PROGRAMME HIGHLIGHTS

2009 – 2018
Foreword

from the Chair of the ESPA Programme Executive Board, Steve Bass

This Programme Highlights Report reveals just how much has been achieved in the nine years since we launched Ecosystem Services for Poverty Alleviation (ESPA).

The numbers alone are impressive. Nearly 1,000 scientists from 160 institutions have engaged stakeholders in 125 research projects to explore policy-critical questions in 53 countries. ESPA’s papers have hugely augmented the literature on the links between two of today’s most intractable challenges: poverty elimination and environmental conservation. In a policy context paralysed by the complexities of these links, ESPA pioneered a shift away from a partial and linear understanding of ‘ecosystem services alleviating poverty’, towards a richer understanding of the many feedbacks between social and ecological systems. ESPA’s metrics, frameworks, models and other inventions have helped to make more intelligent decisions in many countries.

The world has also changed in nine years. Political and public awareness of poverty, justice, climate and environment problems is more acute – and more widespread: these same challenges have topped the World Economic Forum’s annual list of global risks for the last six years. There is unprecedented commitment to resolve the problems: environment had just a toehold in the Millennium Development Goals, but the Sustainable Development Goals (SDGs) now call for an ‘integrated and indivisible’ approach in which environment is a foundation for poverty elimination.

It is therefore both critical and opportune to apply ESPA’s powerful legacy. Its well-organised evidence base, tools and models can get to grips with the otherwise overwhelming list of 169 SDG targets, informing tough development decisions that will ‘leave no-one behind’. Its interdisciplinary community of practice is now equipped with an ‘ESPA lens’ on otherwise intractable policy and technology challenges. In these and other ways assessed by this valuable report, the astute vision of ESPA’s funders – the UK Department for International Development (DFID), the Economic and Social Research Council (ESRC) and the Natural Environment Research Council (NERC) – is coming to be realised through a fruitful marriage of science excellence and development impact.

Steve Bass
Chair of the ESPA Programme Executive Board
10th May 2018
Funders’ statement

ESPA’s science urges us to think differently and act differently.

In a world where one tenth of people are still classified as ‘poor’, ESPA science has explored the very nature of poverty and how people’s wellbeing could be better measured and understood. ESPA researchers have revealed how the fundamental measure of ‘poverty’ influences which development actions are taken – by governments, external donors, by communities themselves – and whether people are better off as a result.

In a world that faces the sixth great extinction crisis, ESPA science has challenged conventional thinking about ‘what counts’ for human society by highlighting biodiversity as a major contributor to human health and wellbeing. ESPA has shown the multiple benefits of biodiversity in crop species, forest species, the marine environment – and such studies now need to be scaled up across larger sites and more contexts, and their findings used to influence wide-ranging development practice by both public and private actors.

In a world where there is intense pressure on the finite resources of land and water, ESPA science has found that land-use intensification (which of course, often involves heavier water use) is undermining the provision of multiple ecosystem services and threatens attainment of several SDGs. One of the greatest challenges for humankind in this century will be learning how to secure livelihoods and food and fuel requirements without intensifying land to the detriment of the broader environment.

In a world that is rapidly urbanising, ESPA has bolstered our understanding of how peri-urban areas of developing countries could be sustainably managed to support societies: enhancing food security, cycling nutrients, providing ‘green lungs’ and other vital services. ESPA research has also illuminated major gaps in scientific understanding about how ecosystem goods and services flow between rural and urban areas. This is a major area for further investigation.

In a world transformed by technology, ESPA has shown how scientists and communities can work together to use information technology to command an understanding of the natural environment – and use this IT-based evidence to better manage environmental risks. ESPA research has also shown how such partnerships, facilitated by technology, can identify innovative solutions for sustainable environmental management that bridge ancient and modern practices.

In a world disrupted by climate change, ESPA science recognises the chronic and acute dangers posed by a changing climate to the most vulnerable in society. ESPA also highlights the risks of harm to the poor, when climate change mitigation activities fail to take their needs into account. For example, forest conservation activities and climate-smart agriculture approaches are not inherently ‘pro-poor’. They require extra care in their design and implementation, to make them so. Even climate change adaptation measures may benefit one social group and disadvantage another. Like all uses of environmental resources, such interventions pose trade-offs. ESPA science has provided modelling tools for making these trade-offs explicit and supporting policy decisions. Future research has the potential to improve these tools for assessing complex social-ecological systems. The challenge will be to do this in ways that are easily accessible and usable across decision-making contexts in developing countries.

Signed:

Alessandro Moscuzza, UK Department for International Development
Simon Kerley, UK Natural Environment Research Council
Claire Spooner, UK Economic and Social Research Council
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How does one report on a programme like ESPA? This final report tries to provide an entry point to the science, development impact and range of outputs produced over the lifetime of the programme and available on ESPA’s legacy website.

ESPA basics: ESPA has supported 125 projects, mostly commissioned through over a dozen competitive calls. As illustrated by the word cloud on page 9, projects focused on a wide range of issues but themes like poverty, wellbeing, livelihoods and sustainability on the one hand, climate change, water and forests on the other, and a consistent focus on governance and trade-offs were common to many. In line with changes in DFID’s priorities over the lifetime of the programme, ESPA’s geographic focus shifted away from Latin America and countries such as China to a greater focus on sub-Saharan Africa and South Asia.

ESPA’s scientific output has been prodigious and is likely to keep on increasing over the next few years. Higher than average citation rates suggest that ESPA papers are considered topical and useful. The fact that the majority of papers are published in journals that target audiences from many disciplines suggests that projects have taken interdisciplinarity to heart, while at the same time not losing the disciplinary rigour required to produce publications for more specialist disciplinary journals. In 2017, we saw a huge amount of activity to draw out findings from the wealth of knowledge produced by the programme. This culminated in a book - *Ecosystem Services for Poverty Alleviation: Trade-offs and Governance*, published by Routledge - the four main sections of which have been used to organise the material in this report.

Achieving development impact, by effecting a shift in behaviour among policy-makers, business leaders, conservation and development practitioners and local communities, was a key concern for ESPA. To reach these varied audiences, the programme’s learning has been shared in many formats from a summary for policy-makers, to films, policy briefs and impact case studies. Throughout this report you will find boxes illustrating how ESPA’s science has been used to support better decisions on environment-related interventions from local to global level.
Building capacity of researchers in the Global South was an important objective for the ESPA programme. While there is no baseline to compare with, the fact that 24% of ESPA’s academic papers were led by Southern-based authors seems to be a strong achievement. The programme’s capacity-building activities included provision of Fellowship grants, organising conferences and workshops. In the last year, it also produced a set of teaching materials, informed by ESPA’s research, for lecturers to use to engage their students on themes related to ecosystem services and poverty alleviation.

Creating a programme that is more than the sum of its parts. While the NERC Secretariat has been responsible for managing ESPA’s research calls, the role of the ESPA Directorate has been to promote academic synthesis and impact activities across the programme and ensure that knowledge is shared widely with key audiences now and into the future. The last year has provided an opportunity to reflect on what makes a programme like ESPA work from its design to its eventual impact. In the final part of this report, we pull together some of this learning – around how to promote research that has development impact, is interdisciplinary and based on equitable partnerships between Southern and Northern researchers.

Establishing a legacy: the last nine years have seen a huge amount of work within the ESPA programme leading to a large and varied volume of outputs. Equally important – even if less tangible – has been the creation of an ‘ESPA community’, engaging with the concepts of social-ecological systems, wellbeing and environmental justice and the practicalities of how to co-produce research in ways that can more directly inform development interventions. Although we are at the end of ESPA as a programme, it feels as though an ‘ESPA lens’ is now a familiar and accepted approach for many researchers, development practitioners and policy-makers. I hope that this report and the materials to which it refers will prove useful to all in the years to come to make further progress towards ESPA’s overarching goal of ensuring that ecosystems will be conserved and managed more sustainably in ways that alleviate poverty and enhance wellbeing.
About ESPA

Context

The 2000 Millennium Development Goals included one goal for environmental sustainability, but did not explore the dependency of the other seven goals upon the quality and management of the natural environment.

In 2005, the Millennium Ecosystem Assessment found that global development gains had been secured at an environmental cost. The Assessment found that 15 of the 24 ecosystem services studied had been over-used or degraded.\(^1\)

The evidence base was particularly threadbare when it came to understanding the linkages between severe poverty, and people’s access to and use of natural resources.\(^2\)

The ESPA research programme was the UK government’s response to these findings. ESPA sought to fill the evidence gap on how ecosystems can contribute sustainably to poverty reduction.

Planned in 2006-2008, and launched in 2009 (see timeline that follows), ESPA was a collaboration among DFID, NERC and ESRC.

Objectives

ESPA’s overarching goal was to ensure that ecosystems will be conserved and managed more sustainably – in ways that alleviate poverty and enhance wellbeing.

The programme’s objectives were:

1. To create a strong research and evidence base on the connections among ecosystem services, their dynamics and management, human use and pathways to sustainable poverty reduction;

2. To develop innovative, interdisciplinary research and methodologies, delivering tools and approaches that enable decision-makers to simulate and predict social-ecological responses to complex social and economic trends;

3. To engage and communicate effectively with policy-makers, practitioners and decision-makers so that ESPA’s research is well understood and used;

4. To enhance the capacity of researchers in the Global South to conduct, lead, use and communicate high-quality ESPA-type interdisciplinary research, including through effective international research partnerships.
**ESPA timeline**

- **2018**
  - ESPA’s final event in London focused on ESPA’s legacy for future policy-making and research on poverty alleviation and ecosystems. ESPA Directorate closed (June 2018).
  - ESPA Africa Declaration published.
  - Publication of an ESPA book, plus summary for policy-makers in multiple languages, and launch of ESPA flagship documentary.
  - Conclusion of all research grants (March 2018).
  - Sharing of ESPA’s results and learning through workshops, conferences and professional development courses held across Africa and Asia.

- **2017**
  - ‘Legacy partner’ agreements made with African and Asian institutions to champion ESPA’s research in their countries and regions.

- **2016**
  - 5 ESPA-2016 research synthesis grants awarded to build on the scientific advances of existing ESPA projects.

- **2015**
  - 19 Regional Opportunity Fund, Impact Activity Grants and Small Grants awarded by the Directorate from 2015-17 to promote development impact of ESPA’s research.
  - Appointment of Regional Evidence Advisors, based in Nairobi and Delhi, focused on achieving impact for ESPA’s research findings.
  - [The Sustainable Development Goals agreed by governments in New York: 17 Goals, 169 targets, to 2030.]

- **2014**
  - 8 ESPA Fellowships to support the professional development of promising early career researchers.
  - 5 ESPA-2014 ‘blue skies’ grants awarded to inform thinking and practice over at least the next decade.

- **2013**
  - 11 ESPA-2013 grants awarded focused on pathways out of poverty, the urban environment, and building on ESPA success.
  - 6 ESPA-2012 grants awarded focused on understanding how ecosystems provide services in multi-functional landscapes and support multiple dimensions of wellbeing.

- **2012**
  - 8 Research into use and open access grants awarded to support the uptake of research findings into development policy and practice and the publication of open access journal articles.
  - 4 Evidence and Impact Research grants awarded to generate high-quality evidence to key policy and outreach events.
  - 3 ESPA-2011 consortium grants awarded to provide significant new knowledge on the relationship between ecosystem services and poverty alleviation.
  - [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) established by 94 governments.]

- **2011**
  - The International Programme Advisory Committee (I-PAC) was appointed to provide ESPA with independent advice on strategic and technical aspects.

- **2010**
  - The ESPA Directorate contract was awarded to the University of Edinburgh, to provide cross-programme support on knowledge-sharing, research into use, monitoring and evaluation, and capacity-building.
  - 28 Partnership and Project Development grants awarded for the creation of substantial research partnerships to develop proposals for future ESPA funding rounds.
  - 18 Programme Framework grants awarded to explore new and innovative concepts, methodologies and models.

- **2009**
  - 11 Strengthening Research Capacity grants awarded to build networks and partnerships between Southern and Northern researchers.
  - Design of ESPA programme approved; all funder allocations confirmed.

- **2007**
  - 4 regional and two thematic Situational Analyses were commissioned, to ensure that research themes for the programme are demand-led.

- **2006**
  - In order to fully address the multidisciplinary nature of the ESPA programme, the ESRC became involved and a Programme Management Group (PMG) is established.
  - DFID and NERC were tasked with developing a proposal for the ESPA programme design.

- **2005**
  - [March 2005: Findings of the Millennium Ecosystem Assessment approved, showing that the loss of services from ecosystems is a significant barrier to reducing poverty, hunger and disease.]
Where was ESPA?

Countries where ESPA has worked in the Global South

- 922 Researchers from developing countries
- 53 Countries where research has taken place
- 125 Research projects supported by ESPA
- 419 Journal papers published by May 2018
Which themes did ESPA investigate?

This word cloud shows which terms featured more than once in ESPA project titles. The size of the word corresponds with the number of times it occurred in ESPA project titles: the larger the word, the more often it occurred.
Publications

Number of publications

One measure of ESPA’s success as a cutting-edge research programme is the number of academic publications produced. By mid-May 2018, ESPA research had given rise to 17 books, 89 book chapters and 419 peer-reviewed journal articles. As researchers continue to delve into the details of their data, these publication numbers are expected to continue to increase after the programme ends. In addition to academic outputs, projects had published more than 650 other publications for broader engagement, including working papers, conference papers and policy briefings.

Citation rates

Citation rates for ESPA’s journal articles have been rising fast. The fact that citation rates for ESPA articles are consistently higher than the global average for environmental science publications suggests that ESPA articles are considered interesting and useful by other researchers. The spike in citation rates for articles written in 2012 reflects the fact that several of ESPA’s most highly cited articles were written in that year.

Comparison of citation rates for ESPA journal articles with the global average – by year of publication

Cumulative trend in citations in ISI Web of Science for ESPA journal articles since August 2014
Southern authorship and open access

A particular concern of the ESPA programme has been to promote equitable partnerships between Northern and Southern researchers, including in authorship of research publications. However, gauging success on this issue is difficult as no baselines seem to exist for comparison. Over ESPA’s lifetime, 62% of journal articles involved at least one author based in the Global South and 24% were led by a Southern author. To ensure research publications were easily accessible to all researchers, ESPA encouraged its researchers to pursue open access options. The proportion of journal articles published as open access increased steadily over the lifetime of the programme to 61% in May 2018. This trend was encouraged by a series of open access grants for authors unable to obtain the necessary funding from their own institutions.

Where ESPA articles are being published: Reaching an interdisciplinary audience

As a highly interdisciplinary programme, it is not surprising that the majority of ESPA’s journal articles have been published in titles that can be described as being multi- or interdisciplinary. A large number of articles have been published in predominantly natural science-focused journals while only a small number have been published in journals that mostly target social scientists. This skewed distribution could be due to different publication practices in natural and social sciences as well as a slightly delayed engagement of social scientists in ESPA research.

Of the 419 ESPA journal articles published by mid-May 2018, over a quarter (28%) have been published in just 11 journals, most of which are highly interdisciplinary. At the other extreme, around a third (30%) of the ESPA articles have been published in journals with only a single ESPA publication so far, suggesting a more specialised audience. The rest of the articles are spread across journals that have published 2-6 ESPA articles each.


ESPA’s science

A social-ecological systems approach captures complexity

ESPA researchers investigated the many interacting scales and dimensions of social and ecological systems, contributing to a growing body of scientific knowledge in this area. These approaches emphasised the importance of understanding complexity to explore poverty-ecosystem links. ESPA projects investigated ecological and social limits and thresholds. Several tested the notion of a ‘just space’ in which societies produce and consume environmental resources within planetary boundaries and also in a way that meets accepted notions of equity and fairness (for more on environmental justice approaches, see ‘Governance’, page 16).

ESPA science has stressed that social-ecological change is non-linear and may involve unknown feedback mechanisms. The resilience of individuals, households and communities to external shocks affects how systems behave. Several notable ESPA studies have tried to apply this type of systems thinking at the scale of a bio-geographical region, as in river basins in China. ESPA research has particularly highlighted cross-scale linkages: for example, research on the links between community-based cocoa farming systems and global supply chains (Box 17).

Although policy and investment decisions are challenging in a context of uncertainty around risks, thresholds and tipping points, the complexity of social-ecological systems is not an excuse for inaction. Some ESPA projects have developed approaches to systems modelling and public consultation that have opened up scientific systems thinking to non-specialist audiences and supported public dialogue around development choices. The projects on environmental vulnerability and development choices in Western Himalayas (Box 1) and Bangladesh (Box 2) provide examples.

BOX 1: ESPA research informs local citizens’ action to protect critical water sources

In the northern Indian state of Uttarakhand, the town of Nainital relies on its central lake to support its growing economy. However, the lake’s critical recharge zone has been affected by rapid increases in water pumping and construction, and lake water levels are now declining. An ESPA project researched the impact of human activities on water levels and convened an expert group that supported local citizens to bring a public interest lawsuit to protect their water source.

The researchers assessed the impact of water management on the poorest residents, who rely on springs fed by the broader catchment area. Their interdisciplinary approach pulled together data and subject specialists who, in the round, could best advise citizen groups on why the lake’s water and related springs are at risk. The team held group discussions with stakeholders to collect geo-hydrological and socio-economic information about the area. They mapped the catchment boundary of the recharge zone and studied land-use changes over time. They undertook archival research on the shifts in local policies, land ownership patterns, construction and pollution levels over time; and surveyed households to understand people’s dependency on freshwater springs. They also carried out repeated water quality assessments on the springs.

As a result, the project empowered non-experts with crucial knowledge about critical water zones and the importance of recharging watercourses, and brought together diverse stakeholders (in particular the citizens impacted by water shortages) to promote dialogue. The research fed into a public interest lawsuit, media articles and a citizen group, all focused on building support for rejuvenating the lake’s recharge zone. The Uttarakhand state government has released 30 million rupees (or just under US$ 500,000) for this purpose.
**BOX 2: Integrated environment and development modelling to benefit the poorest in coastal Bangladesh**

A broad range of pressures face the more than 40 million men, women and children of the Ganges-Brahmaputra-Meghna delta. Unreliable supplies of clean water, increasing soil salinisation, land-use change, migration to urban areas, food price instability, floods, cyclones and more are affecting people’s livelihoods and wellbeing. Researchers from the ESPA Deltas project sought to analyse these multiple drivers of change and model how different development interventions and decisions might affect the lives of people living in the delta now, as well as the next generations.

The interdisciplinary team comprised natural and social scientists and engineers from Bangladesh, the United Kingdom and elsewhere. The team collected and analysed a broad range of data relating to the biophysical environment and ecosystem services (especially fisheries, agriculture and mangroves), as well as household incomes, wellbeing, and governance.

Working with a broad range of local and national stakeholders, the team developed scenarios for how ecosystem services and poverty might be affected by different climate and development trajectories. A model – the Delta Dynamic Integrated Emulator Model (ΔDIEM) – was developed to incorporate and integrate this wealth of information. ΔDIEM is unique in linking biophysical, socioeconomic and governance processes to consider a range of plausible futures to inform policy-making. For example, it can assess the impacts of a range of large-scale interventions like restoring mangroves, constructing polders or sea walls, and how these may vary for different social groups.

The Deltas team repeatedly engaged with, learned from, and fed back to stakeholders throughout the research process, convening events with communities, representatives of civil society organisations, government officials and more. The relationship with members of the Planning Division of the Government of Bangladesh developed from the project’s start in 2012 when Bangladeshi researchers reached out to government planners as they sought to shape their research with real-world policy imperatives in mind. For their part, government planners recognised the potential value of the model as a policy-support tool, such as for assessing proposals for the Bangladesh Delta Plan 2100 process. As a result, the Planning Commission requested further application of the ΔDIEM model. ESPA provided further funding to enable the researchers and government officials to explore the social, environmental and economic impacts of further development measures on the delta’s people and ecology.6

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**The ESPA Deltas model approach will make a difference by supporting evidence-based policy-making under different scenarios. It will also equip policy-makers, researchers and academics with knowledge, tools and practical skills to effectively apply data and evidence for sustainable project planning and development.**

Shanawez Hossain,
BRAC Institute of Governance and Development
A rapidly changing environment offers risks and opportunities

We live in a rapidly changing environment. ESPA science has explored the implications of rapid urbanisation and land-use intensification: two defining trends of our times. There are seemingly compelling reasons to intensify land-based production systems, such as agriculture, and yet the benefits of higher productivity have too often been accompanied by massive and detrimental contributions to global, regional and local environmental change. By 2050, there will be an estimated 9.8 billion people on the planet, potentially requiring a massive increase in global food production. Meanwhile, there is increasing competition for land arising from other urgent global and local challenges, including the expansion of protected areas to help conserve biodiversity and the rise of bioenergy crops to help tackle climate change. ESPA research has made a vital contribution to scientific understanding in this area by highlighting the serious risks and trade-offs created by land-use intensification. ESPA has underlined the need for more systematic and multi-faceted analyses of how different kinds of ecosystem services – supporting, provisioning, regulating, cultural services – are affected when land use is intensified for agriculture, forestry or other uses (see Box 3).

Globally, most of us live in urban areas: in 2009, the world’s urban population surpassed its rural population and urban-dwellers now make up some 54% of the world’s population. Rapidly urbanising and peri-urban areas in the Global South are a much under-studied location where ecosystem services still provide development benefits for vulnerable people, and where there are major opportunities to restore, conserve and provide sustainable ecosystem service benefits for the poorest people, into the future. A dedicated ESPA research call focused on urbanising areas and highlighted some of this potential (see Box 4) although the relation of ecosystem services, flows and benefits across rural and urban areas remains an important priority for future research (page 35).

**BOX 3: The risks and trade-offs posed by land-use intensification**

Policy-makers have focused predominantly on the potential to increase agricultural yields through land-use intensification. An ESPA review of the most recent research in this area revealed that land-use intensification in fact poses an increasing threat to future food production because it is degrading ecosystems so profoundly: through accelerated soil erosion, loss of biodiversity, pest damage and changes to nitrogen and phosphorous cycles. Intensification has also led to over-extraction of water and pollution of water sources, while agriculture already accounts for 70% of freshwater extraction.

An ESPA review finds that judging success of land-use intensification solely in terms of food production and incomes, which often increase, may overlook the frequent negative impacts on other ecosystem services and wellbeing, particularly of the poorest.

Meanwhile, some indicators of sustainability that are widely recognised as important outcomes of land use (e.g. water purification, water regulation) are infrequently researched and, when they are, the majority of cases show that these ecosystem services are negatively affected by land-use intensification.
BOX 4: Making the most of peri-urban ecosystem services

Ecosystem services are vital for peri-urban and urbanising areas, and the people who live in them. These services are under threat from redevelopment, pollution and overconsumption, and there are gaps in the policies and structures that should protect them. Despite these challenges, there are opportunities for local authorities and citizens to work together and join up policy with action on the ground.

The ESPA ‘Risks and responses to urban futures’ project joined with residents to study changes in the environment, agriculture, social patterns and governance in Karhera, a peri-urban village in the state of Uttar Pradesh, India. Together, they looked at how to improve urban planning and development.

Karhera has experienced significant, rapid land-use change. Nearby areas have become informal industrial clusters, the government has acquired land for infrastructure construction and for setting up a City Forest park – which has brought enjoyment for some but has restricted access to natural resources for those who used to farm in the area. New factory work has provided jobs for some residents and has attracted migrants; while unregulated manufacturing activity has polluted the Hindon river, which runs through Karhera.

The ESPA research team has raised awareness among local planners and environmental groups of the potential for a fairer and more sustainable peri-urban economy. Their key message: ‘The ecosystem services produced by peri-urban ecosystems and through peri-urban agriculture play significant roles in multiple aspects of urban sustainability and resilience, from food security to disaster risk management. Yet the ecosystems upon which these services depend are increasingly under threat and persistently overlooked in policy and planning.’ The team has pressed for participatory mapping and long-term engagements between planners and peri-urban communities – as a way of revealing the links between environment, poverty and health that are neglected in current planning.

A symposium sponsored by ESPA and organised by ICLEI-Local Governments for Sustainability, South Asia in March 2018 in Delhi brought these important findings to a state and national audience, involving scientists and academics, researchers, development professionals, planners, elected representatives, government departments and peri-urban community members. It galvanised commitment to address the ‘institutional failure at several levels’ which is preventing urban and regional planners from analysing, managing and restoring the ecology of peri-urban areas. Addressing these gaps will be critical in order to achieve SDG 11 to make cities inclusive, safe, resilient and sustainable.10
Governance determines how ecosystem services contribute to wellbeing

ESPA research highlights the critical importance of governance in determining who accesses and benefits from natural resources, and how they contribute to poverty alleviation. Environmental governance is also deeply interconnected with how people perceive and value nature and prioritise it as an aspect of their wellbeing.

Several ESPA projects found that an environmental justice framing is a useful approach to understanding diverse perspectives on environmental management and change. Such an approach can demonstrate how the costs and benefits of environmental decisions are felt across society, and how different social groups value the environment. The approach is well suited to illuminating the nature and extent of trade-offs, and to bringing forward the views of poor and marginalised stakeholders, who are often under-represented through standard environmental management frameworks.

Although there is growing policy interest in achieving equity, including explicit mention in the SDGs, it is seldom achieved in practice, particularly for the poorest members of communities and for cultural minorities. ESPA researchers and others have made some progress in developing principles and describing characteristics of equitable governance systems, which may highlight the ‘hidden costs’ of environmental interventions and help resolve trade-offs. ESPA research particularly stressed the need for:

- Recognition of the rights and values of local people in respect of the environment – as well as recognition of their current contributions to environmental stewardship. This can be particularly important for indigenous people who may lack the opportunities to make their voices heard.
- Procedural rights: ensuring that all relevant people are involved in the decision-making process regarding issues that affect them, with mechanisms in place to resolve any disputes.
- Distribution of benefits: ensuring that local people benefit fairly from environmental management regimes and that any costs to local people are mitigated.

BOX 5: ESPA team puts community partnership at the heart of Madagascar forest research

Madagascar’s forests store carbon of global importance, and provide incredible biodiversity. The Malagasy government is using REDD+ (Reducing Emissions from Deforestation and forest Degradation) to contribute to its global climate mitigation efforts. Shifting agriculture (locally known as ‘tavy’) has traditionally provided access to fertile soils for millions of small farmers. Conservation restrictions aimed at protecting forests by preventing tavy have the potential to negatively impact poor people’s livelihoods. The ESPA P4GES project investigated how international ecosystem service payment schemes (including REDD+) most effectively reduce poverty.

The team’s extensive quantitative analysis suggested that conservation restrictions are creating significant costs to local people – and that efforts to compensate local people are benefiting better-off community members rather than those hit hardest by restricted access to forest lands. To ensure that the global benefits of forest conservation do not impose local costs, special efforts must be made to ensure benefits from REDD+ projects reach the poorest.

Two years after the P4GES fieldwork in rural Madagascar, the project team returned to the communities concerned to share preliminary results and discuss the way ahead. This took significant advance planning, with most of the project sites inaccessible by vehicle, and some more than a day’s walk from the nearest road. It also required flexibility in dealing with adverse weather conditions and other logistical challenges.

The project produced a booklet in Malagasy to summarise the research’s objectives and its findings, working with a local cartoonist to communicate complex ideas in an attractive and accessible way. These outreach efforts were well received in all villages, resulting in lively discussions about how land degradation could influence flooding and water availability, and why it is important to keep the forest intact.

Meanwhile, at national level, the P4GES team has briefed the Government of Madagascar, the World Bank country office, and international conservation agencies involved in managing forest conservation projects in Madagascar (including a major new Green Climate Fund project in the eastern rainforests). Discussions have focused on improving the design of benefit-sharing activities of relevant forest programmes, to ensure that the poorest people don’t lose out.
Traditional knowledge improves water management techniques across rural and urban Peru

In the Peruvian highlands, communities depend on water sources for their livelihoods and cattle, which can lead to overgrazing and jeopardise water flows due to sediment build-up. Downstream, Lima depends on these upstream sources to provide for its population and agriculture.

Historically, data has not been sufficient regarding the environmental management of these highland regions and their role in securing fresh water flows downstream – making it difficult to plan interventions.

The ESPA MOUNTAIN-EVO project found that overgrazing has a significant effect on the variability of river flows, due to sediment build-up. The team investigated and developed low-cost monitoring equipment, and tested and restored an ancient hydrological technique that uses *mamanteo* canal systems as an example of an inexpensive way to manage water flows effectively. The Peruvian research was part of a broader, four-country study into how monitoring and knowledge generation of ecosystem services in mountain regions can be improved, and used to support a process of adaptive governance focused on poverty alleviation.

‘EVO’ stands for Environmental Virtual Observatories – and describes a process of participatory data collection or ‘citizen science’ supported by technologies that the project team developed. The aim of these technologies was to help create local, tailored online environments where data collectors and decision-makers could share and distribute processed data and information, and interact to identify development solutions.

Using this research as a case study, Lima’s water utility is investing US$23 million in ‘green infrastructure’, with US$1 million allocated for *mamanteo* restoration.13

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**FEATURED BOOK**

*The justices and injustices of ecosystem services*

Thomas Sikor (Ed.)

Earthscan (2013)

The implications of ecosystem services governance for justice and injustice have rarely been explored: this book seeks to start filling that gap. The authors find that environmental management cannot be separated from justice concerns. The book develops its argument through analyses of prominent governance interventions and the conceptual underpinnings of the ecosystem services framework. Key examples are revenue-sharing around protected areas and REDD+ mechanisms for forest ecosystems. The chapters demonstrate how environmental interventions create opportunities for enhancing social justice, and how so-called technical measures run the risk of causing injustice if they are poorly designed.

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*Comuneros (community members) in Huamantanga had sometimes said that problems occur because of their own lack of knowledge. This project looked exactly at bridging that gap, by not only generating new knowledge on the local water cycle but valuing local ancestral knowledge as well. Therefore, the environmental virtual observatory generates and rescues rural science, taking into account the characteristics, interests and needs of those people to whom we were delivering information.*

Katya Perez, CONDESAN
Wellbeing is multidimensional and dynamic

Environment-related policies and programmes are often assumed to generate ‘win-wins’ for communities and the environment. In reality, they can work against people who are already disadvantaged. ESPA science emphasises that social groups (women and men, youth and elders, ethnic groups, rich and poor) use and value environmental resources differently; this needs to be recognised in decision-making requiring disaggregated data collection and analysis (see Box 7). ESPA research has found that a stronger focus is needed on the quality of life for disadvantaged people, based on approaches that go beyond conventional income-based measures of poverty to recognise the multiple dimensions of wellbeing. Not only does wellbeing incorporate objective, subjective and relational aspects, but it is also a dynamic phenomenon which changes over time and place.

What is more, governments are not measuring people’s wellbeing adequately. Measures of multidimensional poverty include social and economic dimensions, but fail to reflect the important role that the environment plays in human wellbeing. This constrains the design of effective development policies. ESPA research has looked at how measures of poverty can be expanded to better capture the importance of the environment for human wellbeing (see Box 8). Importantly, the environment may also have negative impacts on people, and understanding local practices and perceptions around these can support better management interventions (Box 9).

BOX 7: How people value ecosystem services differently: A Mozambican example

ESPA science has highlighted how different social groups within a community – such as women and men, for example – value the contribution of ecosystem services to their wellbeing in different ways. Making these values explicit and giving different community members voice in decision-making therefore has a profound impact on the way that natural resources are managed and their benefits enjoyed by different groups.

The ESPA Sustainable Poverty Alleviation from Coastal Ecosystem Services (SPACES) project sought to improve scientific understanding of the complex relationship between ecosystem services, poverty, and human wellbeing in coastal Mozambique and Kenya. As part of this multi-year initiative, the research team investigated the status of ecosystem services in a total of eight villages, and how ecosystem benefits are perceived to accrue to different social groups within the communities, in both monetary and non-monetary ways.

The team made their data and analysis easier for communities and other stakeholders to explore and discuss by presenting it in searchable form on the SPACES Data Explorer tool (see www.espa-spaces.org).

This chart from the Data Explorer shows how octopus is perceived to contribute to the wellbeing of men and women in Vamizi, Mozambique.
Box 8: Using multidimensional poverty measures in Malawi and Rwanda

ESPA supported the Poverty-Environment Initiative - a joint initiative of the United Nations Development Programme and the United Nations Environment Programme - to share their research findings and advise the Government of Malawi’s Ministry of Health. This has led the Ministry to consider its broader options for measuring human wellbeing: ‘We very much like the idea of a new poverty index, a multi-dimensional index. We could use it for targeting resource allocation,’ said Dr Gerald Manthalu, Deputy Director of Planning, Ministry of Health.

In Rwanda, the government has recognised the interconnectedness of the environment and poverty by incorporating environmental sustainability objectives in the national development plans, since 2006. It now wishes to improve its indicators for monitoring progress towards reducing environment-related poverty. Discussions are ongoing to integrate such aspects into future household surveys and national poverty reporting by the Statistics Office. On the request of the Ministry of Finance and Economic Planning, the research team provided comments on the new National Strategy for Transformation, which could assist in taking this work forward.14

Box 9: Study of animal-borne diseases transforms West African approaches to public health

In parts of West Africa, Lassa fever – a viral haemorrhagic fever – is endemic. In Sierra Leone, it adds significantly to people’s health burdens, poverty and vulnerability. Transmission is normally via Mastomys natalensis, a common rodent. The ESPA-funded Dynamic Drivers of Disease in Africa Consortium (DDDAC) aimed to carry out a more holistic study of Lassa fever in Sierra Leone, to understand the social and economic factors behind its transmission. The research unexpectedly took on new relevance when the 2014/15 Ebola epidemic swept through the region.

When the Ebola epidemic occurred, many aspects of the team’s work had to stop. Governments placed restrictions on movement, and laboratory and clinic facilities were redirected towards urgent work on the Ebola virus. However, as the DDDAC team recounts: ‘much of the learning about the social dynamics, and in particular local understandings, of Lassa fever which had already been undertaken was found to be applicable to Ebola. Ebola has similar symptoms to Lassa fever, and like Lassa fever also has an animal host.’

They add: ‘As the public health response to the Ebola epidemic in West Africa faltered for a variety of reasons, our team worked with partners in both the UK and Sierra Leone to form the Ebola Response Anthropology Platform, funded by Wellcome/DFID. This became a focal point for anthropological advice in the UK and internationally. It delivered real-time evidence-based advice to organisations such as DFID, the UK Ministry of Defence, the World Health Organization, the UN Mission for Ebola Emergency Response and many others.’

The Ebola Response Anthropology Platform played a role in highlighting the social dimensions of how cases are identified, how deaths and funerals are managed, and how community-based communications can be most effective. Its online resources were accessed by tens of thousands of users in Africa, Europe and the Americas, as well as being deeply influential in shaping the UK Government’s strategy.15

Featured Book

One health: Science, politics and zoonotic disease in Africa

Kevin Bardosh (Ed.)

Routledge (2016)

Zoonotic diseases – pathogens transmitted from animals to people – offer particularly challenging problems for global health institutions and actors, given the complex social-ecological dynamics at play. Unprecedented global connectivity and rapid social and environmental change create new risks and demand new approaches. ‘One Health’ highlights the need for collaboration across sectors and disciplines to tackle zoonotic diseases.

This book offers a much-needed political economy analysis of zoonosis research and policy. Through ethnographic, qualitative and quantitative data, it draws together diverse case studies, including from Kenya, Zambia, Nigeria, Ghana and Sierra Leone.
Sharing ESPA’s headlines

From 2016 to 2018, the ESPA programme funded a process to synthesise the key scientific findings of the individual projects and come up with a ‘whole greater than the sum of the parts’. An assessment by ESPA’s Regional Evidence Advisors of academic and policy demand combined with a review of the topics on which ESPA had a depth of ‘supply’ (in the form of academic papers) underpinned ESPA’s academic synthesis in the form of a book with 18 thematic chapters. Some of these chapters were provided by a set of synthesis grants, awarded in 2016, which were designed to ‘significantly advance global understanding on the way that ecosystem services contribute to poverty alleviation and explicitly, to build upon the scientific advances and evidence generated by ESPA projects’. These chapters were supplemented with other chapters specially commissioned from ESPA researchers with a track record on the desired themes. All chapter authors used ESPA research, knowledge and frameworks as a starting point but also extended their analysis more widely to consider other relevant research evidence from the perspective of ESPA’s objectives and approach. The resulting ESPA book: Ecosystem services and poverty alleviation: Trade-offs and governance (see below) is available in open access form.

**BOX 10: ESPA’s policy and practice briefs**

Different audiences need different information. Many ESPA projects produced policy briefs to convey key messages to relevant local and national policy-makers. At programme level, the Directorate supported production of a variety of information documents from working papers to policy and practice briefs which conveyed messages from one or a number of projects to a wider policy audience. Most were written to meet the specific needs of a clearly identified audience. For example, a policy brief on payments for ecosystem services was produced in response to a request from the Government of Nepal for a summary of evidence from ESPA to contribute to its deliberations around a new policy on such payments. Other briefs were written to coincide with particular meetings like one on wellbeing which was formally included as an information paper for governments at the 2018 Plenary meeting of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). This brief resulted from a workshop of ESPA researchers and IPBES experts and contributed to discussions by IPBES about ‘good quality of life’ by sharing ESPA’s findings on the multidimensional and dynamic nature of wellbeing.

**FEATURED BOOK**

*Ecosystem services and poverty alleviation: Trade-offs and governance*

Kate Schreckenberg, Georgina Mace and Mahesh Poudyal (Eds)
Routledge (Taylor & Francis Group)(2018)

In ESPA’s book, which is published as open access, the authors address the evolving framings and contexts for ecosystem services, poverty and wellbeing research. They review the impacts of ongoing drivers of change and present new ways to achieve sustainable wellbeing, equity, diversity, and resilience. They evaluate the potential solutions that can be offered by carefully designed conservation projects, payment schemes, and novel governance approaches across scales – from local to national and international.

An important part of ESPA’s legacy, the book is intended to provide a rich reference source for advanced students, researchers and policy-makers in ecology, environmental studies, ecological economics and sustainable development.
Headlines for policy-makers

ESPA’s final Annual Science Conference, in Edinburgh in 2017, gave researchers a chance to debate emergent, synthesis findings from the programme. ESPA also invited guests who work as government decision-makers and policy advisors to the conference, to debate the findings and ground-truth them in the context of the complex development challenges they face. As a result of this dialogue, and in parallel to production of the academic book (above) the Directorate summarised the key messages from ESPA research for policy-makers.

The summary for policy-makers - An environment for wellbeing: Pathways out of poverty - including its many translations, has been shared directly with hundreds of researchers, policy-makers, donors and international programme staff across Africa and Asia as part of ESPA’s concluding outreach and engagement programme in early 2018.

Documentary films: A compelling platform for debate and action

ESPA has worked with world-class film-makers to capture some of the programme’s key research findings in short documentaries. As well as providing insight into the development challenges tackled by ESPA research, these films also give direct voice to some of ESPA’s researchers and community partners in the Global South. The films have been used as an educational tool and as springboards for policy debate in numerous events and courses, since their launch in early 2018.

- An environment for wellbeing: Pathways out of poverty (12 mins).
- An environment for wellbeing: Pathways out of poverty (4 mins).
- Protected areas for all: Ensuring better outcomes for people and the environment.
- Creating a sustainable future for climate vulnerable deltas.
- Promoting sustainability and wellbeing in Ghana’s cocoa forests.
- ESPA voices from Asia and Africa.

Find these and more on: www.espa.ac.uk/multimedia
Building capacity

Community of ESPA researchers

Enhancing capacity of researchers in the Global South was an important objective for ESPA. A range of activities from conferences to Fellowship grants and professional development courses were organised at the programme level. However, much capacity-building took place at project level (Box 11) and individual researchers used their experience in ESPA projects to further their careers (see testimonials on page 25). Furthermore, intensive engagement by some projects with communities has also led to increased and sustained capacity for development action within these communities (see Box 19, page 34, on ESPA’s engagement with coastal communities).

Every year from 2012 through to 2017, the programme held an Annual Science Conference for ESPA-funded researchers. These conferences provided opportunities to bring people together at the programmatic level – beyond the scope of individual projects – at first to share conceptual framings of ecosystem services for poverty alleviation issues, and later, to share the results of ESPA research. Early conferences also provided the opportunity for skill-building sessions for ESPA researchers: from how to run an effective interdisciplinarity research programme, to aspects of stakeholder engagement and research for development impact.

Special thematic events, convened in the UK, Africa and Asia over the programme’s life, allowed ESPA researchers to compare methodologies. One such example was the 2014 event on ‘Researching complexity’, at which researchers compared the different techniques they were applying in ESPA projects, ranging from simplifying the system, through to much more advanced systems analysis and modelling. Short summaries of all major ESPA events and webinars, and many of the presentations given at them, are available, by year, on: www.espa.ac.uk/events

As well as face-to-face meetings, ESPA organised regular webinars for members of the ESPA community. These, too, were informational – orientating researchers to donor requirements and impact strategies – as well as providing opportunities to present and discuss research findings. The ESPA Directorate built a subscriber base of some 2,200 academics and development practitioners, from across the world, who engaged in these ‘virtual’ conversations.

BOX 11: Technical training to address research and policy challenges

Many ESPA projects provided training in the countries or localities where they were working. This included a large number of trainings for local academics on research protocols and ethics. For example, the P4GES project (Box 5, page 16) offered three separate trainings in Madagascar: on writing and publishing academic papers, research ethics and modelling. The P4GES writing workshop on ‘Publishing ecosystem-related research in international journals’ trained Malagasy academics in how to target the most appropriate journals and make it through the review process. Some training sessions were opened to academics outside the project teams, and to local development professionals, and focused on timely and relevant policy challenges. For example, the P4GES project’s modelling workshop trained participants in how to use the WaterWorld and Co$tingNature ecosystem service assessment tools. Thirty participants from the Ministry of Water, Ministry of Environment and Forests, university departments, Ministry of Finance and local and international conservation and development organisations took part. They used the tools to better understand ecosystem services in Madagascar’s Corridor Ankeniheny Zahamena protected area. P4GES and Natura Bolivia also joined forces to provide training on payments for ecosystem services in Madagascar and South Africa (based on the ESPA-funded ‘Watershared’ experience, Box 18, page 33).
The ESPA programme funded eight ESPA Fellowship projects in seven different countries, with topics ranging from natural hazard management to agriculture and forest governance. This initiative aimed to provide professional development to early career researchers.

As well as undertaking field research and receiving mentoring from more experienced researchers, the Fellows participated in a Summer School in New Lanark, Scotland, in mid-2016. The Summer School aimed to provide the Fellows and other early career researchers with deeper understanding of new methods and routes for achieving development impact. The Fellows were able to discuss their key research findings with other academics and with development practitioners.

You can read about all the Fellowships by visiting:

www.espa.ac.uk/projects/espa-fellowships
Professional development course on ecosystem services for poverty alleviation

ESPA provided professional development courses in Malawi, Kenya and Madagascar, to increase the effectiveness of university lecturers in teaching their students about integrated ecosystem services, poverty and wellbeing topics. The courses were also an effort to develop ESPA’s legacy. The courses were developed and organised in collaboration with local partner institutions and local instructors and a Kenyan researcher led development of the course materials. The materials comprise PowerPoint packs, notes for lecturers and case studies on ten key topics identified with the help of an academic steering group. Available in both English and French on the ESPA website, this course material is an important vehicle for transmitting ESPA’s legacy to the next generation of Southern researchers.

Professional development course on payments for ecosystem services

An ESPA call for ‘research impact’ activities also led to a project to address policy-makers’ lack of knowledge about the potential benefits and risks of payments for ecosystem services and similar ‘conditional transfer’ programmes. The programme supported them to develop training materials to improve the capacity of local researchers and practitioners to design, implement and monitor pro-poor programmes. The audience included governments, development agencies, non-governmental organisations (NGOs) and academics in developing countries.

The capacity-development materials include a guidance manual and practitioners’ note, which highlights the conditions under which payments for ecosystem services can be made ‘pro-poor’, and ten in-depth case studies of different types of conditional transfer programmes are presented from around the world. The materials were used in training in Bhutan in mid-2018 and are being disseminated to Asian Development Bank staff and via the Bank’s Asian networks. The materials are also available on the ESPA website.

www.espa.ac.uk/training

For most of us, we are committing ourselves that we will introduce an ecosystem services for poverty alleviation course which we can teach in our universities and institutions.

Participant, ESPA professional development course, Malawi

Ecosystem services for poverty alleviation has a big role to play in policy especially in relation to Kenya’s vision 2030, which we can’t achieve if we don’t take care of our environment, so we need to understand the services we get from our ecosystems.

Prof Kung’u
Kenyatta University, Kenya
Alexandra Rasoamanana

Alexandra Rasoamanana was a research assistant for the ESPA project: Can paying for global ecosystem services reduce poverty? (P4GES). As a result of her distinguished academic achievements, she has been awarded a scholarship to study for a MSc in Conservation and Rural Development at the University of Kent. Here is Alexandra’s story.

Growing up with traffic and pollution in the capital city of Madagascar, my connection with biodiversity was limited to films such as ‘The Lion King’ that were on TV. Being a conservationist was not my first choice when I had to decide to choose my path at the university. I chose to be an agronomist as I was convinced that to end poverty in my country, I needed basic knowledge to improve farming systems: 70% of the population are poor farmers who rely profoundly on natural resources for their subsistence. During my study, we did a lot of fieldwork that connected us with different rural areas in Madagascar. [Then] I went back to university for a one-year study on forestry and environment. Seeing the call for research assistant in the P4GES project, I was attracted by the interdisciplinarity of the project.

It was a great challenge but I am still proud, as P4GES experiences brought so much to me by adding valuable professional skills and growing up confidently in my new goal to become a conservationist. My work in the team was mainly in collecting data for the socio-economics work package but we had a lot of training to improve our data analysis skills and to get involved in publishing our findings and spreading them.

While I was a research assistant within ESPA I had a lot of opportunity to disseminate our findings in different international and national conferences. One that has marked my career is getting funding from the Global Youth Biodiversity Network to participate at the Biodiversity Convention’s Conference of Parties in Cancún, Mexico. This was an astonishing journey as it opened my eyes about the importance of policy advocacy at international level and its impacts in conservation practice. Later on, I wish to start an NGO working at national level for more broad action in dealing with conservation and poverty issues in Madagascar. Honestly, without ESPA and P4GES project experience, I think I could have missed all of these opportunities to build myself and my career and have this strong motivation to work to give others more opportunities in their lives.

Stephen Sironka Sankeni

Stephen Sironka Sankeni was a research assistant for the ESPA-funded Poverty and ecosystem Impacts of payment for wildlife conservation initiatives in Africa: Tanzania’s Wildlife Management Areas (PIMA) project. Now he has been awarded a Commonwealth Scholarship to pursue a Masters degree in Public Policy and Management at the University of York (UK), which will enable him to hone his skills further. This is Stephen’s story.

I was brought up in a typical Maasai pastoralist family in Tanzania and Kenya: like my classmates, during the holidays I herded the family livestock and helped in the fields. Following my high school education in Kenya and Tanzania, I joined Tumaini University in Iringa, Tanzania to study toward a Bachelors degree in Community Development. At the moment, I am based in Longido town and work as a research assistant for the University of Colorado and University College London.

I was a research assistant for the ESPA-funded PIMA project, a country-wide initiative for community based natural resource management. I played a role in convening focus groups according to [villagers’] wealth ranking. We compared and recorded individual households’ economic situations both before and after the Wildlife Management Areas were established. I wrote narratives of all the research project villages in Burunge and Enduimet Wildlife Management Areas and control villages as well. At the end of the project, I revisited the study villages and presented the site-specific short reports and explained the preliminary findings to villagers, and captured their feedback.

The significance of the research was: to evaluate the social impacts of wildlife management areas, to make it easier for people to inform the government and NGOs about resource and management needs and to help stakeholders to understand more about what works best for sustainable management of local natural resources.

Now that I have won a Commonwealth scholarship, I hope to work within my home community and nationally to improve the lives of people both during and following completion of the ESPA-PIMA programme. I hope to help build local and regional development capacity through policy formulation, management, implementation and negotiation.
Research for development impact

How ESPA worked for development impact

Academics are increasingly called upon to provide ‘research that matters’ to underpin action on major global challenges. ESPA was an ambitious programme to produce research that met academic standards of excellence and, at the same time, resulted in concrete improvements in the way that ecosystem services contribute to poverty alleviation. Its third objective was to engage and communicate effectively with policy-makers, practitioners and decision-makers. Central to ESPA’s strategy to meet this objective were its impact guidance documents (issued 2013, revised 2016) and the Directorate’s appointment of Regional Evidence Advisors in Delhi and Nairobi, see www.espa.ac.uk/about.

Researchers themselves also rose to the challenge, as evidenced by the many case studies in this report.

The Regional Evidence Advisors were responsible for identifying thematic and sectoral areas where the programme had the potential for enduring influence. They worked to forge partnerships with Asian and African institutions which would, in turn, champion ESPA’s results and learning and help to create a meaningful legacy. These legacy partnerships include:

- Ecosystem-Based Agriculture and Food Security in Africa (EBAFOSA) network, Malawi and Kenya;
- International Centre for Integrated Mountain Development (ICIMOD), Nepal;
- BRAC and the Bangladesh Centre for Advanced Studies, Bangladesh;
- ICLEI-Local Governments for Sustainability, South Asia.

These legacy partnerships have not only underpinned the successful series of outreach events and policy engagements sponsored by ESPA in its final years, but they have also led to seminal statements such as the ESPA Africa Declaration (see Box 12) and extensive coverage of ecosystem services for poverty alleviation issues in multiple languages in the African and Asian press.

“When extreme floods come on board, we have quality soils being washed downstream and that reduces the productivity of the farms. During extreme droughts we are losing massively in terms of livestock deaths and even human losses… [We need] science-based information that can enable us to create wealth out of ecosystem-based investments.”

Kenya’s Environment Secretary Alice Kaudia, (ESPA finale event, Nairobi, March 2018)
African researchers have called for sustainable development policies to be accountable to local communities. The recommendation was issued as part of a declaration adopted by academics and policy-makers representing 10 countries at the ESPA programme’s African finale event in Nairobi, March 2018.

The ESPA Africa Declaration emphasises that many vulnerable communities depend directly on natural environments and the benefits they provide, including agricultural land, fish stocks, timber, clean water and biodiversity. However, many ecosystems are rapidly being degraded due to global, regional and local economic factors, as well as climate change. For instance, in the Western Indian Ocean, local and global demand for fish, combined with new harvesting technologies, are contributing to the systematic depletion of fish stocks, threatening the livelihoods of millions.

Based on ESPA’s nine years of global sustainability science, the drafters of the Declaration extracted 14 policy priorities central to the African context. These priorities fall under five categories: land-use intensification; coastal management and fisheries; conservation areas; supporting environmental stewardship; and environmental governance. With this Declaration, the researchers hope to bridge the gap between academia and policy, and work closely with governments, regional organisations, the private sector, and civil society to achieve better outcomes for people and the environment.

‘We are convinced,’ the researchers write, ‘that these actions are crucial to avoid high risks of irreversible ecological change and harm to vulnerable groups, and to ensure that environment and development interventions raise people out of poverty.’

Read the full ESPA Africa Declaration on www.espa.ac.uk/africa-declaration

The drafters of the Declaration represent 10 research institutions and networks: LEAD Southern and Eastern Africa; Stockholm Resilience Centre; Stellenbosch University; the Nigerian Institute of Social and Economic Research; Madagasikara Voakajy; University of Antananarivo; Kenya Marine and Fisheries Research Institute; Nature Conservation Research Centre; Makerere University; and Conservation International.
ESPA organised a full day session at the 10th Western Indian Ocean Marine Science Association (WIOMSA) Symposium in Dar es Salaam, Tanzania, to inform policy-makers, development professionals and researchers on the links between ecosystem services and human wellbeing in coastal and marine environments. The session highlighted findings from ESPA’s three coastal-marine research projects in the Indian Ocean region. It was held in partnership with the Institute of Marine Science (IMS) and the Department of Aquatic Sciences and Fisheries (DASF) of the University of Dar es Salaam.

One lead ESPA researcher found the conference to be ‘an excellent mix of natural and social science presentations that brought people and ecosystems together, and so was an excellent opportunity to share ESPA findings and make new linkages for future research and policy engagement’. Participants praised ‘the strong evidence base shared, which pointed to connections between the dynamics and management of ecosystem services and poverty alleviation’; the ‘innovative and methodological novelty emerging from the interdisciplinary framework of ESPA research’; the potential for African governments and institutions to shift their perspectives on multi-dimensional poverty; and the ‘need to communicate science in a better fashion’, especially to the audiences with ‘pragmatic uses’ for it. Read the abstracts from ESPA’s session at the WIOMSA Symposium on [www.espa.ac.uk/events](http://www.espa.ac.uk/events) and an ESPA policy brief on ecosystem approaches to fisheries management – aimed at regional and global policy forums – on [www.espa.ac.uk/results/policy-practice-briefs](http://www.espa.ac.uk/results/policy-practice-briefs).

ESPA partnered with EBAFOSA, a network of experts in climate-smart agriculture, to organise workshops in Kenya and Malawi in late 2017. The aim of the events was to showcase ESPA research regarding the impacts of climate-smart agriculture on the poorest farmers, and to discuss the implications of these findings for scaling up climate-smart agriculture in the two countries. Climate-smart agriculture refers to the ways that agricultural practices can be made more resilient to the impacts of climate change and how farming practices can reduce levels of greenhouse gas emissions, and even sequester carbon.

An ESPA project to synthesise the findings of the programme’s agricultural work found that climate-smart farming practices are not necessarily pro-poor by design. Careful programme design is needed in order to benefit the poorest. The Kenya and Malawi events identified: first, the risks of taking a business-as-usual approach to agriculture in a changing climate, given the increasing prevalence of droughts and floods in Kenya and Malawi, which threaten crops and livestock, food security and livelihoods; and second, the need for guidance to steer the architects of climate-smart agriculture programmes towards robust, pro-poor approaches. On this second point, participants embraced the idea of a simple poster with programme guidance. They and ESPA co-produced a poster, which is now available for download on the ESPA website ([www.espa.ac.uk/multimedia](http://www.espa.ac.uk/multimedia)) and is being distributed in hard copy through EBAFOSA chapters in Malawi and Kenya and through ESPA networks in Ghana and Ethiopia and more widely in sub-Saharan Africa. ESPA also produced a policy brief and working paper on the potential of climate-smart agriculture to benefit the poorest farmers ([see www.espa.ac.uk/publications](http://www.espa.ac.uk/publications)), which are being used and distributed through these networks.
Lessons for future research programmes

Taking a programmatic approach

In its last year, the ESPA Directorate undertook a process of desk reviews, interviews, an online survey and a workshop to draw lessons on how to undertake research with development impact. These findings are described in more detail in an ESPA Working Paper: ‘Research with development impact’. This internal learning process was paralleled by an independent End of Programme Review which, amongst other things, commented in more detail on the role of the Directorate itself. ESPA found that creating an overarching programme governance structure, and a corresponding ‘central unit’ such as the ESPA Directorate, improved opportunities for development impact by:

• **Enhancing the impact potential of individual projects:** through targeted support, a programme-level central unit can enable project teams to identify avenues for impact that may otherwise have been missed (when research teams are too caught up in the nitty-gritty of research); provide targeted follow-up funding for projects to capitalise on impact potential; provide communication and engagement support to ensure that impact stories are documented and shared; and support with monitoring and evaluation. It is important to provide in-person support, not just written guidance.

• **Facilitating collaboration and cross-fertilisation among projects:** by providing support on knowledge management and communications, a central unit can ensure that lessons learned and good practices on how to ‘do’ research for impact are captured and shared effectively. This kind of additional support can help highlight options for scaling up impact and applying for joint funding: chances which may be out of reach otherwise.

• **Creating aggregate, larger scale policy impact from synthesis research:** a central programme director, scientific advisor and supporting unit enabled individual ESPA experts to meet to critique and cross-fertilise ideas – and provided the time and space for the main findings of the programme to be synthesised, publicised and made available in a freely accessible form to support future sustainability research.

Impact strategy

The ESPA programme recognised the importance of impact strategies at project and programme level, in order for its research to be useful and informative for development. ESPA’s experiences in designing a ‘theory of change’ and programmatic impact strategy, as well as projects’ individual impact pathways, provide lessons for future programmes of this kind. ESPA learned that:

• **Impact takes time:** Achieving impact is a time-consuming process, and a long-term one – rarely seen within the timeframe of any one individual research project. Using a theory-of-change approach (which provides a plan of how to achieve desired impacts) – as ESPA did – helps researchers keep sight of the long term, and to achieve, measure and demonstrate progress towards development impact.

• **Impact depends crucially on relations with partners and stakeholders:** Impact occurs in the elusive sweet spot where ‘demand’ for and ‘supply’ of evidence meet, making it crucial to establish relations with users of research. Sound knowledge of the local contexts, well-established working relations with research partners, and trust and mutual respect (Box 15, page 30) between researchers and stakeholders, are all key enablers of impact.

• **‘Impact’ is not simply an add-on – it challenges conventional research paradigms and academic culture:** ESPA’s experience defies the idea of easy win-win solutions for both research excellence (as conventionally understood and measured in academia) and development impact (as defined by the prevailing notion of aid effectiveness and value for money). In order for research to be ‘impactful’, its design and fundamental research questions may need to be rethought. This challenges research and funders to realistically consider the conceptual and practical implications and trade-offs of ‘doing research differently’.
Interdisciplinarity

Funding agencies see interdisciplinary research as an avenue to tackle complex global challenges. ESPA was the first collaboration among DFID and the UK’s natural and social science Research Councils (NERC and ESRC), and the requirement for interdisciplinary research was written into its second objective. ESPA’s experience confirms that an interdisciplinary approach makes research more relevant to real-life development quandaries and policy questions – but to do so successfully relies on the following factors:

- **Interdisciplinary research takes extra time** at every stage: from defining research questions, to agreeing data-collection techniques and sample sizes, to publishing. Project timelines need to allow for team interaction, mutual learning and flexibility.

- **Interdisciplinarity is about keeping sight of the ‘bigger picture.’** Team composition should reflect a mix of disciplinary expertise, and also include generalist researchers who are able to work across disciplines.

- **Interpersonal relations are crucial to the success of interdisciplinary processes.** Facilitation skills are critical, but are generally not prioritised in team composition and leadership.

- **Interdisciplinary research requires flexible management.** Interdisciplinary enquiries can open new avenues of investigation, and even completely reframe research questions. This unpredictability should be treated as an opportunity not a problem.

**BOX 15: Successful partnerships are built on mutual trust**

Many ESPA researchers attributed their partnerships’ successes to positive interpersonal relations, which ranged from purely professional collaboration to personal friendships. Time seems to be an essential condition: meeting face-to-face, particularly outside formal meetings, allows trust to flourish, although it does not guarantee it. Procedures to ensure equity among research partners also played an important role in ESPA projects. For instance, ESPA teams found that Memoranda of Understanding can establish clear agreement on sensitive issues such as intellectual property, data-sharing and authorship.

For example, the Memorandum of Understanding among organisational partners in the ESPA-funded ASSETS project included a comprehensive publication protocol, regulating data use and authorship. In particular, the protocol stipulated that any team member intending to write a paper using project data had to share a one-page concept note with the whole of the ASSETS team in advance, to allow any other team member to participate in the paper if they so wished.
Equitable research partnerships

Collaboration among research institutions in the Global North and Global South is widely regarded as critical in supporting evidence-based action on the global challenges of sustainable development. Funders call repeatedly for partnerships to be ‘equitable’. Yet the exact meaning of this term, and its practical implications, often remains unclear. Having truly equitable partnerships is difficult and goes beyond good intentions – it involves recognising structural power differences, unconscious bias and divergent incentive structures.

North-South partnerships have been central to ESPA’s ethos and Theory of Change. ESPA project partnerships showed wide variations in complexity, from the very simple (bilateral collaboration between academic institutions in the Global North and South) to the multifaceted, with multiple layers of interactions (multi-country, interdisciplinary partnerships involving both academic and non-academic actors in different regions). Based on this experience, ESPA elaborated a framework for designing equitable partnership, based on the three dimensions of equity: recognising rights, providing procedural rights (access to decision-making) and distributing benefits fairly (see www.espa.ac.uk/impact).

The ESPA programme intentionally supported the development of partnerships between institutions of the global South and North by providing early-stage partnership development grants – some of which led to successful proposals for further, in-depth research. In the closing years of the ESPA programme (2016-18), the ESPA Directorate also provided a series of small outreach and impact grants (see Timeline, page 7), to support these collaborations for broader outreach and policy engagement activities. Reflecting and learning on the programme’s experience with partnerships, ESPA researchers and staff suggest that:

- **Building relationships is a long-term process.** The first collaboration among two partners may not be the most ‘impactful’, but may lay the foundations for longer-term collaboration.
- **Money affects power relations among partners.** Northern institutions are usually in charge of managing the budget, and this inevitably affects power dynamics. The implications need to be recognised and openly discussed.
- **Different incentive structures matter.** An equitable partnership is one where the interests and incentives of all partners receive fair recognition.
- **Successful partnerships are built on mutual trust.** Ensuring transparency and accountability can go a long way in promoting trust among partners.
- **Adopting an equity framework** – structured around the dimensions of recognition, procedure and distribution – can help identify where challenges lie, and the ways they can be addressed.
In Kenya, research supported by the ESPA programme has enabled local people to conserve their mangroves in exchange for community development projects, in a scheme that is impacting both Kenyan and international policy. Mangroves are highly efficient at capturing carbon, much of which ends up buried below ground and is stored away from the atmosphere. The ESPA-supported initiative researched the mangroves’ total potential to store carbon below ground, and the vulnerability of this carbon if the mangroves were cut.

The research team was able to demonstrate the degree to which conserving – and planting – mangroves can store greenhouse gas emissions. These emissions would otherwise be released if villagers cut mangroves to support their livelihoods. In order to compensate the villagers for forgoing use of the mangrove forests, the research team explored whether it would be possible for them to be paid for conservation.

Using the data, a newly established community organisation, Mikoko Pamoja (‘Mangroves together’), applied for, and received, accreditation to sell carbon credits from Plan Vivo, which requires schemes to show long-term sustainability and benefit to people’s livelihoods and vital ecosystems. All income from these sales is re-invested in local projects and continued conservation. The work contributes to Kenya’s national plan for REDD+.

The initiative employed scientists from the Gazi-based Kenya Marine and Fisheries Research Institute, local residents and volunteers from the international NGO Earthwatch, and restored thousands of new trees over 615 hectares of coastline. By meeting the Plan Vivo carbon standard – a standard for accrediting sales of carbon credits on the international market – the project has also successfully mobilised private-sector support for the community’s sustainable management activities – for the long term.\[18\]

**Community engagement and impact partnerships**

ESPA encouraged projects to engage with the potential research users and/or the ultimate beneficiaries of development interventions – in order to leverage the benefits of local knowledge and connections. This was seen as a way of both enriching the research process itself, and ultimately having more uptake and influence with the results.

ESPA’s impact strategy stressed the importance of involving local stakeholders in all stages of the research process, ideally from the beginning, not as passive recipients of knowledge but as partners with a sense of involvement in – and ownership of – the research process. This was intended to help researchers develop a more nuanced understanding of barriers that inhibit change at the individual or institutional level, devise strategies to overcome these barriers, and contribute to the delivery of effective and sustainable outcomes that are maintained and owned by stakeholders after the end of ESPA funding.

**BOX 16: Mangrove conservation is engaging communities and protecting both livelihoods and carbon stores**

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BOX 17: Methods for eco-friendly cocoa farming capture communities’ and companies’ interest

Ghana’s cocoa yields are at risk from both forest loss and from the impacts of climate change. Private cocoa companies, the smallholder farmers from whom companies purchase cocoa beans, and the Government of Ghana all have an interest in protecting and enhancing yields of the lucrative cocoa crop.

The ESPA ECOLIMITS project has identified eco-friendly practices and key management variables that have the potential to boost cocoa yields. The measures trialled in the ECOLIMITS project to increase cocoa yields have also caught the attention of major cocoa companies operating in the country, such as Touton.

“The proximity of farm to forest, and the shade trees, and their impact on yield is of great interest to Touton – we want to look at how the forests really do influence the yield of cocoa … we will take it forward with the Nature Conservation Research Centre and the Ghana Cocoa Board. The climate-smart approach is important for Touton, because we believe that to be able to secure the supply chain over a long period, we need to address all the issues from a climate change perspective.”

Ernest Dwamena, Corporate Social Responsibility Lead, Touton Ghana

BOX 18: Transfers to communities offer incentives to maintain ‘water factories’

The ‘water factories’ in Bolivia’s upper watersheds have been degraded by unsustainable land use. An ESPA-supported project demonstrates how upstream communities can be rewarded for protecting these lands, both for their own benefit and for the benefit of downstream water users. Reciprocal Water Agreements, also known as ‘Watershared’, provide an efficient route for communities to protect their water sources and ensure forest conservation. They provide communities with assets to help them improve their livelihoods: such as livestock fences, beekeeping equipment and saplings, in exchange for adopting better environmental stewardship, such as reducing water pollution by livestock and maintaining forest cover in upper watersheds.

In Bolivia, ESPA-supported research has enhanced the effectiveness and expansion of Watershared, by quantifying how much water is released by intact forests, how much additional conservation results from the Watershared programme, and how local stakeholders participate and benefit. The results of this research have generated interest from the private sector and have shown the potential for expansion and replication of Watershared in Latin America and beyond.
BOX 19: Communities build on ESPA science in coastal Kenya

The ESPA Sustainable Poverty Alleviation from Coastal Ecosystem Services (SPACES) project mapped the ecosystem goods and services in eight villages in coastal Mozambique and Kenya. The team undertook extensive community consultations to understand how different aspects of ecosystems contribute to human wellbeing.

ESPA later provided funds for the SPACES project to disseminate its findings extensively among the communities involved. The team used a combination of meetings with high-level decision-makers and community dialogues to share information. The team also developed a data visualisation tool, the SPACES Data Explorer (Box 7, page 18), to make its project findings easy to access and use by a wide range of stakeholders.

Project officer Chris Cheupe and colleagues visited one of the communities, Tzunza in Kenya, a few months after the outreach phase, and were astonished by the number of spin-off initiatives that could be traced – in some way – to the project’s research and knowledge-sharing activities.

Chris recounts:

‘The Tzunza community have [undertaken] various initiatives to bring change to the larger community as a result of the knowledge obtained from the SPACES:

- A lot of women have joined saving groups and around 10 groups in Tzunza have been formed and been able to open bank accounts and start saving.
- Campaigns for environmental protection have taken root in this area, which has led to the community members embracing conservation initiatives, stopping cutting down trees and charcoal burning, and planting trees. This is evident in the increased establishment of tree nurseries in almost each household in Tzunza, so as to recover the degraded areas.
- COMTOUCH Kenya, an NGO, has been able to … secure funds that allowed them to set up of the Community Forest Association conservation programme for mangroves. In addition, the group was able to share the SPACES findings with the Public Complaints Committee (PCC) – established under Section 31 of the Environmental Management and Co-ordination Act (EMCA) 1999 to investigate allegations or complaints regarding the condition of the environment or on its own motion, suspected cases of environmental degradation and to make reports of its findings and recommendations thereon to the National Environment Council (NEC).
- Fishers have formed their own group and they have encouraged saving and applying for funding.
- The Nyota Njema Disabled Group has been registered and now assists its members to identify [suitable] livelihood activities. They also offer soft loans to members … and offer internal capacity-building on saving and entrepreneurial skills among themselves.
- The Jambo puppeteers [another community group] have started income-generating activities of trading in clothes and fish…’

These and other community groups promised to continue to spread the information obtained from the SPACES project to other groups and the entire Tzunza community so as to take positive measures to improve their wellbeing. The community also feel there is need for continuous sharing of information especially from research findings in order to strengthen their capacities. The SPACES experience highlights how extensive stakeholder engagement can spark new local initiatives – in many profound and unexpected ways.

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Ideas for future research

Looking ahead, there are several areas in which more research could accelerate progress towards enhancing wellbeing for all in an environmentally sustainable manner, such as:

• To what extent can ecosystem service-based approaches be combined with other forms of technological and socio-institutional innovations?
• How can governance at local, national and international levels be better connected vertically and across sectors to ensure that environment-related decision-making in one place doesn’t inadvertently close down options or impose costs on others?
• What combination of regulatory and market-based approaches to ecosystem governance is most effective in different contexts?
• In particular, how do we govern the commons (from our global atmosphere to trans-boundary fisheries and local pastures) in ways that are accountable and fair to vulnerable groups, including to future generations?
• What are the opportunities and constraints for managing ecosystem services for poverty alleviation in a context of rapid changes: from urbanisation to climate change?
• How do we harness the opportunities provided by increasingly widespread information and communication technologies, as a positive factor supporting more effective and just decision-making on environmental issues?
• Where ecosystem restoration is necessary, how do we ensure it meets the requirements of multiple stakeholders and is achieved rapidly and at scale?

None of these questions can easily be pigeon-holed as the domain of a single discipline. Indeed, a clear lesson from ESPA’s work is the need for more co-produced and interdisciplinary research to provide implementation-ready solutions to policy-makers’ questions.22

ESPA was set up specifically to gather good hard evidence about what kinds of policies and actions will help poor people in the face of environmental degradation. ESPA’s research has been delivering development impact, working in an integrated way with many different groups of people: local communities, government, non-governmental organisations and the private sector.
Governance

The governance of the ESPA programme encompassed a number of different bodies which undertook different roles.

Throughout the nine years of the ESPA programme there were various staff changes. The names presented below are reported from March 2018 when the programme ended.

Programme Executive Board

The Programme Executive Board was responsible for the delivery and strategic direction of the programme, ensuring it achieved its stated objectives and met the strategic needs of the funding partners (DFID, NERC and ESRC). The funding partners were the decision-making executives, with other members operating in an advisory capacity. The Board Chair, Steve Bass, supported ESPA from inception to completion.

Steve Bass, International Institute for Environment and Development (Independent Chair)
Alessandro Moscuzza, DFID
Simon Kerley, NERC
Sophie Martin / Claire Spooner, ESRC

Programme Management Unit

The Programme Management Unit was responsible for the overall management, coordination and delivery of the programme on a day to day basis. It consisted of the Programme Management Group, the Secretariat, a business assurance role and the Directorate.

Programme Management Group

The Programme Management Group consisted of members of the three funding partners with the authority to make decisions regarding the management and operations of the programme on non-strategic matters. It was accountable to the Programme Executive Board.

Alessandro Moscuzza / Ken De Souza, DFID
Dominique Butt (Business Assurance), NERC
Mary Day, ESRC

Secretariat

The Secretariat was based at NERC, and was responsible for the management of the programme on behalf of the funding partners. This included financial management, procurement and grant awarding, which were carried out according to the policies and procedures of the Research Councils and UK Shared Business Services Ltd (which supported the Research Councils’ activities).

Beth Taylor, NERC
**Directorate**

The Directorate was based at Research into Results Ltd (RiR, University of Edinburgh) and was responsible for leading the implementation and coordination of all ESPA activities (except for the NERC grant awarding process), and undertaking other activities which added value to the programme. The Director provided the overall intellectual leadership for the programme and acted as the de facto head of the programme (except in terms of financial management) under the authority of the Programme Executive Board.

**Directorate team 2017-2018**

- **Director:**
  - Dr Kate Schreckenberg

- **RiR Ltd and University of Edinburgh Representative:**
  - Charles Hill (acting on behalf of Hugh Edmiston RiR Chair)

- **Operations Manager:**
  - Eliane Reid

- **Impact Manager:**
  - Rebecca Murray

- **Impact and Learning Specialist:**
  - Valeria Izzi

- **Impact and Reporting Specialist:**
  - Bouchra Chakroune

- **Programme Co-ordinator:**
  - Eeli Lee

- **Programme Events Co-ordinator:**
  - Dr David Bell

- **Communications Specialist:**
  - Mairi Dupar

- **Postdoctoral Fellow:**
  - Dr Mahesh Poudyal

- **Data and Communications Interns:**
  - James Gigg; Lucie Kelleher

- **African Professional Development Course Project Manager:**
  - Dr Tobias Nyumba

- **Regional Evidence Advisor, South Asia:**
  - Raj Patra

- **Regional Evidence Advisor, East and Southern Africa:**
  - Sam Mwangi

- **Scientific Advisor:**
  - Dame Prof. Georgina Mace (University College London)

- **Communications Advisor:**
  - Liz Carlile (International Institute for Environment and Development)
International Programme Advisory Committee

The International Programme Advisory Committee (I-PAC) provided independent advice in relation to strategic and technical aspects of the programme.

Dr Atiq Rahman, Bangladesh Centre for Advanced Studies (Co-Chair)

"I pledge to be an ambassador for ESPA in the years ahead and thank the ESPA community for the team working during my tenure as International Programme Advisory Committee Co-Chair."

Prof. Kate Brown, University of Exeter (Co-Chair)

"ESPA has been a path-breaking research programme. It has produced absolutely world-class cutting-edge research, which is highly interdisciplinary and the result of genuine international collaboration. ESPA contributes towards informing and addressing critical and fundamental challenges for sustainable development. I hope these insights can inform the operationalisation of the SDGs."

Prof. Virgilio Viana, Fundação Amazonas Sustentável

"ESPA is a landmark in the history of interdisciplinary science applied to ecosystem services and poverty. For me it was a rich opportunity to interact with some of the world’s leading thinkers and practitioners in the field. I hope that ESPA’s legacy will provide a lasting impact on feasible solutions for design and implementation of sound policies aimed at securing the provision of ecosystem services combined with eradication of extreme poverty in developing countries."

Dr Janet Ranganathan, World Resources Institute

"ESPA highlights the need for planners to do a better job of managing trade-offs across ecosystem services, in terms of who gets the benefits and who bears the costs. ESPA also provided invaluable lessons on how to design an effective research into action programme. These lessons may then become its greatest legacy."

Prof. John Adeoti, Nigerian Institute of Social and Economic Research

"ESPA effectively brought the frontier of research on ecosystem services closer to researchers in developing countries. For me, the most profound legacy of ESPA would be the extent to which ESPA findings provoke behavioural changes."

Prof. Christo Fabricius, Nelson Mandela Metropolitan University and Resilience Alliance

"The ESPA researchers, Directorate team and International Programme Advisory Committee inspired me. I truly hope follow-up funding programmes will take up the lessons learnt from the Programme."
Finance

The ESPA programme was funded by DFID, NERC and ESRC. The total allocated budget from the funders for the programme, including for its preparatory phase, was c. £44 million (Table 1).

Table 1: Total programme allocation from funders

<table>
<thead>
<tr>
<th>Funder</th>
<th>Amount £</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFID</td>
<td>29,800,000</td>
</tr>
<tr>
<td>NERC</td>
<td>10,456,318</td>
</tr>
<tr>
<td>ESRC</td>
<td>3,724,816</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43,981,134</strong></td>
</tr>
</tbody>
</table>

The programme ran eight open competitive calls for research grant funding through NERC totalling £32 million (Table 2). All research projects finished on 31st March 2018. The outputs from these projects can be found at:

> www.espa.ac.uk

Table 2: Total programme research grant funding

<table>
<thead>
<tr>
<th>Research grants call</th>
<th>Total funding £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthening research capacity</td>
<td>1,376,793</td>
</tr>
<tr>
<td>Partnership and project development</td>
<td>1,294,844</td>
</tr>
<tr>
<td>Programme framework</td>
<td>4,009,380</td>
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<td>ESPA 2011 grants</td>
<td>8,991,410</td>
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<td>ESPA 2012 grants</td>
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<td>ESPA 2013 grants</td>
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<tr>
<td>ESPA 2014 blue skies grants</td>
<td>618,661</td>
</tr>
<tr>
<td>ESPA 2016 synthesis grants</td>
<td>767,473</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31,930,863</strong></td>
</tr>
</tbody>
</table>

The ESPA Directorate was hosted by RiR Ltd – a wholly owned subsidiary company of the University of Edinburgh. The Directorate held the following three contracts which supported programme activities.

- **ESPA Directorate core - £8,060,000**
- **ESPA Fellowship projects - £1,069,537**
- **ESPA Fellows capacity strengthening fund - £49,454**

The ESPA Directorate core contract of £8.06 million provided support to the overall programme, research projects, impact, learning, communications and legacy. The contract for the Fellowships supported eight Fellowship awards and the Fellows capacity strengthening fund provided further funding for capacity development.
Endnotes

1 Millennium Ecosystem Assessment (2005). [www.millenniumassessment.org](http://www.millenniumassessment.org)


12 See project resources on [www.p4ges.org](http://www.p4ges.org)


