years. Uptake, however, has been relatively low. This seems to be because tools usually demand specialist knowledge, ignore the local context, work only at the landscape level, gobble human resources or cost too much. When BirdLife entered the fray, recalls Merriman, “there was nothing available for people lacking technical wizardry, a PhD in economics or a reliable internet connection, nothing for organisations working at individual sites and nothing that engaged affected communities.”

TESSA is tailor-made to fill the gap in the market. “We designed a tool that produces scientifically robust data”, explains Kelvin Peh from Southampton University, who ran the development project, “but—critically—can be applied by non-experts.” TESSA’s defining beauty, he smiles, and the reason for BirdLife and collaborators investing considerably in its development since 2010, is that it is “rapid and low cost, typically taking only 11 person-weeks and costing just \$6,400 a throw”. Available free of charge, TESSA meets the needs of those who lack substantial resources and specialist knowhow to invest in a site assessment, but need robust evidence quickly. For overwrought organisations with virtually zero spare capacity or finance, this is manna from heaven.

And there is more. TESSA stands out from the crowd in its unashamedly participatory ethos. It engages local stakeholders—those who know

the area best and who most directly stand to gain or suffer from any landscape change. Other tools omit or simply predict how beneficiaries at different levels—local, national, global—will change.

“Those who have used TESSA”, says Merriman “have found that it really helps in engaging local communities in thinking through a problem”. TESSA is about weighing up conservation versus conversion and doing so through conversation. Moreover, TESSA’s site-based approach accords with BirdLife’s longstanding focus on tangible conservation units such as Important Bird and Biodiversity Areas (IBAs). “If you need a site-based tool”, says Merriman, “this is the one.”

Such advantages have caught the eye of conservationists, academics and Government decision makers worldwide. To date, Merriman calculates that TESSA has already been used by BirdLife Partners and others at 40 sites across several continents, with a similar number of assessments in train. Actual uptake may be much higher, as the toolkit has been downloaded 900 times from the BirdLife website. TESSA has proved its worth from Belarus to Cameroon and from Ecuador to Fiji. It has form in mangroves and grasslands, forests and fenlands, temperate regions and the tropics. Workshops training scores of users have been held in Kenya, Malaysia, Singapore and Costa Rica. This is impressive progress for a tool that BirdLife only started to promote actively during 2013.

Merriman is particularly proud of the experiences of one participant in the Kenya workshop. Returning to his native Cameroon, Patrick Mbosso trialled TESSA in a community forest which local residents were mooting converting to a cocoa plantation. Mbosso used TESSA to compare the economic value of three land

uses: forest; a standard cocoa plantation; and a sustainable-certified cocoa plantation. “His results were unequivocal”, remembers Merriman. “Only natural forest preserved water quality that was fundamental to local communities’ livelihoods. Community leaders agreed with Mbosso’s analysis—and the future of the forest was assured.”

Other success stories demonstrate that, even as a fledgling, TESSA is having a very real impact—benefiting people and biodiversity alike. In Burundi, TESSA is being used to inform options for adapting to climate change, by identifying productive crops better able to cope with water shortages and developing reforestation strategies. Work in Montserrat evidenced the importance of current livestock management processes relative to uncontrolled grazing.

In Ecuador, Isadora Angarita-Martínez (Conservation Projects Officer in the BirdLife Americas Secretariat) used TESSA at a

## How TESSA differs from the competition

- Designed for use at the level of individual sites
- Users only need basic maths skills: no GIS or other technical/specialist knowledge is required
- Use is very low cost and rapid
- Participatory: engages local stakeholders and develops a relationship with them
- Blends quantitative methods and qualitative assessments
- Users can gather information themselves in the field, or use existing datasets
- Identifies the changes to local, national and global beneficiaries of ecosystem services
- Culminates in the crux of what decision-makers need to know: the net change in economic value between the existing site and an alternative land-use

Ramsar wetland in the Parque Nacional Llanganates. Here, data gathered has informed management plans to remove cattle and to develop alternative livelihoods. Even better, Angarita-Martínez reports, “regional authorities have become very interested in using TESSA to assess ecosystem services in other protected areas”.

Practitioners rave about TESSA. They find it very easy and flexible to use: both online and in the field. Angarita-Martínez is clearly a convert:

“TESSA is so easy to follow that any person with basic knowledge of maths and statistics can implement it.” She is also won over by its low cost: “At Llanganates, it proved cheaper to use TESSA to assess five ecosystem services than to employ a consultant to assess just two services!”

Togarasei Fakarayi (Programme Manager, BirdLife Zimbabwe) agrees: “TESSA is a simple tool that can be used even with minimum resources and expertise.” Leonard Akwany (Programme Associate at Wetlands International in Kenya) goes further, extolling TESSA’s virtues for “grassroots conservation practitioners with tiny budgets who depend on volunteers. I recommend TESSA to all Site Support Groups working at IBAs.”

This is praise indeed, but it remains clear that BirdLife’s ambitions for the tool have not yet been satisfied. “We are currently constrained in what we can measure,” Merriman says. “There’s a whole raft of ecosystem services on which we cannot yet adequately put a metric.” She explains that BirdLife aims to broaden TESSA’s coverage of ecosystem services, so that—by 2016—it includes coastal protection, cultural services and perhaps pollination services.

Merriman also wants to respond to feedback and to incorporate technological developments by further improving user friendliness. Her ultimate goal is “to



integrate TESSA with BirdLife Partners’ normal work programmes, so that it becomes a standard tool for monitoring of IBAs, and to mainstream it within national policy processes”.

This is TESSA in a nutshell. The tool is intended to change behaviour at the strategic level, by articulating the economic arguments that most easily win over decision makers. As Dr Stuart Butchart, BirdLife’s Head of Science, concludes: “using TESSA can enable management decisions that reflect the crucial role of nature in supporting human wellbeing and sustainable livelihoods”.

In light of all this, the debate about whether or not wildlife is a luxury seems rather beside the point. Whether we conserve sites for their biodiversity importance or for their ecosystem services, that obscure brown bird stands to benefit. And that, in my book, gives TESSA an unequivocal thumbs-up.



by James Lowen

Find out more  
[tinyurl.com/tessatoolkit](http://tinyurl.com/tessatoolkit)

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## Case study: Driefontein grasslands, Zimbabwe

At an Important Bird and Biodiversity Area providing habitat for three globally threatened birds (Wattled Crane, Grey Crowned-crane and Secretarybird), BirdLife Zimbabwe demonstrated that the current site provided more valuable services for water provision, harvested wild goods and cultivated goods, than an alternative degraded site. Programme Manager Togarasei Fakarayi particularly valued TESSA’s “participatory approach that fully involved local communities” and “influenced local people to conserve their natural resources”. The information that TESSA produces, says Fakarayi, “is essential for policy and advocacy, enabling us to promote site-based conservation through stakeholder engagement”.

Wattled Cranes  
(Ian White; flickr.com)

