



CABI

in review



THE GLOBAL GOALS
For Sustainable Development

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Philip Walters, MBE, Chair

Foreword from the Chair

I am pleased to report continued growth of the organisation with positive progress on a number of fronts. However, 2016 has been challenging because of several unforeseen global events. Against this background, the organisation has done well to increase its revenues in both International Development and the Knowledge Business by 6%.

Our Publishing business has faced more challenging conditions, and we have seen the first year-on-year downturn in sales. The sales team has done a good job in winning back business in the second half of 2016 and we have launched a new version of the CAB Direct platform, allowing customers to obtain access to our CAB Abstracts and Global Health databases directly from CABI rather than going through third party vendors. As a result, the Board is optimistic that the business will return to growth in 2017.

Nevertheless, the overall performance of the Knowledge Business has been positive, with strong growth in Knowledge Management project work offsetting the reduction in core Publishing sales. A particular highlight has been the excellent progress made by the GODAN Initiative, for which CABI hosts the Secretariat. This is now a rapidly growing network of partners from government, international and private sector organisations, all committed to making data relevant to agriculture and nutrition available, accessible and usable worldwide. With CABI's help and support, GODAN has grown its base of partners to over 500 and run a highly successful Summit event in New York, which raised the profile of both organisations. We look forward to continuing to work together in support of this innovative initiative.

Over the next two years, a number of funding cycles for our key development programmes are coming to an end. However, it was extremely encouraging that our core donor relationship with DFID in the UK has been renewed for a further four years to 2020. The Board has been providing close support to management in securing further funding for Plantwise and other major ID programmes, particularly Invasive Species, which has been identified as CABI's next big area of focus.

The Board renewal process has continued, and in 2016 three more directors retired, two non-executive directors, Mr Emmanuel Owusu-Bennoah and Ms Vibha Dhawan, as well as long-standing executive director Mr Ian Barry. They have been replaced by Mr Prem Warrior, Ms Ruth Oniang'o and Professor Anne Glover, while Mr Rob Sloley has taken over from Ian Barry as CFO. All are of a very high calibre, with expertise and knowledge in the fields of agricultural business, science and development.

In the global climate of greater uncertainty, the Board has also been taking a more proactive approach to risk management and mitigation. Therefore, the Audit Committee has been renamed the Audit and Risk Committee, with a specific duty to look in more depth at key risks, and then to report back to the Board as necessary.

During the year, several of the non-executive directors also took the opportunity to visit some of CABI's programmes in the field, and gain a greater understanding of CABI's activities around the world. The highlight of my year was a chance to visit our Centre in Kenya, where I attended the African Green Revolution Forum, met staff and had the opportunity to see a Plantwise clinic in action. I had the chance to interact at all levels, from farmers to presidents, and to witness at first hand how the theory of the boardroom gets translated into practice in the field. It is clear to me that CABI is genuinely contributing to the transformation of smallholder agriculture worldwide.

Another chance for interaction was the 19th Review Conference, which took place in July and was a fantastic success. The Conference is a critical liaison with stakeholders and sets CABI's direction for the next three years. It facilitates collaboration, in both formal and informal settings, and I would like to thank Member Country representatives and their colleagues for their valuable contributions, which have given us a strong Medium Term Plan for 2017–19.

In conclusion, 2016 has been a very vibrant, interesting and, at times, challenging year, but the staff and the Board of CABI are in good shape and good spirits going forward into 2017.

Foreword from the CEO

Once again, CABI has delivered a good performance in 2016 in terms of the difference we have made to the lives of millions of smallholder farmers around the world, our continuing output of high-quality scientific publications and the organisation's financial performance for the year.

The year also brought to a close our Medium Term Strategy for 2014–16. This was the first time we had laid out very specific performance goals for the organisation over such a time period. Overall, we believe the organisation has performed well against these strategic, operational and financial objectives, with 85% of our targets being delivered fully or with only minor variances.

During that time, as evidenced by this report and the previous ones for 2014 and 2015, we have had a much sharper focus on delivering results at scale whilst also demonstrating and quantifying the impact of our work.

In this period we have evolved our core Publishing activities into a broader Knowledge Business with significant project-based activities as well as positioning CABI as a champion in the field of open data. Our International Development business has grown strongly and delivered consistent operating surplus as a result of the Medium Term Strategy.

In 2016, we continued to work towards making **no poverty (SDG 1)** a reality. Through collaboration with donors and partners and a focus on market access and trade, we helped smallholder farmers

tackle some of the worst crop pests, enabling them to grow and sell more of what they sow.

A core focus of many of our projects is tackling hunger and malnutrition, helping people living in poor rural communities to achieve **zero hunger (SDG 2)**. CABI has been at the forefront of the discovery and management of many destructive crop pests around the world, such as the fall armyworm in Africa, which threatens to destroy the food security of millions across the continent unless its spread is managed effectively.

As a scientific publisher, we are committed to providing quality learning resources for **quality education (SDG 4)**. In 2016, we launched our Open Books programme, as well as a new Horticultural Science information resource and an updated version of CABI's platform – CAB Direct.

Helping smallholder farmers adapt to the effects of climate change and grow more with fewer resources is a core part of CABI's work. In 2016, we supported farmers by sharing practical, scientific knowledge on **responsible consumption and production (SDG 12)**, focusing for example on reducing the use of harmful chemicals and pesticides.

Invasive species – animals, diseases and plants that are out of control and spreading rapidly – harm the world in economic and environmental terms, **destroying life on land (SDG 15)** and farmer livelihoods. In 2016, at the request of our Member

9.8m farmers

reached by Plantwise by the end of 2016

Worked in more than
40 countries
in 2016

141
staff publications published in 2016

50%
revenue growth over 5 years


Countries, CABI launched a major new initiative to investigate and tackle the threat of invasive species, with the aim of supporting 50 million vulnerable African and Asian farming families in rural poor communities.

Partnerships for the goals (SDG 17) are at the heart of all we do. In 2016, we played key roles in exciting global platforms to address some of the world's greatest challenges. This included the summit of Global Open Data for Agriculture and Nutrition, the Australia–Africa Plant Biosecurity Partnership and the Global Action Plan for Agricultural Diversification. We also continued to play leading roles in the AIRCA alliance and the Tropical Agriculture Platform (an initiative of the G20 Ministries of Agricultural Chief Scientists).

A particularly exciting development at the end of the year was confirmation of a significant new project funded by the UK Space Agency, which aims to develop a Pest Risk Information Service (PRISe) for Africa. The Total value of the project is £6.4m over 5 years, of which CABI will receive £3.8m, working with partners in Ghana, Kenya, Zambia and the UK.

In the first half of 2016, through a participative process of consultations with staff and member countries, we created our next Medium Term Strategy for the period 2017–19. A core framework for our strategy was the close alignment of our plans and objectives to the Sustainable Development Goals (SDGs).

The world's greatest challenges like hunger and poverty are complex. But as we look ahead to 2017 and beyond, CABI remains committed to building a brighter future for rural communities and their families by making a significant contribution to solving global problems in agriculture and the environment.

A portrait of Trevor Nicholls, CEO, smiling. He has white hair, wears glasses, a dark blue suit jacket, a white shirt, and a patterned tie. The background is a blurred green field.

Trevor Nicholls, CEO

2016 in review

Agreeing an agricultural innovation framework in Rwanda

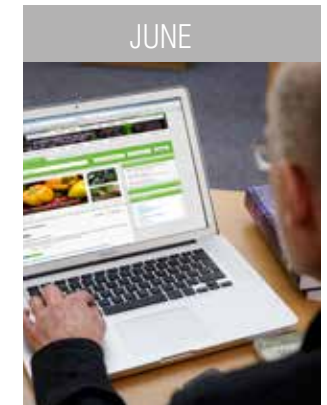
Holding our American and Caribbean regional consultation in Costa Rica

Plantwise wins the OECD Development Assistance Committee's Prize for innovation

Plantwise reports: 4.5 million farmers reached through plant clinics

CABI's Dr Kuhlmann at the G20 Agricultural Chief Scientists meeting

Launching the new Horticultural Science internet resource



CABI Review Conference – invasives initiative launched

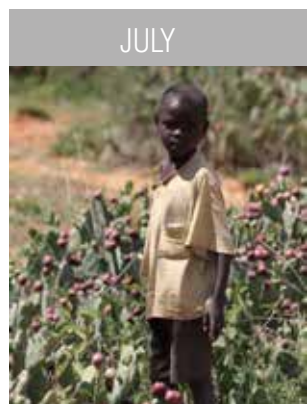
Opening a new regional Southern Africa office in Lusaka, Zambia

Calling for action at GODAN's global open data summit

Publishing our first open access book: *Global Health Research in an Unequal World*

Starting work on an ambitious global plan to diversify agriculture in a hotter world

Joining the Secretariat for the International Research Consortium on Animal Health





CABI's 19th Review Conference

"It's up to us to make something of the SDGs. We need partnerships. We need scientists, the private sector, literate farmers, the media, and we can actually make it happen. CABI is a great organization. I'm so happy to be part of it."

Prof Ruth Oniang'o, CABI Board Member

CABI held its **19th Review Conference** of Member Countries on 26–27 July 2016 in Egham, UK, to agree on the delivery of practical, on-the-ground projects to solve problems in agriculture and the environment. This triennial milestone in the CABI calendar followed three Regional Consultations and brought together 124 attendees from 35 countries.

Focusing on 'Knowledge for a sustainable future', the event showed how CABI is aligning its strategy with the Sustainable Development Goals (SDGs). In the coming years, CABI will prioritise helping farmers to trade more of what they grow, increasing food and nutrition security by bringing science from the lab to the field, and putting know-how into people's hands by enhancing the use of mobile ICTs.

Other priorities will include enhancing sustainable climate-smart agriculture, protecting biodiversity and ecosystems and strengthening capacity for development.

CABI's Review Conference approved a new strategy for **tackling invasive species**, building on the organization's 100-year history of expertise in this field. The aim: to protect and improve the livelihoods of 50 million African and Asian farming families impacted by invasive species, through an environmentally sustainable, regional approach to pest management.

In his review address, CABI CEO Dr Trevor Nicholls drew attention to the organization's delivery of impact, reach and value:

CABI has continued to make good progress strategically, operationally and financially. We're meeting key indicators and our progress is very much on track. Together, we have agreed an ambitious programme of activities over the next three years, which have the potential to make a difference to the lives of many smallholder farming families. I look forward to working with CABI's global network of members, partners and supporters to turn these plans into reality.



A woman wearing a vibrant, multi-colored shawl (purple, yellow, red, and white) stands in a rural, impoverished setting. She is looking directly at the camera with a serious expression. The background shows a thatched hut, several blue and yellow water jugs, and a red bucket on the ground. The scene is set outdoors with trees and a clear sky.

836 MILLION PEOPLE STILL LIVE IN EXTREME POVERTY

1 NO POVERTY



END POVERTY IN ALL ITS FORMS EVERYWHERE

Today, 836 million people still live in extreme poverty. Many depend on small-scale farms for their livelihoods.

Without adequate knowledge about plant health or access to regional markets, farmers remain trapped in a cycle of poverty, struggling to control crop pests and satisfy the demands of food quality and safety standards. It is vital they have access to the knowledge and resources they need to grow more, sell more and ultimately raise themselves out of poverty.

500 million smallholder farmers stand to gain from trading high-quality produce locally, regionally and internationally. In so doing, they will also sustainably feed the world's growing population.

Helping small-scale farmers lift themselves out of poverty

CABI works to increase the movement of food from 'field to fork' by collaborating with people and organisations across the supply chain. We do this by breaking down barriers in agricultural trade and helping small-scale farmers to build successful and viable businesses so they can ensure their own sustainable incomes.

We share practical knowledge with farmers and provide training to improve the quality of what they grow, enabling them to receive a fairer price for their produce. We also help them to understand the needs and expectations of markets, and link them with food manufacturers and retailers.

2016 saw us working with farmers and people in the food supply chain all over the world, from individuals to governments. Over the page are two of our projects.



VIDEO AND WEB LINKS WILL TAKE YOU TO AN EXTERNAL WEB PAGE



Better cotton brings better profits to farmers in Pakistan

Pakistan's cotton industry provides employment for 1.3 million farmers, many of whom are women. But challenges like cotton mealybug pests and poor farming practices involving chemical fertilisers and pesticides cause the industry to lose US\$350m each year. Without better farming knowledge, smallholders' livelihoods are under threat.

Cotton farmer Sohrab Rajper found himself in serious debt:

"The costs for fertilisers and pesticides rose every year. If I didn't constantly use more chemicals, I risked losing my entire harvest. It's a vicious circle. The first loan can only be paid back if the harvest is successful. But cultivation costs are so high, another loan is needed."

To cope with the challenge, CABI and partners introduced a project to implement the Better Cotton Standard System of sustainable cotton production, established by the  **Better Cotton Initiative**.

Around 55,000 farmers and farm labourers were trained in this system, helping them to learn whether pesticides are necessary, and how to use plant-based alternatives to chemicals.

Central to the system was restoring insect populations through Natural Enemies Field Reservoirs. Eighty-two reservoirs established in Pakistan reared beneficial insects – enemies of pests like the mealybug – in their millions in farmers' fields.

Farmers also learned to improve soil fertility, irrigate efficiently, harvest and store crops effectively, and apply good work ethics in the field.

More than 12,000 women farm labourers were trained in empowerment and child labour eradication. Embracing the project to change their family's lives, hundreds of children have been enrolled in school instead of farm labour.

The project has given thousands of farmers like Sohrab the confidence to step off the pesticide treadmill, protect their crops using natural means, and start making more profit from their cotton crops.

Cotton production costs have decreased and crop yields have improved. The reduction in chemicals has not only benefitted natural ecosystems and human health but, importantly, is safeguarding rural livelihoods and alleviating poverty.

Sohrab's participation in the project brought about the change he longed for:

"My costs have reduced and my income has increased... and it's all because I followed guidelines from the CABI team."

Donors and Partners

DONORS

BCI Growth & Innovation Fund, managed by Sustainable Trade Initiative IDH

PARTNERS

Agriculture Research Institute (ARI) Tando Jam-Sindh

CABI CENTRES

CABI in Pakistan




Boost comes to cocoa farmers in Papua New Guinea

In Papua New Guinea (PNG), cocoa is a key export crop, which contributes significantly to the nation's GDP and foreign exchange. Smallholder farmers grow 80% of PNG's cocoa, with over 150,000 farming households depending on it for their income.

In 2006, the arrival of the cocoa pod borer – an insect pest – in East New Britain Province put farmers' livelihoods at risk. Cocoa pod borer is a difficult pest to eradicate and can cause crop losses of up to 80–90%.

Devastation caused by this pest in PNG led to a massive reduction in cocoa harvest and great hardship for farmers, with many of them abandoning their cocoa plots. The country also faced the added worry that the pest would spread to other provinces.

In 2008, CABI partnered with the PNG Cocoa Coconut Institute Limited in a three-year Integrated Pest and Disease Management (IPDM) project to  **tackle the cocoa pod borer in PNG**. Funded by the Australian Centre for International Agricultural Research (ACIAR), the project aimed to share knowledge with cocoa farmers on techniques to manage the cocoa pod borer.

As this pest has long been one of the most damaging to cocoa crops in Southeast Asia, options for managing it were already known. CABI and other project partners adapted management methods for PNG and developed training programmes for farmers and other cocoa value chain stakeholders, with the aim of making sure the methods could be used over the long term.

The project provided training to 530 trainers and farmers. These IPDM techniques have been incorporated into national cocoa policies and disseminated more widely through extension activities reaching over 3,500 farmers in PNG. In 2015, CABI and project partners went back to PNG to assess the project's impact. Farmers who had adopted IPDM techniques said they now have better yields and incomes.

Also, management of the pest has become part of PNG's national cocoa strategy and is helping to restore farmers' confidence in cocoa as a source of income. Further investment by ACIAR and World Bank integrate the IPDM approaches. ACIAR projected a 20% adoption rate and estimated that 30,000 farmers will have adopted improved farming techniques by 2019 including control of cocoa pod borer.

While most of the adoption will take place in future, the real project expenditure on ACIAR projects (including CABI-led activities) of just under AUS\$12 million may produce total benefits of AUS\$58.4 million.

Donors and Partners

DONORS

Australian Centre for International Agricultural Research (ACIAR)

PARTNERS

Asian Markets Research
PNG Cocoa & Coconut Institute (CCI)
University of Sydney

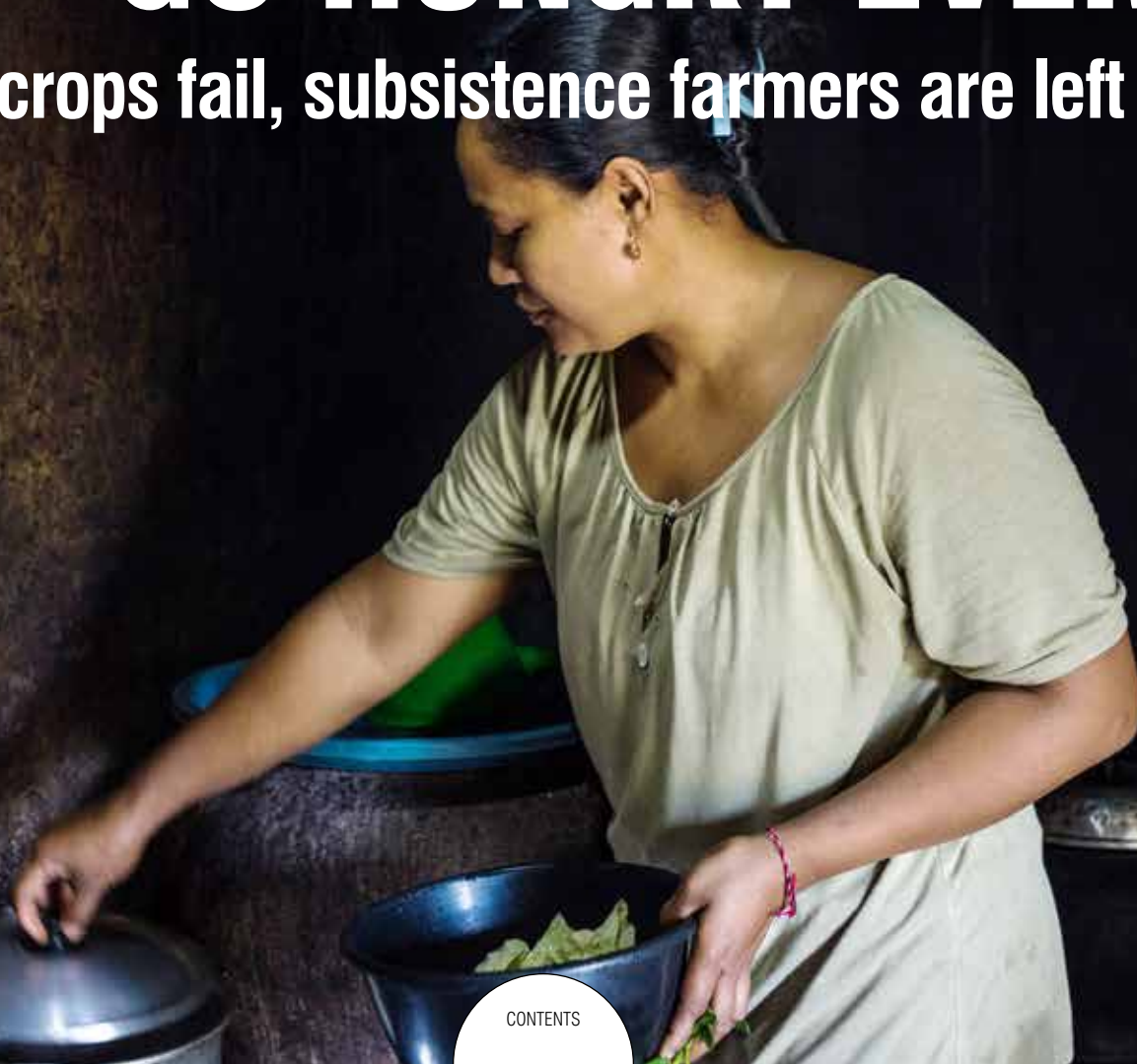
CABI CENTRES
CABI in SE Asia



795 MILLION PEOPLE

GO HUNGRY EVERY DAY

when crops fail, subsistence farmers are left with nothing



CONTENTS

2 ZERO HUNGER



END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

Today, 795 million people go hungry. By 2050, we will need to find food for an estimated 2 billion additional people. With 80% of food consumed in developing regions grown by small-scale farmers, we must find a sustainable food system that works for smallholders.

Achieving zero hunger presents an enormous challenge at both the individual and global levels. With food demand expected to grow by more than 70% by 2050, but with food production not set to keep pace, how do we feed the world?



VIDEO AND WEB LINKS WILL TAKE YOU TO AN EXTERNAL WEB PAGE

Investing in the world's 500 million smallholders in developing countries is vital for increasing food and nutritional security while supplying local and global food markets.

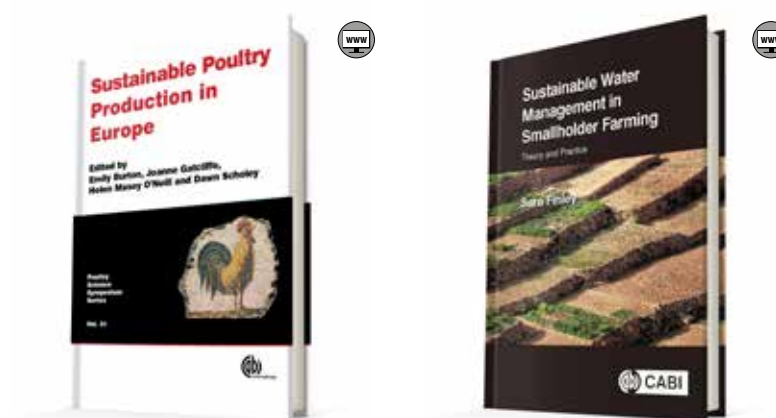
To end hunger, major challenges that must be overcome include the control of crop pests – responsible for up to 40% of crop losses – and raising awareness of agricultural best practice and nutritional information.

Tackling food security – at all levels

CABI addresses food security by supporting smallholder farmers and improving their crop yields, tackling pests and diseases and finding alternatives to pesticides. We improve access to better seeds and planting materials, and encourage efficient and effective use of organic fertilisers, combined with good agricultural practices.


In 2016, as part of a  **GSMA mNutrition** initiative, we created a new open access  **Nutrition Knowledge Bank** to help tackle malnutrition in Africa and Asia.

Over the page, read about how our food security programme is helping to identify and tackle crops pests destroying Africa's staple crops, and how a commitment to agricultural diversity is helping to ensure the future of food security.




CONTENTS

Tackling fall armyworm to safeguard Africa's food security

The  **invasive fall armyworm** is devastating lives across Africa. Guze Kampinga, a smallholder farmer and father of 15 in Malawi, expects to lose 30–50% of his maize crops to fall armyworm.

"So far I have sprayed 12 bottles of cypermethrin [pesticide] which has cost me 18,000 Kwacha [US\$25]. I am now very desperate and hopeless, I cannot afford more insecticides."

In 2016, fall armyworm (*Spodoptera frugiperda*) – a type of caterpillar so named because it migrates into the USA and Canada in the summer, causing outbreaks in the autumn (fall) – rapidly became one of the most damaging maize pests in Africa, causing crop failures across the continent. It may have been introduced to Africa accidentally on direct commercial flights, and spread quickly, devastating maize production, a staple crop in Africa and essential for feeding millions.

Following initial reports by IITA Bénin, CABI played a key role in identifying its arrival in Africa. Plant doctors working in  **Plantwise** clinics, helping farmers to diagnose crop pests, were the first to discover the caterpillar in Ghana. In collaboration with the Plant Protection and Regulatory Services Directorate of the Ministry of Food and Agriculture in Ghana,

CABI scientists confirmed the discovery through field collections in Ghana and DNA analysis undertaken at the organisation's molecular laboratory in Egham, UK.

In Ghana, CABI scientists worked with the PPRSD to understand how it arrived and how it spreads, and to develop materials to help plant doctors advise farmers about how they may control it in an environmentally friendly way.

CABI will use the lessons learned through Plantwise in the Americas to share best practice in pest management with farmers in Africa, in order to produce greater awareness and reduce impacts on the environment.

"This invasive species is now a serious pest spreading quickly in tropical Africa and with the potential to spread to Asia. Urgent action will be needed to minimise losses to crops and farmers' livelihoods. CABI will support national extension services to help farmers identify the species quickly and accurately, and conduct studies to evaluate the most appropriate control methods to use in Africa, for example, biological controls which reduce the need for insecticide."

Dr Matthew Cock, Chief Scientist, CABI

 **See our story on the BBC**

CABI CENTRES
CABI in Africa and UK




Global plan to diversify agriculture in a hotter world


"Global temperature increase will have serious implications for the production of major crops. However, crops that are currently underutilised can contribute to agricultural diversification, support more environmentally sustainable agricultural systems and provide new livelihood options for smallholders and the poor."

Dr Dennis Rangi, Director General, Development, CABI

The world depends on just four crops for most of its food production. Climate change and global warming are predicted to have a serious impact on the future of growing these crops.

Launched in 2015, alongside the UNFCCC Paris Climate Summit, the Global Action Plan for Agricultural Diversification (GAPAD), spearheaded by Crops For the Future (CFF) and supported by the Association of International Research and Development Centers for Agriculture (AIRCA), is an initiative to promote agricultural diversification in a hotter world.

In  **GAPAD in an era of climate change** it states, "We now need new, imaginative opportunities for agricultural diversification that include a wider range of crop species and agricultural systems that can link producers, consumers and markets and that are resilient to variable and volatile climates."

In October 2016, CABI and the World Vegetable Centre (AVRDC) organised a  **GAPAD roundtable forum** in Nairobi, Kenya to bring agricultural experts and leaders from around the world to tackle this critical subject.

The aim: to develop an authoritative, inclusive global action plan for agricultural diversification in a hotter climate, which will contribute to achieving SDG 2, Zero Hunger, and which has the support of all relevant stakeholders.

The meeting created a shared purpose among the participants to make an urgent start on the ambitious process of crop diversification. It is anticipated that GAPAD will be fully launched in 2017, and the plan for agricultural diversification submitted to the United Nations 2030 Sustainable Development Agenda.

"The process of developing GAPAD through a comprehensive programme of symposia over a three-year period will build new knowledge, foster leadership, strengthen existing capacities, enhance networks and partnerships and generate new collaboration and undertakings."

Her Excellency Rhoda Peace Tumusiime, Commissioner for Rural Economy and Agriculture, African Union Commission

For more information about GAPAD, see

 www.gapad.org



QUALITY EDUCATION

NEEDS QUALITY LEARNING
MATERIALS AND PRODUCTS

4 QUALITY EDUCATION





ENSURE INCLUSIVE AND QUALITY EDUCATION FOR ALL AND PROMOTE LIFELONG LEARNING

To solve the world's biggest challenges, we must ensure inclusive and quality education for all, and promote lifelong learning. By opening up and sharing information with the people who need it, and by applying the knowledge they gain, issues like climate change and food security can be addressed.

Connecting the dots: bringing together education, learning, resources and development projects

CABI produces key scientific publications, including CAB Abstracts and Global Health (world-leading databases covering applied life science). We also publish internet resources, compendia, books and eBooks aiming to further science and its application to real-world problems.

We gain synergy from combining our work in academic publishing with our work in international development, investing surpluses from our publishing business back into our development projects. The knowledge we collate is put to practical use by our scientists in the field, working in developing countries and helping to improve livelihoods worldwide.

Addressing the growing need for quality information on food crops, in 2016 CABI launched a new  **Horticultural Science internet resource** covering tropical, subtropical and temperate crops and regions. In 2017, we launched the  **Horticulture Compendium**, a new encyclopedic, mixed-media resource for information on horticultural food crops.

In 2016, CABI ...

published
70
new books

had a total of
8,532,702
abstracts in its
CAB Abstracts database

had a total of
2,805,459
abstracts in its
Global Health database



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CABI's move to open access brings knowledge to millions

The open access movement to provide free online scholarly, scientific research literature is growing rapidly. Open access literature provides an important means of reaching potentially millions of people and empowering them with information to tackle some of the world's biggest challenges like food security, malnutrition and stopping the spread of invasive species.

As a not-for-profit organisation, CABI strongly believes in sharing research with as wide an audience as possible and is committed to openness in scientific communication.

In 2016, we launched our  **Open Books programme** to support authors and collaborating organisations wanting to publish open access books across a range of life science subjects. CABI's first open access book,  **Global Health Research in an Unequal World**, looks at everyday ethical dilemmas and challenges that researchers face in global health. Respected medical journal *The Lancet*, states:


"The gap between international guidelines and on the ground realities can be vast. Aellah and her co-authors' book is an attempt to bridge this gap... The book is designed as a training tool for those involved in transnational medical and health research... [It] is a must-read for all of us who work in global health."

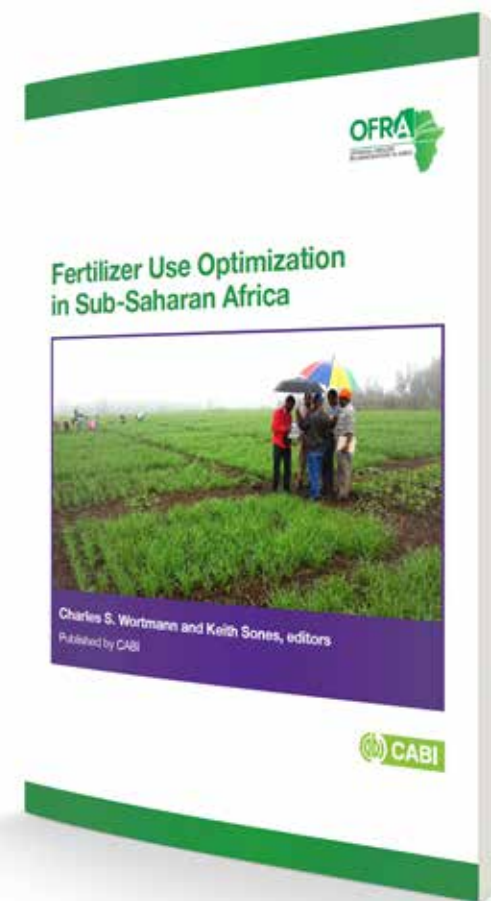
Osman Sankoh, *The Lancet*

CABI published the eBook *Fertilizer Use Optimization in Sub-Saharan Africa* as part of the Optimizing Fertilizer Recommendations in Africa (OFRA) project. The book gives approaches to optimising fertiliser use for improved crop productivity.

The OFRA project is supported by the Alliance for a Green Revolution in Africa (AGRA). The project is implemented by CABI in collaboration with the University of Nebraska Lincoln, and 13 National Agricultural Research Institutes from Kenya, Uganda, Tanzania, Mozambique, Zambia, Malawi, Mali, Burkina Faso, Nigeria, Ghana, Niger, Rwanda and Ethiopia.

CABI curates and manages the Invasive Species Compendium (ISC) – an open access online encyclopedic resource of scientific information to help people make decisions about invasive species management worldwide. Since its launch in 2012, 1.9 million people have accessed the ISC, which includes over 190,000 abstracts and full-text articles.

In 2016, ISC datasheets from CABI's  **Invasive Species Compendium** contributed to regulatory action against high-risk freshwater invasive species in the USA.



Delivering quality information and learning resources to support quality education worldwide

Quality education needs quality information and learning resources. As an academic publisher, CABI is committed to producing the best materials to help researchers tackle the world's most critical challenges like climate change and food security.

Our vision is to be the go-to place for agricultural information and expertise. We are growing our presence in countries and regions where issues like climate change adaptation and food security impact millions of people living in rural communities.

Recent publishing collaborations and sales in 2016 have seen CABI come together with institutions around the world to boost access to academic information on agriculture and the environment, often in areas of long-term strategic importance for developing countries.

Here are some of the highlights:

Brazil – The Federal University of Roraima buys a selection of CABI's eBook collection

China – The China Academic Library & Information System (CALIS) buys entire collection of CABI 2014–2016 eBooks

Costa Rica – Consejo Nacional de Rectores (CONARE) choose CABI Compendium Collection for five universities


Croatia – Consortium of academic institutions buys CAB Abstracts

Egypt – The Egyptian Presidential Council for Education and Scientific Research licensed a full suite of CABI eBooks for three years

India – Maharashtra Animal and Fishery Sciences University (MAFSU) buys CABI's VetMed Resource, CABI's most comprehensive source of information on all aspects of veterinary medicine and animal health, and CAB eBooks

Peru – Universidad Nacional Mayor de San Marcos subscribed to a full CABI tailored package for two years

In 2016, we launched an updated version of CABI's platform, CAB Direct, providing a single point of access to all CABI databases. The newly updated platform offers an improved literature research experience with new analysis and visualisation features, a project workspace for collaboration as well as enhanced search and browse functionality, all designed around the way researchers work.

The American Libraries Association publication,  **CHOICE magazine**, recently reviewed CAB Direct, awarding it the status of 'highly recommended'.

"The newly updated CAB Direct platform provides access to a pair of the world's most extensive research databases for the applied life sciences and public health: CAB Abstracts and Global Health."

J. C. Stachacz, Wilkes University, CHOICE



A person wearing a full-body yellow protective suit, a hood, and a white respirator mask is spraying pesticides in a field of green plants. The person is holding a spray wand, and a mist of white liquid is being emitted. In the background, there are trees and a string of white light bulbs hanging from a branch. The overall scene is outdoors and appears to be a rural or agricultural setting.

Worldwide

MILLIONS OF PEOPLE

ARE POISONED BY PESTICIDES

every year

12 RESPONSIBLE CONSUMPTION AND PRODUCTION





ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Environmental degradation of farmland will increasingly threaten our ability to meet the global population's food and nutritional needs. To grow more from the same or less land, we must give smallholders the knowledge they need to easily introduce higher-yielding and environmentally responsible food production techniques.

This is difficult to achieve in rural communities, particularly in developing regions, where agricultural knowledge is not always accessible.

Pesticides are the commonly used solution for tackling plant pests and maximising yields, even though these chemicals are often expensive and detrimental to the environment and human health.

Growing more and losing less in a sustainable way

Stimulating sustainable production is fundamental to CABI's work. Our integrated crop management programme is a key part of delivering a crop management system less dependent on harmful pesticides. By working directly with farmers to provide them with simple scientific know-how, they can reduce their reliance on chemicals. And by using modern communication technologies and embracing the mobile revolution, we can rapidly reach more farmers with practical farming know-how. In 2016, CABI worked on a number of projects to help farmers grow more produce and reduce harvest losses. These include embedding principles of Integrated Crop Management in our Plantwise plant clinics and minimising the health impacts of pesticides. Since 2011, the CABI-led  **Africa Soil Health Consortium (ASHC)** has been working with partners to develop materials that promote Integrated Soil Fertility Management. In addition to sharing the information with farmers, every piece of promotional material – over 400 in total – has been placed into a  **searchable library** on the ASHC website.



Helping farmers to grow more and lose less

Since its launch in 2011, the  **Plantwise programme** has provided plant health knowledge to an estimated 9.8 million farmers in 34 countries, helping them to lose less of what they grow. By working with governments and local partners, CABI ensures that responsible and sustainable production methods are embedded into national plant health systems.

In Myanmar, for example, concerns about the serious misuse of fertilisers and pesticides led the Ministry of Agriculture, Livestock and Irrigation to adopt a Strategy for Plant Health in September 2016. The strategy was drafted by CABI and local partners and is based on the Plantwise concept.

Across the world, the Plantwise programme trains plant doctors to follow the principles of Integrated Pest Management (IPM) in their recommendations to farmers. IPM involves the use of cultural, biological and mechanical methods, and emphasises the responsible use of fertilisers and pesticides. Surveys collected at plant clinics show that over half of plant doctor recommendations involve non-chemical control methods.

Leadership of Plantwise in this area is also reflected in the  **Masters in Advanced Studies in Integrated Crop Management (MAS in ICM)**, which CABI jointly coordinates with the University of Neuchâtel in Switzerland. In 2016, 12 agricultural professionals from 8 developing countries across Africa, Asia and Latin America attended the course,


and have gone on to apply their knowledge in their home countries.


"The course focusses on managing crops in a profitable way but with respect for human health, the environment and local conditions. We hope to contribute to knowledge in the areas of food security, food safety, economically viable and ecologically responsible farming."

Ulrich Kuhlmann, Executive Director, Global Operations, CABI

"I am using the knowledge and skills acquired from the course to develop a project proposal on conservation agriculture to help rural farmers in soil nutrient-depleted regions to conserve nature by use of Integrated Crop Management principles. This will improve the livelihoods of smallholder farmers."

Stephen Katabaazi, Student, MAS in ICM, Uganda

The ICT elements embedded into Plantwise – such as the  **Knowledge Bank**, the factsheet and data collection apps, and messaging platforms – fundamentally reinforce the success of the programme. They not only build capacity, disseminate knowledge, streamline workflows and monitor impact, they also extend the reach of advice on responsible production to millions of farmers who cannot attend plant clinics.

As well as reaching out to farmers, Plantwise aims to promote the importance of sustainable production methods in the international development sector. In March 2016, Plantwise was honoured to be chosen as the  **winner of the OECD Development Assistance Committee Prize for Innovation.**

Donors and Partners

DONORS


UK Department for International Development (DFID)
Swiss Agency for Development and Cooperation (SDC)
EC Development and Cooperation – EuropeAid (DEVCO)
Netherlands Directorate-General for International Cooperation (DGIS)
Irish Aid – Department of Foreign Affairs and Trade
The International Fund for Agricultural Development (IFAD)
Australian Centre for International Agricultural Research (ACIAR)
Ministry of Agriculture of the People's Republic of China

PARTNERS

www.plantwise.org/clinicpartners

CABI CENTRES

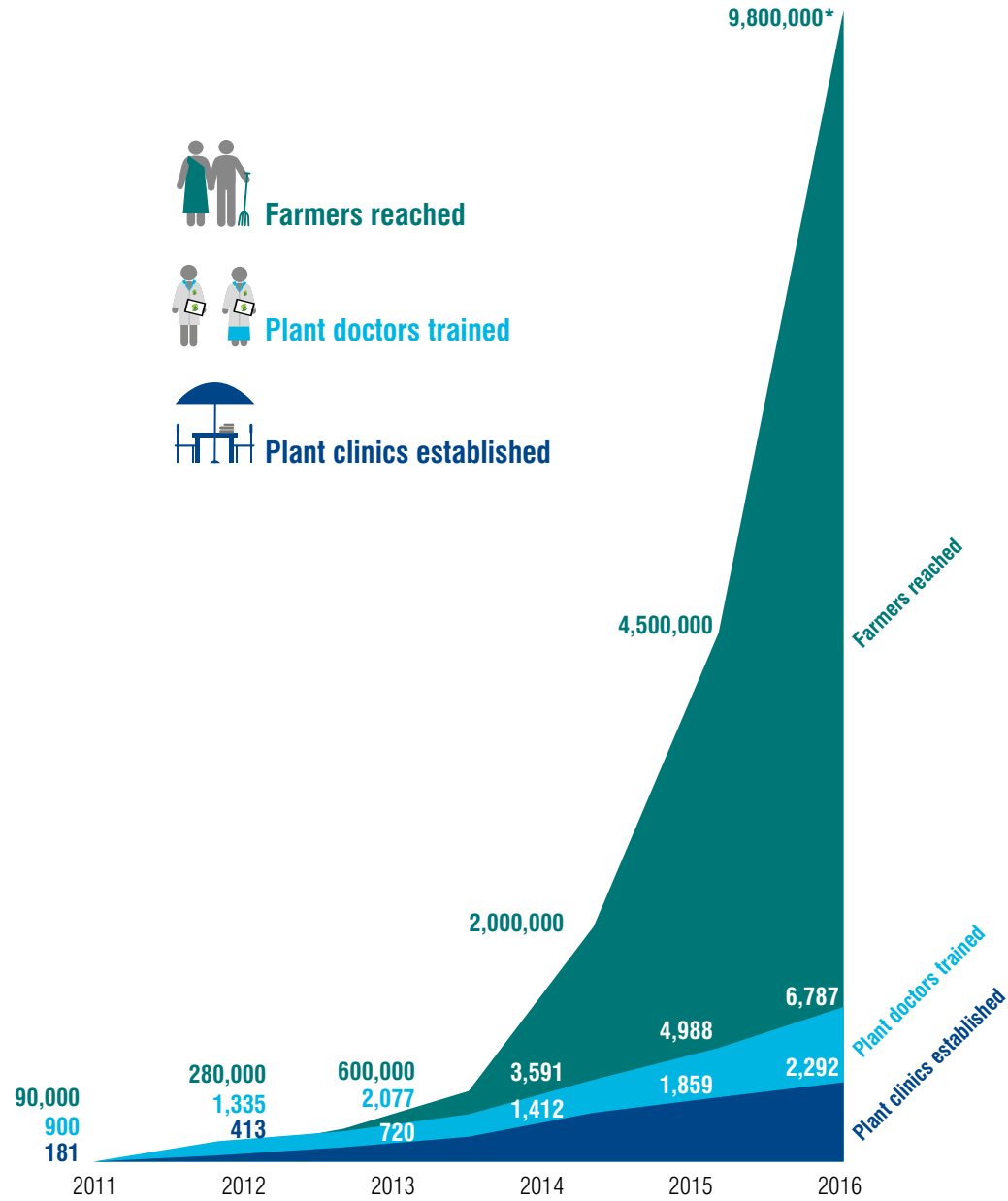
Global

Learn about the Plantwise Knowledge Bank, a global resource to help combat plant health problems at  www.plantwise.org/knowledgebank

See the Plantwise Annual Report 2016 for more information about this programme:

 www.plantwise.org/annualreport2016

GOAL 12: RESPONSIBLE CONSUMPTION AND PRODUCTION



*Determined through estimations of primary reach (farmers reached directly through Plantwise activities) and secondary reach (farmers reached indirectly, e.g. as a result of plant doctors operating outside of Plantwise and farmers receiving advice from peers who visited plant clinics). Diagram not to scale.



Campaigning for the safe use of chemicals

In the town of Kapchorwa, eastern Uganda, Betty Seyekwo is attending a plant health rally about the safe use of pesticides, together with 169 other farmers from the area.

She grows beans and maize on the two acre farm that supports her family of nine, but has recently had problems with diseases destroying her harvest.

"I used to grow an average of 25 kilograms of hybrid maize seeds each season and harvest about 50 bags of maize. Last year, I only harvested 10 bags of maize after my plants stopped growing and dried. And this season, I noticed the leaves of my beans turning yellow and drying especially during the rainy season."

As a result of the decline in yield, she was unable to comfortably feed her family and had to buy extra food. It was also difficult paying school fees for her children.

"I was sad that the chemicals I bought and sprayed on my maize and beans did not help save them. But this is in the past. I now know better. My mistake was buying and applying the wrong chemicals. I learned that we have to buy only government registered chemicals that are packed in properly labelled containers. I now know that some chemicals can only be applied before or after the crop is infected."

At the plant health rally, Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) district extension staff talk to farmers about how to safely use and handle pesticides, and identify and manage the epidemic of Maize Lethal Necrotic Disease, which is spreading across Africa. Use of clean certified seed and crop rotation are recommended.

"Plant health rallies are one of the approaches we are implementing within the Plantwise initiative to complement plant clinics in reaching out to more farmers."

Benius Tukahirwa, Agricultural Inspector, MAAIF

Another approach being used is mass communication. This year, the team has worked with partners including the National Agrodealers Association to develop a suite of simple messages that encourage farmers to safely handle, use and dispose of chemicals. Field testing of the posters and leaflets by farmers helped to ensure they hit the mark and clearly communicate messages that encourage behaviour change.

They are now being printed in national magazines and shared through plant clinics and by extension workers around the country. A follow-on study in 2017 will review how farmer knowledge has changed as a result of this campaign.

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CABI CENTRES

Global



Financial boost comes to pepper farmers in China

Ma Jixiang is a pepper farmer in Zhongtun village. He and his wife have planted peppers for around six years. The crop provides their main income, covering their daughter's university tuition fees.

Noticing that his plants looked 'listless', a very worried Jixiang attended the Yanqing mobile Plantwise plant clinic. The CABI-led  **Plantwise programme**, with its plant clinics run by trained plant doctors, helps smallholders to diagnose and manage crop pests.

Plant doctor Gu Peiyun carefully checked the leaves he brought. They were curled and deformed, with yellow-brown spots on the front and brown scars on the back. However, the absence of a powder or mould layer meant the problem was not caused by fungus, which is what Jixiang had been treating them for.

Based on the symptoms found on the leaves, and the problems typically encountered by pepper farmers in the local area, Doctor Gu suspected the issue was caused by thrips – a common insect pest found in greenhouses.

Visiting Ma Jixiang's greenhouses to investigate further, she found a number of brown thrips crawling on the flowers and peppers. She explained to Jixiang that insects were the 'chief culprit', which is why no matter how much fungicide he used, it had not worked.

Instead, she gave him a comprehensive integrated pest management prescription, including measures such as using the correct irrigation to maintain soil moisture, and chemical and physical controls. She also told Ma Jixiang that releasing predatory mites called *Neoseiulus cucumeris* could control thrips to some level.

Two weeks later, the mobile clinic visited Zhongtun again. Ma Jixiang thanked Doctor Gu – he had taken her advice and in just a few days his crop had begun to recover.

He expects his total yield for the year will be around 5,000kg higher than the previous year, increasing his family income by at least 20,000 yuan (US\$2,900).

Donors and Partners

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Swiss Agency for Development and Cooperation (SDC)
EC Development and Cooperation – EuropeAid (DEVCO)
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A person wearing a striped shirt and shorts is using a machete to clear brush in a field. The person is bent over, swinging the machete. The background is a blurred field of green and yellow vegetation under a clear sky.

Invasive species cost an estimated
US\$1.4 TRILLION
TO THE GLOBAL ECONOMY
every year

CONTENTS

15 LIFE ON LAND





PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

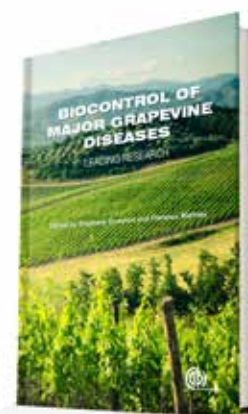
Invasive species cost the global economy an estimated US\$1.4 trillion every year. These animals, diseases, insects and plants devastate crops, livestock and smallholder livelihoods by upsetting the delicate balance of native ecosystems including farmland. They are the second greatest threat to biodiversity after habitat loss.

Tackling the threat of invasive species

CABI has been tackling  **invasive species** for over 100 years, developing workable approaches to mitigate the biggest threats. With over 800 years of combined experience in our staff, CABI scientists are world leaders in the research of natural ways to control invasive species. In 2016, we received a mandate from our Member Countries to coordinate a comprehensive approach to help rural communities in the fight against invasive species. This approach includes wide-scale campaigns for the prevention, early detection/response and control of invasive species. We investigate some of the most problematic invasive species around the world and provide solutions. We advise governments on invasive species policy, and produce books and tools for environmental managers, researchers and farmers on this global issue.

In 2016, the CABI-led  **Pest Risk Information Service (PRISE)** project was awarded over £6 million in funding by the UK Space Agency. The project will use Earth Observation, on-the-ground plant health data and state-of-the-art modelling techniques to predict the risk of pest outbreaks and deliver early warnings to smallholder farmers, increasing their resilience to pest outbreaks.


We continued our invasive species activities to restore biodiversity in Kenya by  **managing an invasive cactus** and, in Pakistan, supported low-cost community rearing of a local wasp to  **save the papaya industry**. Read more over the page.




CABI's invasive species initiative – tackling the threat to livelihoods

Around the world, millions of people in rural communities are suffering. Their cattle are dying and many cannot produce enough food to escape the grinding poverty that blights their lives. Destructive invasive species are a big part of the problem and one which smallholder farmers and their families face on a daily basis.

While the challenge of losing biodiversity to invasive species is known, the destruction they cause to agricultural land and farming is less understood. CABI scientists estimate that invasive species are responsible for annual economic losses of over US\$1 billion across six East African countries alone, something that developing nations cannot afford.

To tackle this situation head on, CABI is drawing on 100 years of expertise in invasive species research and action. In 2016, we launched a  **major new initiative to halt and reverse the threat of invasive species** to the rural poor using practical solutions that deliver lasting results.

The aim will be to support 50 million vulnerable African and Asian farming families whose livelihoods are threatened by the worst invasive species. The work will link with, and build upon, our highly successful CABI-led  **Plantwise programme**, which has already reached an estimated 9.8 million farmers in 34 countries.

Over the coming years, CABI will work with its many partners to tackle some of the worst invaders in Africa and Asia – diseases, insects and weeds that devastate crops and pastureland, as well as deplete the many natural resources on which rural communities rely.

The work is critical. Left unmanaged, these species threaten investments in development, undermine climate change adaptation measures and can even act as food and shelter for malaria-carrying mosquitos.

CABI's invasive species initiative has been designed to manage biological invasions using the internationally recognised three-stage approach:

- prevention;
- early detection and rapid response;
- control and restoration.

The programme will establish regional, national and local partnerships across different sectors, and involve stakeholders in running and evaluating sustainable programmes for invasive species prevention, early detection and control.

Together with global donors and partners, CABI is committed to finding solutions to reduce the threat of invasive species and help some of the poorest, most vulnerable people in the world build brighter, more sustainable futures.

For more information about the threat of invasive species on livelihoods, see

 www.invasive-species.org





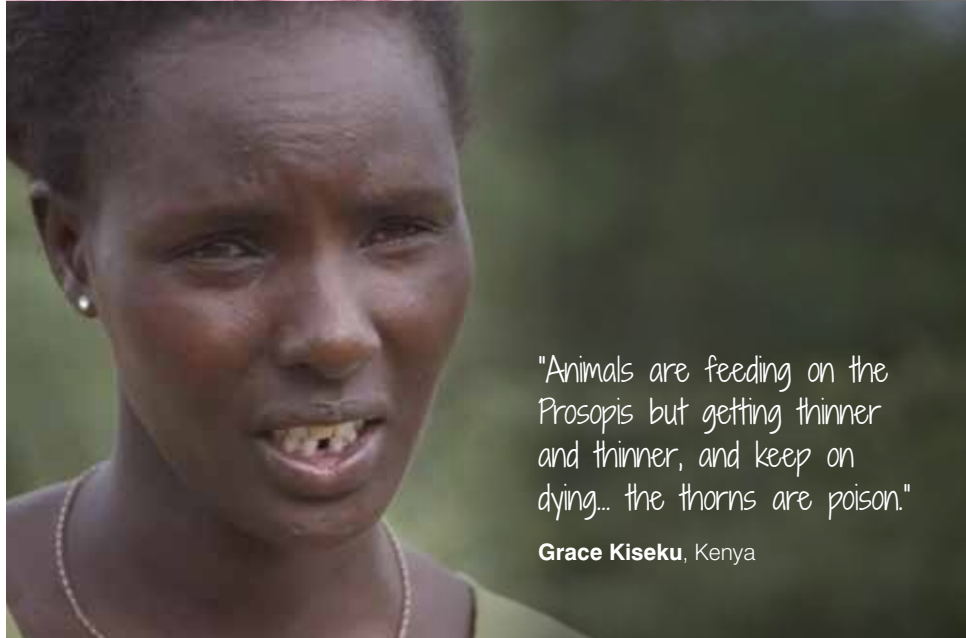
"After I plant my rice the Golden Apple Snail eats young seedlings causing major damage to my crop."

Rahmin Bin Abdul Rahim, Malaysia



"It's like HIV for the environment,"

is how **Zeneba Abdul** described Prosopis, which is leading to reduced herd size, deteriorating arable land and social tensions in her community in Eastern Ethiopia.



"Animals are feeding on the Prosopis but getting thinner and thinner, and keep on dying... the thorns are poison."


Grace Kiseku, Kenya




"When I pulled the weed [Parthenium] out I started getting an allergic reaction on my hands resulting in painful blisters which eventually burst."

Aziz Hassim, Malaysia

Schoolchildren help stop a cactus invasion and bring back native biodiversity to Laikipia, Kenya

In Laikipia, a region north of Nairobi, Kenya, an  **invasive cactus – *Opuntia stricta*** – has taken over thousands of hectares of grassland.

"When children play in the field, they're injured by this weed. Often they're taken to the hospital. We're afraid we might lack a place to live, because this plant is spreading very fast."

 **George Olisintare**, father of nine, Laikipia, Kenya


The cactus invasion resulted in severe economic, health and social challenges as communities in this region depend heavily on livestock for their food and income. Pastoralists in these communities are forced to move to other places in search of uninvaded pastures for their animals, and this has led to conflict with local land owners.

Elephants are also attracted to the cactus fruits and have even blocked paths and roads, preventing the children from getting to school.

To tackle the threat of the cactus, CABI collaborated with national and local partners, including OI Jogi Conservancy, to introduce the cochineal insect after it was re-confirmed that this sap-sucking bug only feeds on *Opuntia stricta* and does not affect any indigenous plant species or crops in Kenya.

Recently, schoolchildren have become involved in spreading cochineal to help control the cactus. Through the Northern Kenya Conservation Club, these young champions, who are mostly from pastoral communities, learn about the impact of *Opuntia* on livelihoods, food security and the environment upon which they and their livestock depend.

"Before I joined the Northern Kenya Conservation Club, my parents encouraged me, they said it is a good club, because it will enable us to protect our animals, because this plant (*Opuntia*) can injure our animals when they are feeding or going to drink water. We also spread the bug (Cochineal) in the fields invaded by *Opuntia*. The bug eventually dries the plant. Another method we use is to cut the plant, dry it on the roof, and use it as fire wood."

 **Anne Wanjiru**, student, Naibor primary schools, member of the Northern Kenya Conservation Club

Donors and Partners

DONORS
CABI Development Fund (CDF)
OI Jogi

PARTNERS
Agricultural Research Centre-Plant Protection Research (ARC-PPRI)
Kenya Plant Health Inspectorate Service (KEPHIS)
Kenya Agricultural and Livestock Research Organization (KALRO)
The National Environment Management Authority (NEMA)

CABI CENTRES
CABI in Kenya



Mpala Research Centre & Wildlife Foundation

Tiny wasp saves papaya harvests in Pakistan

Maula Baksh is a smallholder farmer in Sindh, Pakistan. He used to grow papaya on a few acres, which made him a good profit, but several years ago, his crops were destroyed by a pest known as the papaya mealybug. From 2008 to 2014, mealybug reduced papaya crops by two-thirds.

Maula spent thousands of rupees on chemical fertilisers, pesticides and sprays to try to stop the invasion. But despite his efforts, his fruits were decimated, leaving him with little to sell. When CABI visited his region with the Sindh Agriculture Extension Department, Maula was at a loss as to how to tackle the mealybug and other pest problems.

CABI implemented the USAID-USDA funded  **Phytosanitary Risk Management Programme**. Developing a pest management system, CABI scientists in Pakistan have helped the country to control pre- and post-harvest pests of concern.

In Sindh province, CABI experts worked with growers to demonstrate a natural control approach – rearing tiny wasps that attack and kill the papaya mealybug at the larval stage. The aim: to provide a cost-effective, pesticide-free way to tackle the bug.

At first Maula and farmers like him were hesitant to stop using chemicals in favour of the wasp pupae. But after seeing results, Maula was inspired and offered his land to test the new natural control technique.

The CABI team helped him build a reservoir in his field in which he reared the tiny wasps. This Natural Enemy's Field Reservoir helped to successfully control the mealybugs and allowed Maula to stop spending so much money on chemical treatments.

"Through this technique we got complete control over the mealybug and now, in the end, produce good crops."

In two years, the project reared and dispersed more than 12 million wasp pupae and adults. Over 1,000 farmers attended pest management training programmes. Many believe papaya farming would have been completely wiped out in Pakistan if not for the programme.

Maula is so pleased with the results he shares his story with other growers. In the coming years, he plans to harvest papaya on 25 acres. His farm is thriving.

"Thank you CABI for providing generous support and helping me in the installation of a Natural Enemy's Field Reservoir."

Donors and Partners

DONORS
United States Department of Agriculture (USDA) & United States Agency for International Development (USAID)

PARTNERS
Pakistan Agricultural Research Council (PARC)

CABI CENTRES
CABI in Pakistan
Federal Department of Plant Protection (DPP)
Universities of Agriculture
State Departments of Agriculture (Punjab, Sindh, Balochistan, KPK, GB)
All Pakistan Fruit and Vegetable exporters, importers, and Merchants Association (PFVA)



THROUGH PARTNERSHIP

we can achieve the
Sustainable Development Goals



17 PARTNERSHIPS FOR THE GOALS



STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALISE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

A perfect storm is brewing. The world's population is growing. Food production may not be able to keep up with demand. Effects of climate change are increasingly tangible. Agricultural and natural resources are being stretched. No organisation on its own can solve the complex and interconnected global challenges that humanity faces today.

When the scale of the challenge is this big, a collective international response is essential. Organisations must develop and enhance partnerships to find the best and most sustainable solutions.

Addressing global challenges through partnerships

CABI believes when individuals and organisations, countries and regions work together, the best solutions to difficult problems will be found. This is why we instil an ethos of partnership in everything we do.


In 2016, CABI saw relationships with its partners expand and flourish. Collaboration with  **Global Open Data on Agriculture and Nutrition (GODAN)**, the secretariat that CABI hosts, went from strength to strength. The GODAN Summit was supported by CABI and served to emphasise the importance of openly sharing agricultural information to eradicate world hunger.


In 2016, CABI played a key role in the Association of International Research and Development Centres for Agriculture (AIRCA), hosting the  **GAPAD meeting on agricultural diversification in Kenya**, and continued to support important initiatives like the Tropical Agricultural Platform (TAP). CABI published the TAP Common Framework on Capacity Development for Agricultural Innovation Systems (CDAIS).

Throughout 2016, CABI worked in all major regions of the world with hundreds of donor and partner organisations to solve problems in agriculture and the environment. Read about two of our partnership projects over the page.



World's first open data summit on agriculture and nutrition calls for global food security

Nearly 800 million people struggle with debilitating hunger and malnutrition in every corner of the globe. This means one in every nine people, the majority of whom are women and children. The  **Global Open Data for Agriculture and Nutrition** (GODAN) initiative is convinced a solution to Zero Hunger lies within existing, but often unavailable, agriculture and nutrition data.

CABI hosts the Secretariat for GODAN and supported one of the initiative's milestones in 2016 – the  **GODAN Summit** in New York.

"2016 was a most exciting year for GODAN. Farmer associations spoke with satellite experts, research organisations, universities, governments and the private sector alike, united by the common desire to work together to create something better for everyone: a world better fed, a world better off, a better future for all."

Andre Laperriere, Executive Director, GODAN

This was the largest ever event for open data in agriculture and nutrition, bringing together world leaders, researchers, farmers, students and business. The aim: to show the importance and use of agriculture and nutrition data, gain high-level support for sharing it, and put the debate firmly in the public arena.

The practical applications of open data are making a difference to people's lives. Eunice Boule, a successful smallholder from Kenya, talks about the advantages of using the open source Farmers App by Haller – a GODAN partner – to access agricultural information on her mobile phone.

"I now have a smartphone. I use it to find out how to grow certain vegetables, to get new ideas about farming, and for other things like chatting and making sales. So now, with this harvest, I can pay for my children's school fees."




Eunice Boule, from OPEN FIELDS

High-level speakers included US Secretary of Agriculture Tom Vilsack, who announced support for semantic architectures in the Global Agricultural Concept Scheme, and the opening of the branded food products database. CABI's CEO, Dr Trevor Nicholls, one of the 34 high-level speakers, called for action, saying:

"Innovation is essential. We must increase the output of open data, while at the same time ensuring that we strengthen the capacity of developing countries to benefit from it."

For more information about GODAN, see  www.godan.info

Videos presented at the Summit show how open data can improve lives around the world through

-  **OPEN FARMS**
-  **OPEN FIELDS**
-  **OPEN WATER**



Australia-Africa Plant Biosecurity Partnership creates a strong future for regional trade

Many countries in Africa rely on agriculture for economic development and food security. When plant biosecurity fails, and pests enter a country, the results can be devastating. Managing the spread of significant plant pests and diseases is critical for food security and farmers' incomes.

To tackle this problem, the  **Australia-Africa Plant Biosecurity Partnership (AAPBP)**, of which CABI is a member, was initiated in 2014. Over the past two years, it has seen the intensive training of 45 African plant biosecurity fellows from ten countries in Africa: Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Uganda, Tanzania, Zambia and Zimbabwe.

The aim: to empower plant biosecurity professionals, replicating the complex negotiating environment between nations to build lasting working relationships, share experience and knowledge, and resolve biosecurity problems. Bill Magee, AAPBP Project Leader in Australia, comments on the results so far:

"Personally, it has been a highlight to watch the fellows apply their knowledge to make changes in the way they do their day-to-day work. This is going to have a substantial benefit to their countries and to the wider region for market access and trade negotiations."

Bill draws attention to the valuable networks and relationships the fellows have built; the many examples of engagement that will "no doubt" bring rewarding outcomes for their countries' economy and trade in future.

The Partnership sees huge potential for this initiative to continue and for the possibility of the model to be used in other countries in order to build better plant biosecurity. The fellows are already seeing a difference.

"Through the AAPBP I have learned new techniques for managing fruit fly, a major problem in Tanzania. Introducing some of these integrated pest management techniques, such as harvesting mangoes while still green and improving farm hygiene, has allowed Tanzania to open negotiations with new markets in Saudi Arabia and Oman."

Katemani Mdili, Senior Agriculture Officer, Ministry of Agriculture, Livestock and Fisheries, Tanzania

Donors and Partners

DONORS

Australian International Food Security Research (AIFSRC) within ACIAR
CABI Development Fund (CDF)

PARTNERS

Crawford Fund
Plant Biosecurity Cooperative Research Centre
Common Market for Eastern and Southern Africa (COMESA)
Australian Centre for International Agricultural Research (ACIAR)

CABI CENTRES

CABI in Africa



THANK YOU

CABI's ability to improve lives worldwide is made possible by the generous contributions of the many members, donors and partners we work with.

For this, we want to say a big thank you.

Your ongoing support has enabled us to help...





...her family



...his farm



...her yield



...his crops



...his orchard

BILL & MELINDA GATES foundation



...her business



Australian Government
Australian Centre for International Agricultural Research



...her market garden



...her career



...his cattle



...their education



...their training

Innovate UK



...her knowledge

Ministry of Agriculture
People's Republic of China



...their village



...his soil health



...their future

Governance

Review Conference

CABI's high-level governing body is the Review Conference of Member Countries, which reviews CABI's work programmes and determines its broad policies and strategies.

Executive Council

Representatives from each Member Country meet to monitor CABI's affairs and implement Review Conference resolutions. The council approves the annual budget, the admission of new members, appointment of auditors and key policy decisions.

Liaison Officers

Each Member Country has at least one Liaison Officer. Their role is to provide a crucial link between their country and CABI.

The CABI Board

This governing board oversees CABI's programmes and guides management on operational and strategic issues.



Mr Philip Walters (Chair)



Dr Trevor Nicholls (CEO)



Dr Lutz-Peter Berg



Mr Rob Sloley



Mr Roland Dietz



Prof Dame Anne Glover



Mr Akhter Mateen



Professor Ruth Oniang'o



Mr Paulus Verschuren

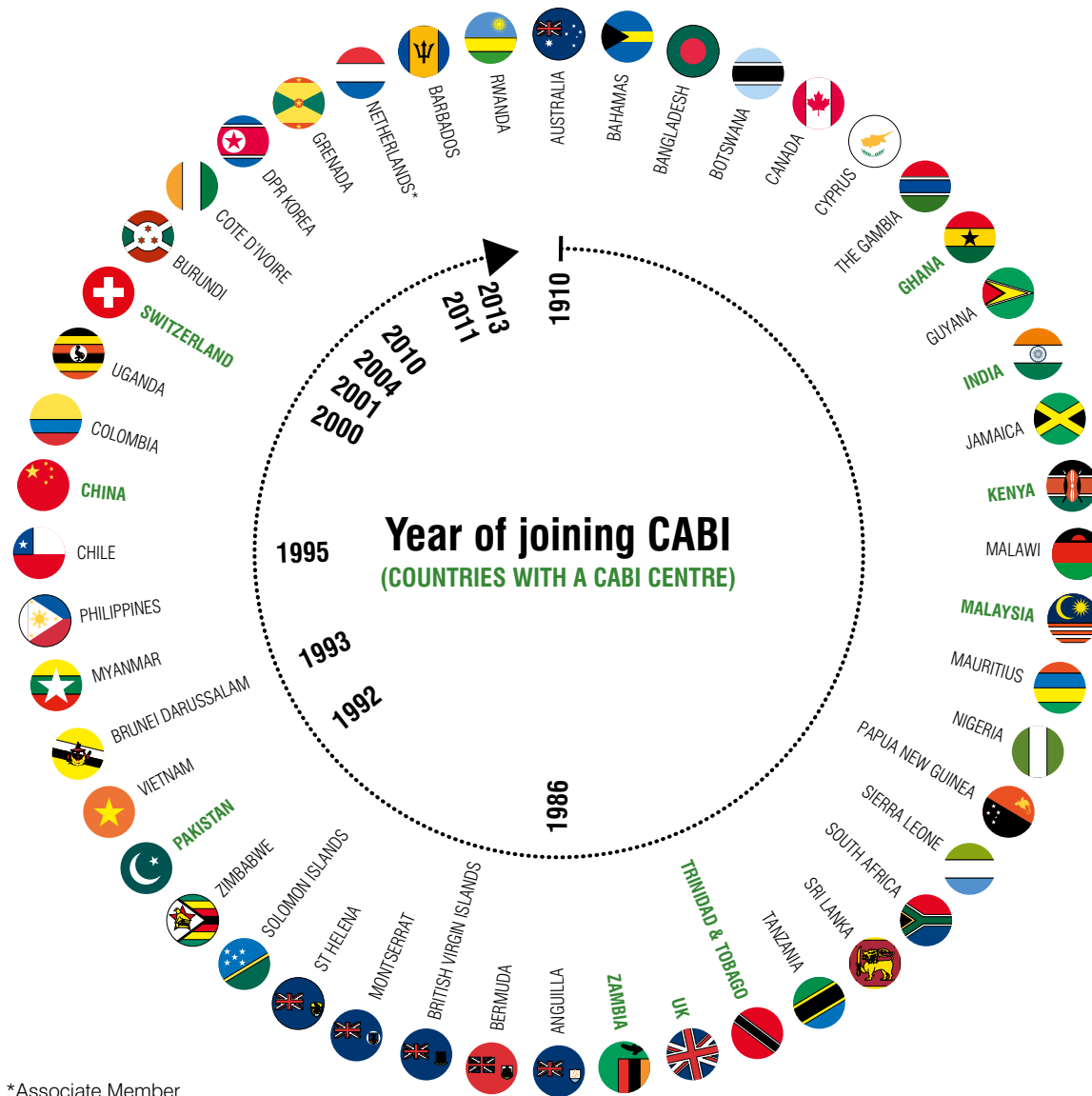


Dr Prem Warrior



Madam Xiangjun Yao

CABI's global role



*Associate Member

CABI is an inter-governmental, not-for-profit organisation governed through a United Nations treaty-level agreement. We work with countries that represent over half of the world's population, or over four billion people. Many people in developing countries are smallholder farmers.

Much of our work focuses on them. Each of our **48 Member Countries** has an equal role in the organization's governance, policies and strategic direction.

Our membership structure means that CABI's work delivers development and research projects and scientific publishing products that strengthen and complement existing national capabilities, helping to improve people's lives worldwide.

Since its beginnings as an entomological committee in 1910, our organization has grown to the Commonwealth Agricultural Bureaux in 1947, to CAB International in 1987, to its present structure today. The diagram shows when members have joined throughout our long journey.

FINANCIALS



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Statement of comprehensive income

for the year ended 31 December 2016

	2016 £'000	2015 £'000
continuing operations		
income		
sales and project income	34,850	32,766
member contributions	1,303	1,192
CABITAX recovery	1,310	1,318
miscellaneous income	74	78
	<u>37,537</u>	<u>35,354</u>
expenditure		
staff costs	(9,709)	(9,147)
direct project costs	(19,548)	(17,987)
production	(3,176)	(3,158)
facilities and maintenance	(1,645)	(1,368)
sales and distribution	(531)	(553)
travel	(768)	(685)
depreciation and leasehold amortization	(825)	(722)
consultants, freelancers	(429)	(445)
restructuring costs	(248)	(209)
provision for arrears of member country contributions	(99)	(122)
associated company profit	69	102
course of construction impairment	(441)	–
other costs	411	(594)
	<u>(36,939)</u>	<u>(34,888)</u>
operating surplus / (deficit) before interest	598	466
interest receivable	54	68
	54	68
operating surplus / (deficit) for the year	652	534
other comprehensive income / (deficit) items that may be subsequently reclassified to operating surplus / (deficit)		
cash flow hedges	(157)	6
property revaluation gains	–	2,334
movement between funds	(100)	–
other losses on defined benefit pension schemes	(36,045)	(4,258)
	<u>(36,302)</u>	<u>(1,918)</u>
total comprehensive deficit for the year	(35,650)	(1,384)

Financials

2016 was another solid year for CABI financially, with continued growth in income, the retention of a healthy cash position, despite a £3.2m reduction in donor payments in advance due to the timing of contract renewals and alterations in timing of donor payments, and an operating surplus broadly in line with 2015.

Total income grew by 6% (with increases coming from both the Knowledge Business and International Development (including Plantwise) activities, which grew at 7% and 6%, respectively. Growth in the Knowledge Business arose from project-related revenue, principally the income arising from the hosting of the GODAN (Global Open Data for Agriculture and Nutrition) Secretariat at CABI, funded by USDA, as well as the new UK Space Agency funded Pest Risk Information Service (PRiSe) project. However, publishing product sales declined in the year as a result of timing in database renewals and some losses and softness in sales of printed books and ebooks. For International Development, the growth was driven by the Plantwise programme and other significant projects such as the multi-year soil health fertility projects in Africa, funded by AGRA and the Bill & Melinda Gates Foundation, invasive species and other projects funded by the Swiss Agency for Development and Co-operation, and large mobile and nutrition initiatives funded by DFID.

Operating surplus reduced by £32k in 2016, primarily due to the impact of additional pension contributions net of the increased surplus generated from incremental revenue and gains on movements in foreign exchange.

The pension liability, now included at its full value on the balance sheet, increased again in 2016. This is a long-term liability, subject to actuarial estimation, and actions have been taken to mitigate the impact of the deficit. The UK Pension Scheme liability continues to present a significant financial challenge for the organisation, but one we expect to be able to manage.

Overall, the operating performance of CABI has shown a significant level of consistency and growth and we have been able to generate an operating surplus now for seven successive years.

Robert Sioley, CFO

Statement of financial position

for the year ended 31 December 2016

	2016 £'000	2015 £'000
assets		
non-current assets		
land and buildings	12,144	12,378
plant and equipment	1,789	1,745
intangibles	577	402
investments accounted for using the equity method	537	468
	<u>15,047</u>	<u>14,993</u>
current assets		
inventories	1,755	1,765
trade and other receivables, net of provisions:		
– sales receivables	2,736	2,084
– sums owing by project sponsors	2,016	1,425
– from member countries	–	184
other financial assets:		
– cash and cash equivalents	7,104	10,840
other receivables	1,086	1,714
	<u>14,697</u>	<u>18,012</u>
total assets	29,744	33,005
equity and liabilities		
equity		
revaluation reserve	(4,255)	(4,255)
cash flow hedges	256	99
designated fund	(100)	(150)
accumulated deficit	87,079	51,586
total deficit	<u>82,980</u>	<u>47,280</u>
liabilities		
non-current liabilities		
post-employment benefits	(98,354)	(62,309)
	<u>(98,354)</u>	<u>(62,309)</u>
current liabilities		
sales income received in advance	(3,790)	(3,584)
member contributions in advance	(7)	(5)
sums held on behalf of project sponsors	(7,401)	(10,583)
trade and other payables:		
– trade payables	(1,007)	(1,176)
– other payables	(1,909)	(2,529)
other financial liabilities		
– derivative financial liability	(256)	(99)
	<u>(14,370)</u>	<u>(17,976)</u>
total liabilities	<u>(80,285)</u>	<u>(80,285)</u>
total equity and liabilities	(29,744)	(33,005)

Statement of cash flows

for the year ended 31 December 2016

	2016 £'000	2015 £'000
cash flows from operating activities		
cash (used in) / generated from continuing operations	(2,980)	199
net cash (used in) / generated from operating activities	<u>(2,980)</u>	<u>199</u>
cash flows from investing activities:		
payments to acquire tangible fixed assets	(595)	(754)
payments to acquire intangible assets	(215)	(309)
interest received	54	68
net cash used in investing activities	<u>(756)</u>	<u>(995)</u>
net decrease in cash and cash equivalents	(3,736)	(796)

NOTES TO THE CASH FLOW STATEMENT

(i) reconciliation of operating surplus to net cash inflow from operating activities

operating surplus before interest	448	466
depreciation charges	825	722
share of associated company (profits)	(69)	(102)
loss on disposal of property, plant, equipment	–	14
decrease/(increase) in inventories	10	(227)
increase in trade and other receivables	(1,059)	(485)
(decrease)/increase in trade and other payables	(789)	181
decrease in income in advance	(2,974)	(413)
decrease in other receivables	628	43
cash (used in) / generated from continuing operations	<u>(2,980)</u>	<u>199</u>

(ii) movement in net cash during the year

net cash at 1 January	10,840	11,636
net cash at 31 December	7,104	10,840
movement in net cash during the year	(3,736)	(796)




1



2

CABI staff

We are proud that in 2016 over 500 staff worked in over 40 countries, providing huge amounts of expertise in many fields.

1. The 2016 annual CABI Africa-wide staff meeting.
2. CABI is committed to increasing the use of technology throughout its products and projects. Our new IT team provides technology support out of India.
3. In 2016,  **CABI opened a new Southern Africa office in Lusaka, Zambia**, putting staff on the ground to strengthen our work in international development.
4. A staff Cake Bake Day in Egham, UK to raise funds for charity.



3



4

Staff publications in 2016

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