



**CABI**

in review



**THE GLOBAL GOALS**  
For Sustainable Development



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**Philip Walters**, MBE, Chair

# Foreword from the Chair

I was honoured to take over the role of Chair of the CABI Board in June 2015 when John Ripley stepped down after six years of outstanding service to the organization, during which time CABI achieved strong growth and financial sustainability. I am therefore delighted that 2015 has been another year of positive financial and strategic progress for CABI.

In 2015, our revenue grew by 10%. This came mainly from continued growth of International Development programmes like Plantwise and the Africa Soil Health Consortium, but our Publishing business has faced more challenging conditions as previously high-growth markets in Latin America, the Middle East and Asia suffered budget cuts as a result of lower oil prices. During the year, the Board has been working closely with the Executive Management Team to ensure that the organization invests its limited resources wisely in new knowledge products and services as well as using modern technologies to deliver our data and information effectively to target audiences, be they researchers in universities or farmers in developing countries.

During the year, we also said farewell to Andrew Bennett, who had given the organization much wise counsel during his six years on the Board as well as bringing tremendous experience and a wide network of contacts throughout the world of international development. Andrew joined the Board in 2009 as part of an independent Science Review team and it was very fitting that he represented the Board in an updated review that took place in 2015. The review was very positive about the progress made over the past six years but also extremely insightful in pointing to areas of natural and social science for future development.

The planned rotation of the Non-Executive Directors has allowed us to make progress in our objective of bringing greater diversity to the Board. During 2015, we added Mr Paulus Verschuren, Mr Akhter Mateen and Mme Xiangjun Yao. In 2016, we will be welcoming Professor Ruth Oniang'o, Dr Prem Warrior and Professor Dame Anne Glover. Professor Emmanuel Owusu-Bennoah and Dr Vibha Dhawan will retire at the end of their terms in July.

Throughout the year, the Board has also worked closely with the Executive Management Team to steer CABI through some challenges in relation to the regulatory climate in the UK, where CABI is headquartered. For some years, we have been seeking to renew our HQ building in Wallingford, as well as to release some land at our Egham site for sale so as to raise further funds. In both cases, local planning procedures are proving tortuous to navigate and thereby preventing us moving as quickly as we would like into modern energy-efficient premises. In addition, and in common with many other similar schemes in the UK, our Defined Benefit Pension Scheme for UK staff is showing a significant deficit due to the low yields on government bonds which exist at the present time. We have worked closely with the Trustee of the UK Scheme to arrive at a long-term recovery plan to make good this deficit, but this will continue to place a significant drain on CABI's finances for a number of years.

At the end of 2015, I had the pleasure and privilege to visit our Plantwise partners in Vietnam and to see plant clinics in operation. This was part of a very successful initiative to give the Board greater exposure to CABI's work, and some of my Board colleagues have also visited India and Africa. We all found the experience very enriching and enlightening – meeting staff and partners as well as seeing at first-hand how CABI is making a real difference to help farmers protect their crops and their livelihoods. I was also able to attend the Asia Pacific regional consultation with member countries in Malaysia. This gave me the opportunity to see how much effort CABI puts in to engage in an open dialogue with partners and member countries so that they have a genuine opportunity to drive and influence the organization's strategy. These experiences have left me proud to be a part of CABI and certain that the organization will continue to make a difference to lives worldwide by contributing to the delivery of the Sustainable Development Goals in agriculture and the environment.

# Foreword from the CEO

I am pleased to report another year of strong project delivery and strategic progress for CABI. During the year we have significantly strengthened our capabilities to measure this progress not just by the financial number but in more human terms through its outcomes and impacts on the livelihoods of the men and women farmers targeted by our programmes.

In 2015, the world community adopted the Sustainable Development Goals (SDGs). The goals have a direct relevance to CABI's work. Also in 2015, the UNFCCC's COP15 summit and the World Economic Forum identified global challenges that align with CABI's work. Future development cooperation will be increasingly focused on these major global challenges and goals. CABI is committed to playing its part in contributing to their delivery and, in consultation with our member countries, we have made a concerted move towards alignment with these goals.

In 2015, through projects that focus on market access and trade, and by helping smallholder farmers sell more of what they sow, we continue working towards making **no poverty** a reality by 2030. In particular, we are helping them adopt new approaches to make their farms more resilient to climate change. Our work guaranteeing credit to coffee farmers in Ethiopia and Rwanda and our research into tackling devastating crop pests like *Tuta absoluta* are helping rural communities safeguard their incomes and futures.

By bringing science from the lab to the field, which has been a core focus of many of our projects, we are not only helping people to increase their incomes but also

helping achieve **zero hunger**. The CABI-led Plantwise food security programme had reached a total of 4.5 million farmers by the end of 2015, helping them to grow more nutritious food to feed their families and communities, and to sell for income.

As a scientific publisher, we are committed to creating knowledge products that support **quality education** and lifelong learning for students, researchers, extensionists and farmers. In 2015, with a challenging climate in our Publishing business, CABI has continued to invest in new knowledge products and services. We are increasingly using mobile phones and tablets to deliver knowledge to the people who need it, in a format that is accessible to them.

As the global population increases, and demands on resources grow, **responsible consumption and production** will be essential. In 2015, CABI projects helped find ways to grow more with fewer agricultural inputs and reduce usage of harmful agro-chemicals, thereby lowering the output of greenhouse gases for every tonne of produce. For example, our projects looked at how we can help smallholder farmers optimize their fertilizer use to grow more food from the land available, and find eco-friendly alternatives to pesticide use on commodity crops like tea.

By combating threats to agriculture and the environment, in 2015 we helped maintain the rich biodiversity of **life on land**. Invasive species have a major impact on arable and pasture land, as well as reducing biodiversity. Our projects helped address the effects of some of the worst invasive species in iconic

# 4.5m farmers

reached by Plantwise by the end of 2015

# 52 countries

where we worked in 2015

# 136

peer reviewed staff publications in 2015

# 89%

of staff would recommend CABI as an employer

# 52%

revenue growth over 5 years

and economically important places. We tackled some of the worst invasive weeds in Africa and Asia to help farmers protect their crops and their livelihoods.

Throughout 2015, **partnerships** were at the heart of our work. Our PPP on plant health systems in Ghana and our central role in the Australia-Africa Plant Biosecurity Partnership are helping countries in Africa gain access to profitable markets in the rest of the world. We host and support the secretariat of the Global Open Data for Agriculture and Nutrition (GODAN) initiative, which has already been very successful, growing rapidly in 2015.

Finally, I am pleased to report another year of good financial performance for CABI. In 2015, our revenue grew by 10%. This came from continued investment from our key donors into International Development programmes such as Plantwise and the Africa Soil Health Consortium, as well as projects focusing on invasive species, mobile technology and nutrition. In 2015, CABI's operating surplus reached £684k, exceeding budgeted expectations. We will continue to invest this surplus into key objectives that tackle global challenges in agriculture and the environment.

At the end of 2015 and beginning of 2016, CABI held three regional consultations in Africa, Asia Pacific and the Americas. These triennial events are milestones in the CABI calendar, giving member countries an opportunity to drive and influence the organization's strategy and us the chance to engage directly with our members. In 2016, by listening to our members, looking at the SDGs and reviewing our core capabilities, CABI will be developing a strategy for the following three years, continuing to make a significant contribution to solving global problems in agriculture and the environment.



Trevor Nicholls, CEO

# 2015 in review

CABI is selected to host and support the **Global Open Data for Agriculture and Nutrition initiative**



**CAB Direct** reaches an 11 million record milestone



CABI launches its first **agricultural master's degree in Integrated Crop Management** in Switzerland



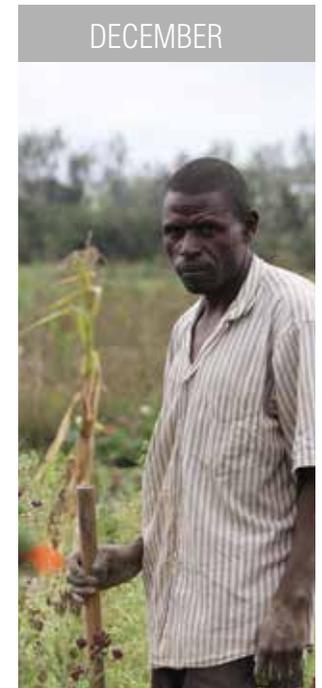
Swiss Agency for Development and Cooperation invites the CABI-led Plantwise programme to join the Swiss Pavilion at the **Milan World Expo** on 'Feeding the World'



Cooperation leads to first-ever mass production of **beneficial nematodes** (microscopic worms) to aid healthy vegetable production in Rwanda



CABI and the Bill & Melinda Gates Foundation explore a possible link between **invasive plants in Africa and the incidence of malaria**



## CABI KEY PERFORMANCE INDICATORS 2015

Number of information products, such as abstracting databases, produced in 2015



Number of developing countries where CABI is carrying out activities designed to improve food security and livelihoods



Number of countries where CABI has activities designed to improve environmental protection





## CABI's mission and the Sustainable Development Goals

This is an important time. Problems that we thought of as many years away, like climate change, have arrived, while solutions to issues like hunger and poverty are now within our reach. How we act today will make a big difference to how we live tomorrow.

CABI is committed to making a difference, playing its part in creating a brighter, more equitable and sustainable future. CABI's mission is to improve people's lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment.

By sharing knowledge and science, CABI tackles global issues like food security and environmental protection. We do this by helping farmers grow more and lose less of their produce, combating threats to agriculture and the environment from pests and diseases, protecting natural habitats from invasive species, and improving access to scientific information.

CABI has more than 100 years' experience of promoting best practice in agricultural development. We have 48 member countries and, in 2015, worked in 52 countries. Major CABI-led programmes like Plantwise and the Africa Soil Health Consortium are already helping millions of farmers improve the way they grow crops.

We understand that global problems are too complex and interconnected to be dealt with by any one organization. This is why partnerships are at the heart of everything we do. Answers are found when individuals and organizations, countries and regions, work together to solve problems and build sustainable livelihoods.

We are the first generation that can end poverty, the last that can avoid the worst effects of climate change.

**Ban Ki-moon**, Secretary General, United Nations

We are committed to being a partner in helping the world reach the Sustainable Development Goals (SDGs). This year, our annual review focuses on these goals and areas where we are helping to make a real difference to people's lives.

**CABI's mission is to improve people's lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment**



I have suffered [crop] losses amounting to 90%. I have no other source of income apart from tomato farming. I was relying on this crop to feed my family. I have nothing to do now other than try to think of what to do next.

**Elias Kamuga**, Farmer, Kenya

# 1 NO POVERTY



END POVERTY IN ALL ITS FORMS  
EVERYWHERE

**One in five people in developing regions still lives on less than \$1.25 a day. Many are small-scale farmers. Barriers like lack of access to plant health knowledge stop them growing produce to sell to profitable international markets.**

**Elias from Kenya is such a farmer. His tomato crops – his livelihood – were decimated by an insect called *Tuta absoluta*. He could not stop the destruction this pest caused and had no idea how to financially support his family.**

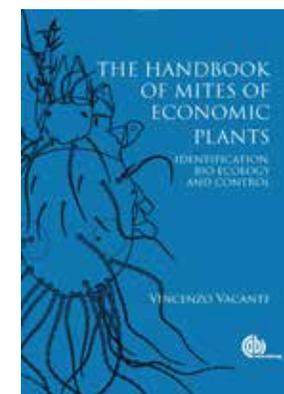
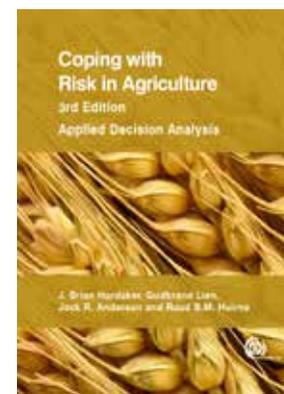
Millions of smallholder farmers around the world live in poverty because they do not know how to tackle plant pests or grow produce to international food safety standards. But we have an opportunity to change this by giving them the knowledge and tools they need to raise their incomes. If the world's 500 million smallholders can trade more quality produce, they will be able to earn more and improve their lives. And at the same time, they will be helping the world meet an increasing demand for food.

## Helping small-scale farmers lift themselves out of poverty

CABI works to  **break down barriers** in agricultural trade and help small-scale farmers build flourishing and viable businesses so they can lift themselves out of poverty.

We collaborate with people and organizations working across the supply chain that brings food from 'field to fork', helping farmers receive a fairer share of the value they create.

This includes sharing knowledge with farmers and providing training for them so they can grow better quality crops. We also help them understand the needs and expectations of markets and link them with manufacturers and retailers. 2015 saw us working with farmers and people in the food supply chain in all major regions of the world, from individuals to governments. Over the page are two of our projects...



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# Tackling invasive species to protect farmer incomes and livelihoods

Elias is a smallholder farmer from Kenya. Every year he sells his tomato crop at the local market, which gives him enough money to feed his family. But the arrival of a tomato pest to his region in Kenya has stopped that. The pest – a moth called a tomato leaf miner or *Tuta absoluta* – was recently introduced to Africa. This pest is an invasive species, and is destroying people's livelihoods.

In 2015, Elias started to notice his tomatoes were being damaged by this pest. He tried taking them to market, but customers said they had too many holes and spots and were no good. He could not sell his produce. He believes he lost 90% of his tomato crop to the pest, and had no other source of income.

Elias tried fighting this tomato pest with chemicals but they did not work. Elias now has to find another way to earn money. Thousands of farmers are in his position.

Invasive species, like *Tuta absoluta*, are devastating livelihoods. Tomatoes are one of the most widely cultivated crops in sub-Saharan Africa, grown in the backyards of almost every home. This important cash crop and source of nutrition is now being threatened by the recent arrival of the pest.

*Tuta absoluta* is rapidly moving across the African continent, decimating crops in Egypt, Ethiopia, Kenya and Tanzania. It has recently reached Nigeria, where a state of emergency has been declared – the pest has destroyed an estimated US\$5.1 million

of tomatoes and forced at least one major tomato processing plant to close. Growers do not know how to control it and many have abandoned tomato farming altogether. The race is on to prevent its spread, with management schemes planned to limit its devastation.

Since 2014, CABI has helped governments in Africa halt the *Tuta absoluta* threat and continues to do so. We are currently helping countries like Burundi, Kenya, Nigeria and Tanzania understand how they can best prepare prior to a pest invasion and are delivering practical knowledge on how to manage the pest once it has arrived. To address the recent severe outbreak in Kaduna State, Nigeria, we have provided the government with a technical brief on the tomato leaf miner together with available management experiences to help them develop a control strategy.

In 2015, we launched an important initiative to raise awareness of the threat of invasive species to the livelihoods of the rural poor. Our aim is to draw partners together from around the world to bring pest management solutions that already exist to the people who need them. We included *Tuta absoluta* as one of the priority targets for coordinated management. Our goal is to protect rural communities in developing countries from the devastating impacts of specific invasive species.

To see Elias' story, go to

 [www.invasive-species.org/stories](http://www.invasive-species.org/stories)



Larval damage by *Tuta absoluta*.  
©Marja van der Straten/NVWA Plant Protection Service/Bugwood



# Guaranteeing credit to coffee farmers in Ethiopia and Rwanda

Coffee plays a critical role in the economies of Ethiopia and Rwanda. Despite the optimum soil and climate conditions and high demand for coffee grown, the industry in these countries has not performed to its full potential. Revitalizing coffee quality and production will allow small-scale growers to increase their incomes and lift themselves out of poverty.

CABI, together with its partners, is  **helping growers to sustainably grow their businesses in producing and processing Arabica coffee.** We do this by building their capacity in good agronomic and processing practices and helping them get access to finance, processing equipment and market information.

A credit guarantee scheme helps provide cooperatives with access to affordable commercial loans. This helps growers obtain and upgrade processing equipment which, in turn, improves the quality of coffee produced and the premiums that farmers can attract.

CABI gives growers relevant market information so they can plan production and optimize their returns by selling their coffee to market at the right time. In parallel, loan officers in participating banks in Ethiopia and Rwanda are being trained to understand more about coffee production. We have helped improve business and governance skills in over 40 cooperatives, which are already leading to improved professionalism. Primary cooperatives are now able to prepare realistic and bankable business plans. Guaranteed loans are being disbursed to cooperatives

in Ethiopia and Rwanda with a high number of loans being paid back, especially in Ethiopia.

We have led the training of 100 extension and cooperative promotion agents and experts on issues covering coffee production, processing, quality, marketing and the management of farmer associations. Farmer training and demonstrations have promoted the sharing of experiences, information and ideas in Ethiopia and Rwanda.

*"Without such external support, we would not have any opportunity to access bank loans. We have reached the stage of hiring workers and we have a plan to own a vehicle. We have a bright future ahead of us as we have established a strong relationship with the bank."*

**Gobena Godana**, Chairman, Shola Koda Cooperative Society, Ethiopia

## Donors and Partners

### DONORS

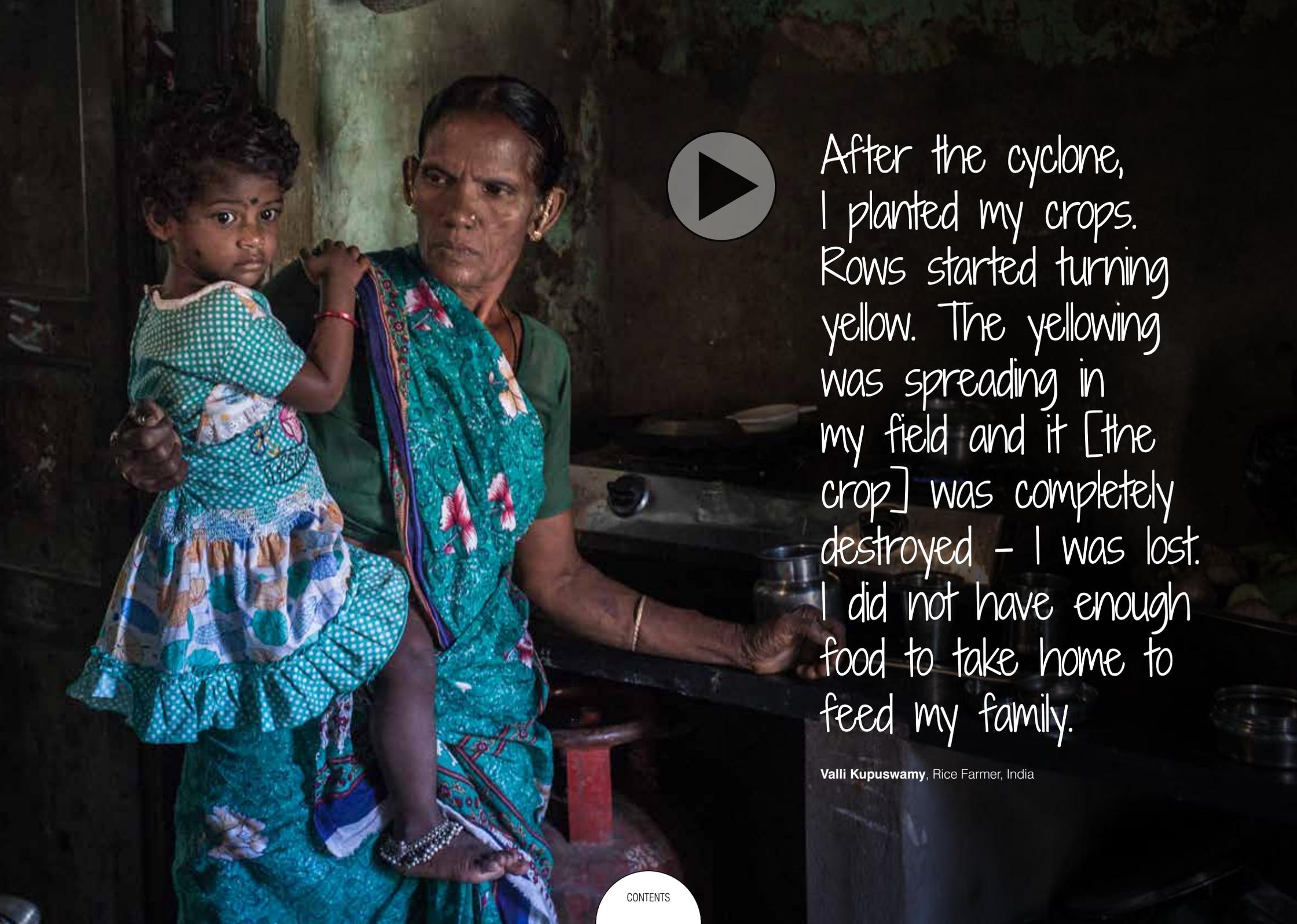
Common Fund for Commodities  
International Coffee Organization  
Rabobank Foundation

### PARTNERS

Ministry of Agriculture and Natural Resources, Ethiopia  
National Agriculture Export Development Board (NAEB), Rwanda  
The Cooperative Bank of Oromia (CBO)  
Banque Populaire du Rwanda (UBPR)

CABI CENTRES  
CABI in Africa





After the cyclone, I planted my crops. Rows started turning yellow. The yellowing was spreading in my field and it [the crop] was completely destroyed - I was lost. I did not have enough food to take home to feed my family.

Valli Kupuswamy, Rice Farmer, India

# 2 ZERO HUNGER



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

Every day, nearly one billion people go hungry and are malnourished. Many are children. When crops fail, subsistence farmers like Valli from India – farmers who grow food for their families to eat – are left with nothing.

At an individual level, food and nutrition security is a serious problem. On a global scale, food scarcity is just as challenging. With an estimated world population of over nine billion by 2050, food demand will grow more than 70%. But food production is not set to increase at the same level. How will we feed everyone?

500 million small-scale farmers provide up to 80% of food consumed in developing countries. Investing in smallholders can increase food and nutrition security for the poorest, as well as food production for local and global markets.

If we want to tackle hunger, we must tackle the barriers that stand in the way of growing food, like crop pests. An estimated 30–40% of crops are lost each year to pests. Reducing losses by just 1% could feed millions more people.

By growing more, losing less and using resources like land and water more sustainably, we can achieve zero hunger.

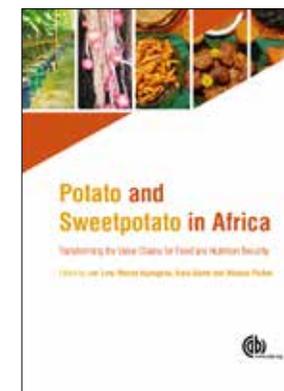
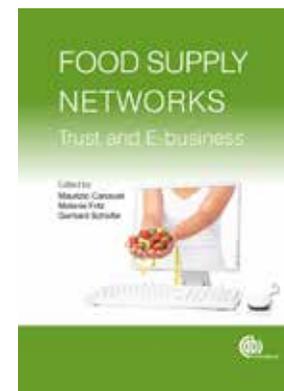
## Tackling food security – at all levels

CABI helps improve food and nutritional security, incomes and livelihoods.

Our programmes like Plantwise help solve food security, working with people from individual farmers all the way to governments.

We help farmers introduce good agricultural practices, tackle plant pests, find alternatives to harmful pesticides and grow more healthy crops. We improve access to healthy seeds and soil, provide training and introduce new crop production technologies.

In 2015, our food security programme, Plantwise, went from strength to strength, operating in 34 countries around the world. We bring you some of the highlights over the page...



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# Multi-award winning food security programme continues to deliver

Since its launch in 2011, CABI's  **Plantwise** programme has continued to help make subsistence agriculture more effective for the farmers who depend on it. It provides vital knowledge to millions of farmers so that they lose less of what they grow. By introducing Plantwise in 34 countries to date, CABI is helping strengthen food security around the world.

In 2015, the programme continued to grow in scope and impact, reaching 4.5 million farmers with practical plant health information. CABI works with countries to integrate Plantwise into national plant health systems. National organizations then steer Plantwise implementation. This ensures sustainable farmer-focused services in the long term.

In addition to subsistence farming, the global food supply chain opens a window of opportunity for smallholder farmers like Nguyen Van Phu in Vietnam, where cocoa farming has risen tenfold in the past decade. Watch  **a video about Phu** to find out how plant clinics and plant doctors are helping him protect his harvest and his income.

In recognition of its role in supporting the fight against hunger, Plantwise was invited by the Swiss Agency for Development and Cooperation (SDC) to be part of the Swiss pavilion at the  **Milan World Expo** in May 2015. The theme for the Expo was 'Feeding the Planet' and the Plantwise exhibit showed how plant clinics are helping farmers manage crop pests. Over two million people visited the exhibit, featuring a live plant clinic demonstration, as well as an interactive  **Plant**

**Doctor Game** for mobile phones that lets people play at being plant doctors.

2015 also saw Plantwise bring together its technology tools to share knowledge, increase reach and monitor progress. In addition to diagnostic and data management apps, Plantwise also launched the  **Plant Doctor Simulator**; a training tool designed to enhance plant doctor diagnostic skills through gameplay and real-time feedback.

The introduction of tablets at plant clinics streamlined data collection and enhanced plant doctors' access to the information they need. Plant clinics equipped with digital devices (e-plant clinics) were piloted at 86 locations in four countries and will be rolled out to more countries in the future.

In February 2015, Plantwise was shortlisted for the  **Olam Innovation in Food Security Award** for its potential impact on the availability, affordability, accessibility or adequacy of food. Plantwise was also awarded the  **OECD DAC Prize 2015 for Innovation and Scale**. This prize celebrates initiatives that take innovative approaches to international development, scaling up pilot projects and applying them more widely.

*"Plantwise's promising partnership model is exactly the sort of innovation we need to reduce plant loss and combat hunger around the world."*

**Raj Kumar**, Chair, Humanitarian Council, World Economic Forum and member of the OECD DAC Prize 2015 jury

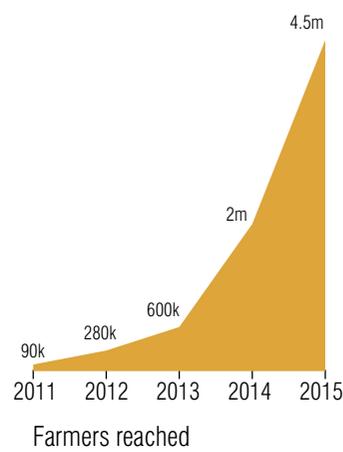
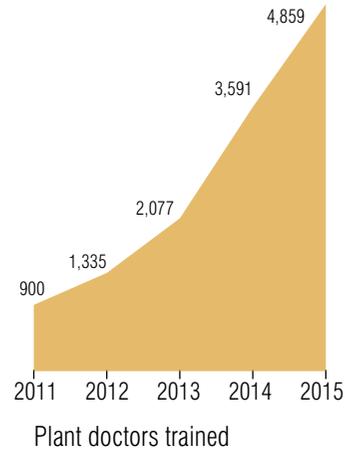
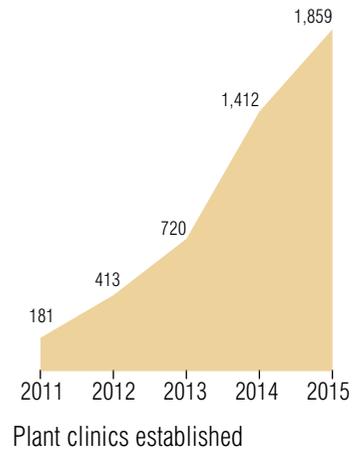
Learn about the  **Plantwise knowledge bank**, a global resource to help combat plant health problems, in this video.



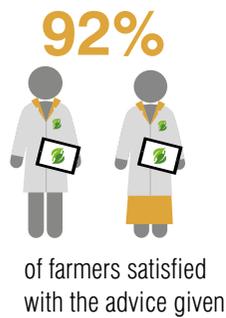
See the  **Plantwise Annual Report 2015** for more information about this programme.

# Plantwise goes from strength to strength

## Scale



## Farmer satisfaction



# Giving women the knowledge they need to feed their families

In developing regions, women are often responsible for food crops, and men for cash crops. Men usually control the family income and it can be difficult for women to find spare cash to invest in food crops or to justify spending the time to attend plant health clinics.

And yet, when this barrier is broken down and women are given the right information and tools, they can improve their lives and the lives of their families, sometimes overcoming terrible hardship, hunger and poverty.

Etiang Joseph, a Senior Agricultural Officer from Uganda, tells the story of one woman who turned her life around by using Plantwise plant clinics. With plant doctor support, she learned how to grow enough food to feed her family and to sell for income at a time when she was desperate for support and had nowhere else to turn. Her name has been changed to Alice to protect her identity.

"Due to worsening economic condition in the area, Alice's husband opted to go away to look for employment. When he returned he was sick with HIV/AIDS and she also contracted the disease.

She had to battle with stress, looking after her husband and her own illness, which almost broke her. She became the sole bread winner and head of the household and was left to

take care of her five children, providing them with food, clothing, medical care and whatever assistance they needed.

The only resource she had was land, and agriculture was the only work she could engage in for the survival of the family. On her small piece of land she grows cassava, groundnuts and sunflower and keeps some livestock to earn money to support the family needs.

Alice thought that her whole groundnut crop would be destroyed by aphids and that she would have no food to eat that year. Then she heard about the plant clinic being advertised at the market place.

She visited the plant clinic and after discussing the problem with the plant doctor she was able to save the crop and harvest her groundnuts.

She used the money to pay school fees for her children. The existence of plant clinics has helped her to reduce her crop losses and therefore contributed to her resources needed to feed, clothe and take care of her family."

**Etiang Joseph**, Senior Agricultural Officer, Uganda, from *Listening to the Silent Patient*

## 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](http://www.plantwise.org/clinicpartners)

CABI CENTRES  
 Global

## Download the FREE PDF of the first Plantwise book



This first Plantwise book reflects on over a decade of plant clinic implementation in Uganda, including the impressive evolution of the national plant health system and useful lessons for farmer-focused development projects everywhere.

# Helping women overcome the hidden hunger of malnutrition

One in three people in developing countries suffers from the hidden hunger of malnutrition. Nearly half of deaths in children under five – a total of 3.1 million each year – are caused by a lack of nutrition.

In 2015, CABI worked on several initiatives to help deliver practical nutrition information to women. Women are not always in control of the household budget. But the potential for them to play a greater role in nutrition-related household decisions is substantial, given the right support.

Over the course of 2013-14, CABI delivered practical learning-by-doing training in home crop production to over 750 women in two districts of Pakistan. This helped the women grow fresh, nutritious vegetables for their families and communities and make good dietary decisions.

In 2015,  **CABI's working paper** on the project reported that 97% of women in Muzaffargarh district increased the use of vegetables in their household meals following the training, with better quality homegrown vegetables replacing ones bought at markets. Nutrition in children improved and interviewees in Skardu district saw a decrease in stomach-related illnesses.

The positive outcomes of the CABI training helped communities see the benefit of investing in women's agricultural skills. Prior to the project, this had been considered culturally unacceptable. Following the training, the number of women able to influence household

spending decisions also rose from 5% to 50%.

In 2015, CABI continued its work with the  **mNutrition initiative**, aiming to reach three million people with nutrition advice via mobile phone messaging services. The services focus on women and children, helping people in 12 developing countries increase their access to knowledge about agriculture, nutrition and health.

*"This [mobile messaging] service has helped us do things differently. And we saw that those practices have results."*

**G. Dilhai Nilathi Priyadarshini Perera**, Sri Lanka

In 2015, CABI was also selected to host the secretariat of the  **Global Open Data for Agriculture and Nutrition (GODAN)**. This partnership has grown rapidly to over 280 organizations. It supports the opening up of data to make information about agriculture and nutrition available, accessible and usable in order to improve world food and nutrition security worldwide.

## Donors and Partners

### KITCHEN GARDEN SKILLS

DONORS  
Punjab Skills Development Fund  
Aga Khan Foundation

PARTNER  
Aga Khan Foundation

CABI CENTRE  
CABI in South Asia

### MNUTRITION

DONORS  
UK Department for International Development (DFID)  
Groupe Speciale Mobile Association (GSMA)

PARTNERS  
Global Alliance for Improved Nutrition (GAIN)  
Oxfam GB  
International Livestock Research Institute (ILRI)  
The British Medical Journal (BMJ)

CABI CENTRE  
CABI Head Office

GODAN  
For information about GODAN, including its partners, see

 [www.godan.info](http://www.godan.info)

**97% increase**  
in vegetables used in household meals



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Scientific knowledge on sustainable agriculture and the environment, when shared, gives people technology and knowledge to solve problems. It's important to make sure they can be practically adapted from the lab or field. Practical educational tools and lifelong learning are essential.

52

new books  
published

**Raymonda Johnson**, Alumni, Master of Advanced Studies in Integrated Crop Management, a CABI – University of Neuchâtel course

# 4 QUALITY EDUCATION



ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

**Sharing scientific agricultural and environmental information helps people tackle global challenges like food security. In supporting education and lifelong learning, we must make sure that information is freed up and shared with the people who need it most in a way they can easily access and apply it.**

## Sharing knowledge, changing lives

CABI creates resources that give access to science-based information on agriculture and the environment. Our mission is to improve people's lives worldwide by sharing knowledge. This mission is at the heart of all we do, because education and knowledge, quite simply, change lives for the better.

As a scientific publisher, we produce materials for academics and researchers that make education easier and lifelong learning a reality. We work with universities in developed and developing regions to strengthen education. With the University of Neuchâtel in Switzerland, we launched a  **master's degree in integrated crop management** open to students from developing countries.

We create books, eBooks and online information resources for the next generation of agricultural and environmental experts.  **CAB Abstracts** is one of the world's leading abstracting and indexing databases covering applied life sciences.

In our international development projects, we share know-how with people who may not have access to learning opportunities, through farmer field schools and workshops. We work with organizations like Book Aid International and  **RUFORUM** opening up our publishing products to students in developing regions.

We tailor information to people's needs by culture, gender and language. We innovate with modern technologies for information delivery. And we are at the forefront of advocating for open data in agriculture and nutrition as a default position around the globe.

# 8,182,694

research papers abstracted and available in CAB Abstracts



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## Replenishing books destroyed by a flash flood disaster

Highly specialist books on subjects like *Climate Change Adaptation at the Farm Level* are in great demand in sub-Saharan Africa, where agriculture is a major employer as well as an important field of academic study.

In 2015, CABI and Book Aid International (a library development charity working in sub-Saharan Africa) worked together to bring specialist scientific books on agriculture and tropical health to students at universities, medical schools and colleges across the continent.

CABI gave Book Aid International the opportunity to have additional copies of new titles printed, allowing the charity to purchase them at cost price. This meant that relevant academic books could be delivered to the universities and research institutions that needed them. CABI books are in high demand. The Astra campus library at Bindura University of Science Education in Zimbabwe cited CABI's *Fungicides in Crop Protection* as one of the most useful titles supplied by the charity in 2015.

What did Book Aid International say about the collaboration?

"Thanks to the collaboration with CABI, we are able to supply new books to academic libraries like the Astra campus library at Bindura University of Science Education in Zimbabwe.

The campus was hit by flash floods at the beginning of 2015. Its library, which served around 3,000 students, was destroyed along with

a fifth of its book collection putting students' success in jeopardy as many are unable to purchase books of their own.

Books salvaged from the flood have been moved to the main campus library and we are proud to work with the university to help replace what was lost, supplying brand new, relevant books such as those received through the collaboration with CABI. For Bindura University and other educational institutions in many of the countries where we work, books like these are hugely valuable: small library budgets lead to a shortage of reading materials for courses. These books will help alleviate the shortage and ensure students are working with up-to-date material."

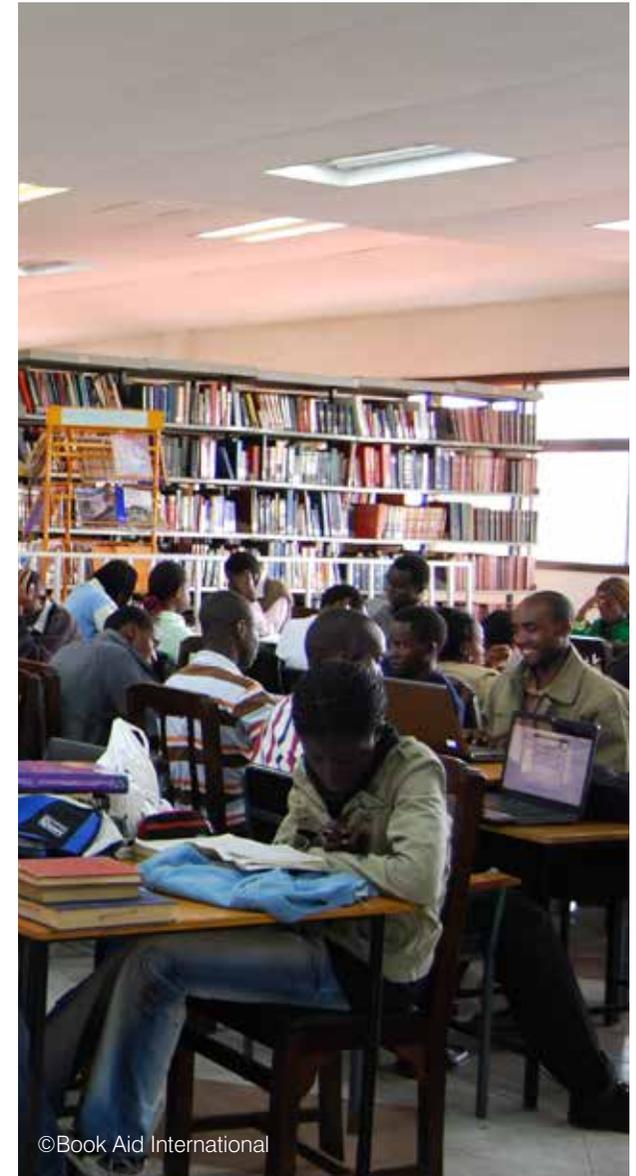
**Alison Hubert**, Director, Book Aid International

"We value donations as they assist the university in achieving its mission of producing innovative and highly acclaimed graduates for the benefit of the nation and international community."

**Audrey Mhlanga**, Librarian, Bindura University, Zimbabwe

For more information about CABI Publishing, go to

 [www.cabi.org/publishing-products](http://www.cabi.org/publishing-products)



©Book Aid International

# CABI database helps organizations reach global health decisions

We live in an increasingly interconnected world. Events on one side of the globe can, and do, quickly affect the other. Infectious diseases, as we saw with Ebola, can rapidly become international crises. Decision makers are coming to realize the benefits of thinking broadly about public health and the significant drawbacks when they fail to do so. But reaching effective global health decisions relies heavily on accessing and analysing the right research.

This is where  **CABI's Global Health database** is making a difference. With over 2.6 million records, Global Health is the only specialist database dedicated to public health. It captures key literature not covered by other databases: 60% of its material is unique.

In 2013, two international donors – DFID and the Wellcome Trust – commissioned a report, which used Global Health in a series of systematic reviews to inform them of how they might reach funding decisions for their £8 million programme: Research for Health in Humanitarian Crises (R2HC). Systematic reviews are a type of literature review that analyse research studies to answer specific questions. The report, entitled Humanitarian Health Evidence Review, was published in 2015.

Dr Bayard Roberts is co-principal investigator for the report and a senior lecturer in health systems and policy at the London School of Hygiene & Tropical Medicine (LSHTM). He explained that it was the first of its kind to look specifically at evidence gaps in the effectiveness of health responses in humanitarian crises.

*"It is the norm for systematic reviewers at the LSHTM to include the Global Health database, in order to be comprehensive."*

**Dr Bayard Roberts**, LSHTM

Data sourced from Global Health also contributed to systematic reviews that influenced a World Health Organization (WHO) report on preventing diarrhoea through better Water, Sanitation and Hygiene (WASH). The reviews, as part of the evidence-base for WASH, also had an impact on Sustainable Development Goal 6 on universal access to water and sanitation.

Researchers from the LSHTM commissioned by Sightsavers used Global Health to help the organization understand how and where it should focus its future work. Specifically, their research paper investigated possible links between climate and the incidence of an infectious eye disease – blinding trachoma – in order to understand the possible impacts of future climate change on the disease and aid Sightsavers and the trachoma community to better plan trachoma elimination and surveillance programmes.

For more information about Global Health, go to

 [www.cabi.org/globalhealth](http://www.cabi.org/globalhealth)



**2,611,640**  
abstracts in our Global Health database



The red spider mite has become a serious issue for us strawberry farmers. The plants affected by these mites are not producing great fruits; the fruits are smaller in size, which are not marketable. We have to regularly spray pesticides to control the mites. The cost of labour and pesticides are diminishing our profit.

**Syed Rashdan**, Farmer, Malaysia

# 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



## ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

**In future, farmers will need to produce more food from fewer resources. They will also need to significantly reduce crop losses. But without the right information, farmers cannot easily introduce new, highly productive and sustainable ways of farming.**

**Rural communities, in developing regions especially, find it difficult to gain the maximum food production potential from the land. For many, pesticides are the main way of tackling plant pests and preventing harvest losses but these chemicals can be expensive and harmful to human health. How can they grow more using fewer resources and lose less produce? Is there another way to sustainably produce more food?**



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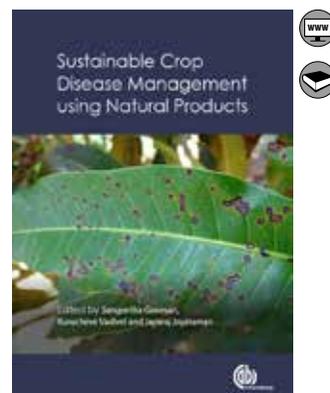
## Growing more and losing less in a sustainable way

Sustainable production is central to CABI's work. We promote resource efficient farming and help farmers access the tools and training they need to lose less produce and grow more. We believe this approach leads to better livelihoods for farmers and safer, more sustainably grown agricultural produce.

CABI promotes the kind of crop management that minimizes the use of agro-chemicals and prevents pollution. We help farmers tackle pre- and post-harvest losses and adopt sustainable practices based on scientific know-how.

We also work with partners to develop agricultural advice that can be sent to farmers using modern technology like mobile phones. We want to make the most of the mobile revolution to reach as many farmers as possible.

In 2015, CABI worked on a number of projects to help farmers grow more produce and reduce harvest losses. These included using natural ways of managing crop pests and reducing the use of pesticides. We look at these two projects here...



# Fertilizer tool helps farmers grow more produce and earn more profit

The United Nations International Year of Soils took place in 2015, an important time to think about the role that healthy soils play in sustainable farming. Soils in Africa are inherently poor in nutrients, meaning farmers' yields are sometimes a quarter of what they could be. But for many smallholders, fertilizers are too expensive to use.

Part of sustainable production is putting back nutrients that are taken away by producing food. Farmers do what they can with manure and farm waste. But to increase yields further, they need fertilizer. They only have a small amount of money to invest so they have to use that money wisely. The innovative Fertilizer Optimization Tool (FOT) helps farmers do just that.

The FOT is a tool first developed by scientists from the University of Nebraska-Lincoln (UNL) and the National Agricultural Research Organization in Uganda. FOTs for 13 countries were developed in the  **Optimising Fertilizer Recommendations in Africa (OFRA)** project. This is a partnership between CABI, UNL and national agricultural research institutes in 13 countries in sub-Saharan Africa, supported by the Alliance for a Green Revolution in Africa (AGRA) and working closely with the CABI-led Africa Soil Health Consortium (ASHC).

The FOT helps farmers select the right crops and apply the optimum amount of fertilizer in order to maximize their profits. The tool looks at alternative

and substitute fertilizers, helping farmers use what they have available and can afford.

FOTs were developed for 67 soil 'zones' in 13 countries. The partnership is using teaching materials to train extension workers and agro-suppliers on how to use the FOT. These people will then use the tool to help farmers.

With the tool, Juliet Yeshe from Kapchorwa district in eastern Uganda, for example, increased her yields by 50%. She grows rice on a one-acre piece of land. Without fertilizer she used to harvest around one tonne of rice. After the FOT was used to apply the right quantities of fertilizer, she harvested 1.5 tonnes.

In Bukkerere village in Kayunga district in Uganda, Kipi Chary reported how the FOT enabled him to reduce his fertilizer use from 50 to 42 kg, leaving him with extra cash.

*"As farmers, we are saving so much in terms of money and can redistribute this in other crops."*

**Lucy Chesang**, Farmer, Uganda

In Uganda, fertilizer use is very low and the poorest farmers have little money to spend on it. The FOT helps them make the very best use of the fertilizer they can afford. In the coming year, the project will train 2,000 people how to use this tool.

## Donors and Partners

### DONOR

Alliance for a Green Revolution in Africa

### PARTNERS

University of Nebraska-Lincoln

National Agricultural Research and Extension Systems of the 13 project countries

Africa Soil Information Services (AFSIS)

Grameen Foundation

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CABI in Africa



# A non-chemical, sustainable approach to tea production

India is the second largest tea producer in the world. Recently, tea growers have experienced frequent and serious pest outbreaks that reduce the quality and amount of tea they can produce.

Farmers rely on chemical pesticides to reduce the problems. But the pests are becoming resistant to the chemicals, and consumers are becoming concerned about pesticide use.

"Though the pesticides were being blanket sprayed regularly, the problem of pests and diseases kept on damaging the yield and quality. This resulted in increased production cost but the market did not offer a higher price for tea. This made it a very marginal profit. Use of pesticides was becoming like a treadmill and unavoidable."

**Bibek Rajkhowa**, Manager, Hoolonguri Tea Estate, Andrew Yule Tea Gardens

Since 2014, CABI has been working with Unilever to  **develop a plan to sustainably produce tea without using chemicals.** Together, we are creating a tool kit of non-chemical, eco-friendly ways to sustainably manage tea pests. This includes improving soil nourishment, building a healthy ecosystem, establishing populations of natural pest control (other insects, for example), and using natural composts and washes to strengthen the plants' health, thus reducing the use of chemicals.

CABI and partners are conducting experiments in tea plantations in India and have started seeing good results. With ecological practices in place, sudden attacks of pests like the tea mosquito bug are reducing.

*'When the project started I was sceptical. I gave the oldest, most hopeless part of the garden to the project team. But today, I'm very pleased to see the results. Although this is early stages, the area is revived, because of the ecological practices. I'm keen to continue the support. I'm confident the outcome from this will be beneficial to the entire tea industry.'*

**Praveer Murari**, General Manager, Phoolbari Tea Estate, McLeod Russels, India

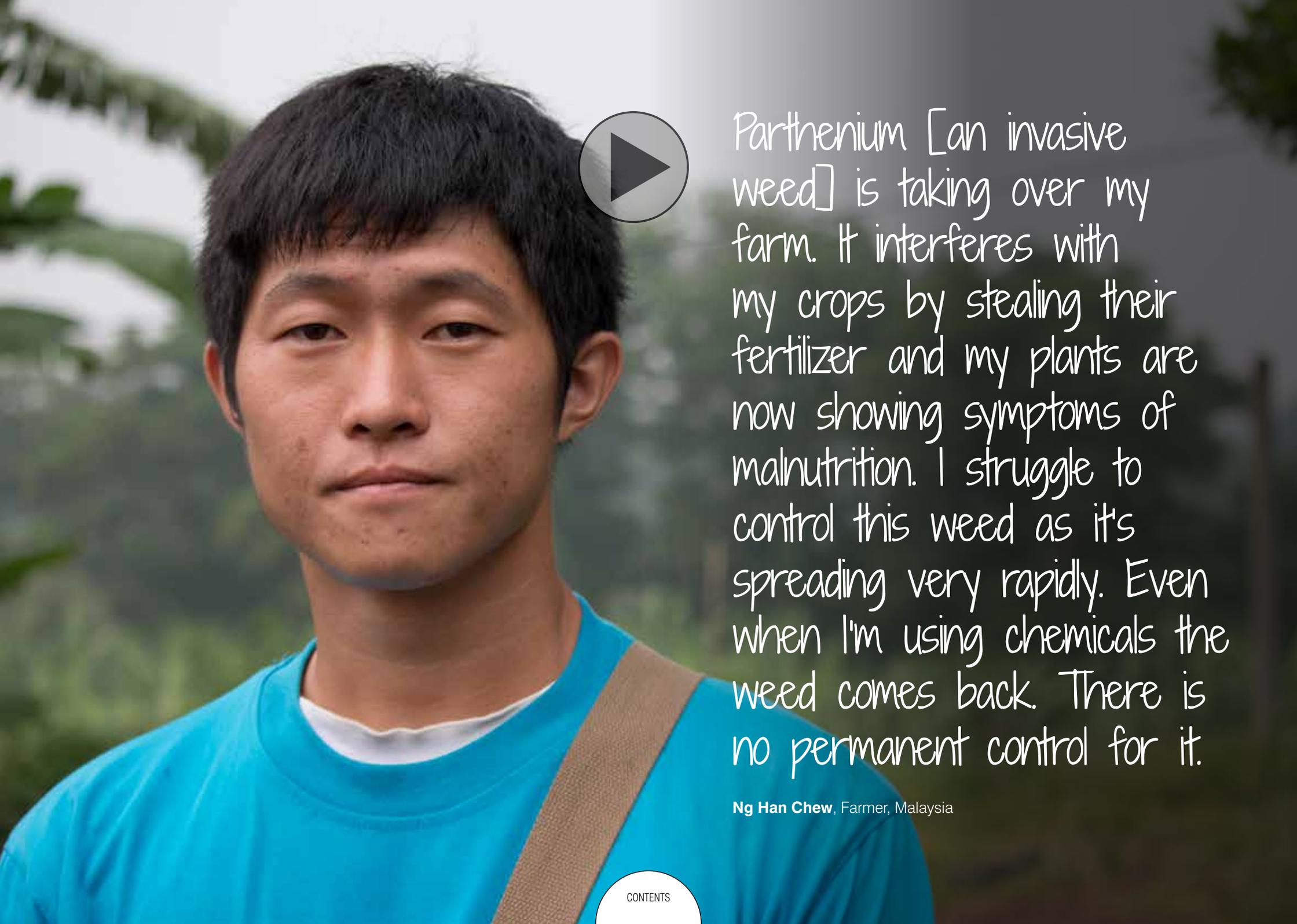
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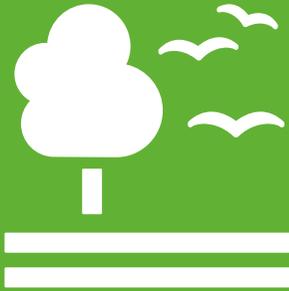


Parthenium [an invasive weed] is taking over my farm. It interferes with my crops by stealing their fertilizer and my plants are now showing symptoms of malnutrition. I struggle to control this weed as it's spreading very rapidly. Even when I'm using chemicals the weed comes back. There is no permanent control for it.

**Ng Han Chew**, Farmer, Malaysia

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# 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

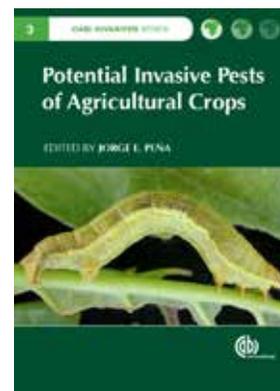
Millions of people living in rural communities around the world face problems with invasive species – animals, diseases, insects and plants – that are out of control and have resulted in damage costing more than an estimated US \$1.4 trillion globally (Pimentel *et al* 2001).

It may be difficult to believe that an invasive weed like parthenium can cause so much damage, but farmers like Ng Han Chew (opposite) are living with this harsh reality and few means of controlling it. Invasive species badly affect people's livelihoods by destroying crops and good farmland, depleting water resources and even poisoning humans and livestock. They have also been identified as the second greatest threat to biodiversity after habitat loss.

## Tackling the threat of invasive species

CABI helps prevent, detect and limit the impact of invasive species by training government officials about the way they arrive and spread, supporting early detection and removal, and advising on natural, sustainable control (biocontrol) and pest management.

In 2015, we worked across the globe tackling invasive woody weeds like prosopis and parthenium, which are now also believed to be potential breeding grounds for mosquitoes carrying malaria. We helped control invasive species that destroy the natural and unique biodiversity and ecosystems of places like the Galapagos and Robinson Crusoe Island. Here are some of the projects we worked on in 2015...



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# Controlling invasive species to protect farmland and natural habitats

With increased international mobility, animal and plant species are being moved into new environments where many spread and thrive. A lack of natural enemies is often one of the factors that allow these introduced species to outcompete native ones, negatively affecting farmland and natural habitats. Chemical and manual ways of controlling invasive species can be difficult and damaging. But natural alternatives can offer lasting solutions.

In 2015, CABI published a report on *The Impacts of Some Classical Biological Control Successes*, which highlighted CABI's successes in biocontrol. Natural or biological control is a sustainable way of controlling invasive species. It uses the natural enemies of the invasive species, which are tested to ensure they pose no threat to the new habitat, to effectively manage the introduced species over the long term.

One of the case studies in the 2015 report looks at the success of  **CABI's work to control leafy spurge**, an invasive weed that threatened the farmland and plains of North America. In the 1980s, CABI introduced a natural control for leafy spurge – European flea beetles – and by the 1990s recorded a reduction of up to 95% of the spurge as a result of the beetles' release.

In 2015, CABI continued to work across the world to manage invasive species with biocontrol and protect ecologically and economically important areas.

Yellow toadflax is an aggressive weed that reduces native flora and fauna in Canada. In 2014, CABI released an insect – a weevil called *Rhinusa pilosa* – to control the toadflax. In 2015, the successful overwintering of the weevil was recorded, which could prove a landmark event in attempts to control toadflax in North America.

The unique forests and wildlife of the Galapagos Islands are being threatened by an invasive blackberry. This plant grows up to three metres tall and now covers an area on the islands larger than 21,500 football pitches. In 2015, CABI scientists searched for natural biocontrols to manage the blackberry.

The incredibly important native biodiversity of Robinson Crusoe Island is also under threat from invasive species. Of the island's 213 native species, 108 are endangered and/or rare. In 2015, as part of a larger programme for the whole archipelago, a team from CABI began efforts to conserve and re-establish native species on the island with local experts.

Himalayan balsam has rapidly become one of the most invasive weeds in the United Kingdom, outcompeting native plants and impacting river wildlife. Traditional control methods are not working. In 2015, CABI continued its work using a rust fungus to control this weed while leaving native species intact.

"CABI's tireless surveys, research and testing of solutions, has made weed biocontrol a success in the American West"

**Nancy Peiropan**, Assistant Supervisor, Fremont County, Wyoming Weed and Pest Control District, USA

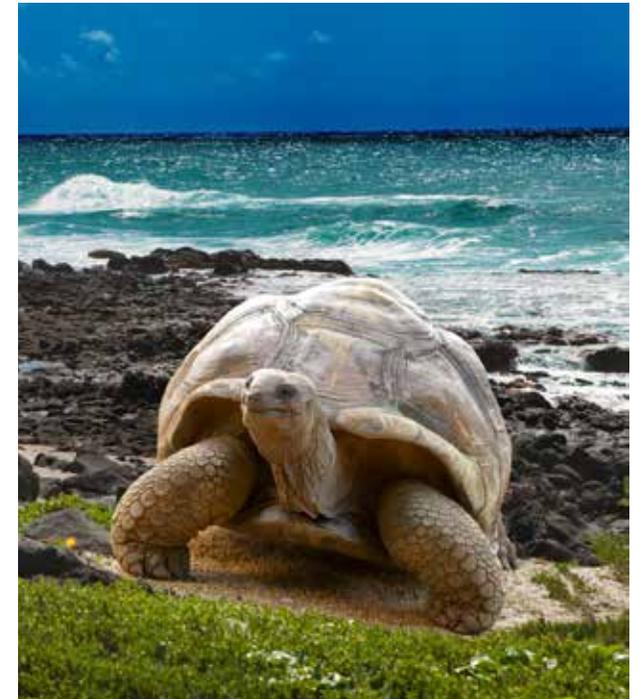
For the donors and partners of these projects, please see:

 [www.cabi.org/toadflax](http://www.cabi.org/toadflax)

 [www.cabi.org/galapagos](http://www.cabi.org/galapagos)

 [www.cabi.org/crusoe](http://www.cabi.org/crusoe)

 [www.cabi.org/balsam](http://www.cabi.org/balsam)



# Invasive species – the threat to livelihoods

All around the world, invasive species threaten human, animal and plant life on land and in water. In Laikipia, Kenya, the invasive cactus, *Opuntia stricta*, has taken over hundreds of hectares of pastureland, threatening the way of life of Maasai pastoralists.

The cactus has not only reduced the amount of pastureland, but also caused ill health and sometimes death in livestock that feed on its spiny fruits. The large cactus spines also cause physical harm to both animals and humans.

"This used to be a very beautiful environment before cactus colonized the grazing fields, claiming livestock and pasture land, and forcing us from our homes."

**Parsito Kitongo**, Pastoralist, Kenya

But now pastoralists have a reason to smile. In 2015, after receiving all of the required permits, CABI introduced a natural enemy to the  **Laikipia region of Kenya in a bid to control the cactus**. This South American insect was shipped from South Africa, where the same cactus is now being effectively controlled by it.

This insect, a sap-sucking cochineal bug, feeds on the cactus 'leaves', reducing its flowering and fruiting, ultimately in many cases leading to the death of the plant. The insects multiply rapidly and are easily dispersed by the wind. The Kenyan authorities authorized the release of the bug after research had

proved that it only feeds on *Opuntia stricta* and does not pose a threat to crop or native plant species.

The trial is already showing early success in controlling the cactus and could be rolled out to other regions in East Africa.

"In two to three years from now there will be very little of this cactus left."

**Dr Arne Witt**, Invasives Coordinator, CABI

In 2015, CABI also brought together experts in Kenya to investigate a possible  **link between invasive weeds and the incidence of malaria**. Mosquitoes need, among other things, plant sugars to survive. It is possible that some invasive weeds, abundant on the African continent, could also be attractive to *Anopheles* mosquitoes, potentially increasing the prevalence of malaria. Research is currently underway to investigate this possible link.

*Opuntia stricta* is only one of many invasive species that affects farmers in developing regions. Our  **invasive species website** tells more stories about the threat of invasive species to farmer livelihoods and the work CABI is doing to control them.

## Donors and Partners

### OPUNTIA STRICTA IN LAIKIPIA

**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)

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### MALARIA WORKSHOP

**DONOR**  
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A group of people are seated at tables in a workshop or meeting room. In the foreground, a woman with braided hair is looking thoughtfully towards the camera, her hand resting on her chin. Other participants are visible in the background, some looking at laptops and others in conversation. The room has a modern, professional feel with neutral-colored walls and bright lighting.

Anyone involved with agricultural development issues today knows there are no easy, simple solutions to the complex problems that confront us in the battle against poverty, malnutrition and hunger. We must work together to solve the challenge.

**Dyno Keatinge**, Chair, AIRCA

 Fellows of the Australia-Africa Plant Biosecurity Partnership discuss market access at a workshop in Melbourne, Australia. ©The Plant Biosecurity Cooperative Research Centre (PBCRC)

# 17 PARTNERSHIPS FOR THE GOALS



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

**The world we live in today faces complex and interconnected challenges that individual organizations alone cannot easily resolve. An agricultural trade ban in one region, for example, can worsen poverty in another.**

**When the scale of the challenge is global, organizations must find ways of strengthening their partnerships and coming together to find the best and most sustainable solutions.**

## Working together in partnership to address global challenges

This is why partnerships are at the heart of everything we do at CABI. We believe that real answers are found when individuals and organizations, countries and regions work together to solve problems and build sustainable futures. In 2015, CABI continued its strong participation in the Association of International Research and Development Centers for Agriculture (AIRCA). Together, we are committed to transforming rural livelihoods and landscapes, finding sustainable improvements to incomes, food security and the environment. In December 2015, we raised the  **Landscapes approach to land use** with AIRCA at COP21 in Paris.

With the Tropical Agricultural Platform (TAP) we also contributed to a new  **global framework to guide agricultural innovation** and capacity development. As part of the  **Australia-Africa Plant Biosecurity Partnership**, we helped strengthen plant biosecurity skills in Africa.

Working in collaboration with donors, partners, governments, civil society and private companies, our goal is to bring scientific information to those who need it. We support data and knowledge sharing, for example through initiatives like GODAN, and innovation and technology transfer – things that help us address global challenges sustainably.

In 2015, CABI worked in all major regions of the world with hundreds of donor and partner organizations to solve problems in agriculture and the environment. Goal 17 covers data, technology, capacity building, south–south cooperation and trade – all areas that need a solid partnership approach. We look at four CABI projects that concentrate on these areas...



# ‘Triangular’ cooperation leads to Rwanda soil health breakthrough

In 2011, an outbreak of soil insect pests devastated crops across Rwanda. This badly affected smallholders’ livelihoods, impacting families’ food security and reducing incomes.

Something needed to be done. The answer lay in CABI  **building a ‘triangular’ cooperation team** from Africa, China and Europe (Switzerland and the UK) that worked with the Guangdong Entomological Institute in China (GEI), the Institute of Plant Protection of the Chinese Academy of Agricultural Science (IPP-CAAS) and the Rwandan Agricultural Board (RAB). It provided smallholders in Rwanda with access to an environmentally friendly, biologically based way to control soil pests in vegetable crops.

The solution came in the form of naturally occurring parasitic worms or beneficial nematodes. These tiny worms selectively kill soil-dwelling insects like bean fly, cut worm and white grubs, leaving the vegetables unharmed.

This CABI-led project built on Chinese and European technology to mass produce beneficial nematodes at a newly established factory in Rwanda – a first for the country and East Africa. Nematodes native to Rwanda’s soil were successfully selected for their ability to target soil pests.

The nematode factory has not only brought an important boost to Rwanda’s growing expertise in controlling crop pests, but also became a regional platform for research between Rwanda

and neighbouring countries, and a model for future cooperation and scale-out.

A large number of activities were put in place to help share skills among people responsible for crop health in Rwanda. This has successfully enabled Rwanda to conduct its own research on soil insect pests and beneficial nematodes, as well as to produce the nematodes and train farmers on how to use them. The project has started the development of legislation for biological control products. None of these achievements existed in Rwanda before the project.

*“Through the trilateral cooperation, RAB scientists have profited from the research and technological expertise of the international project partners. A well-functioning collaboration has been established, which lay a foundation for future partnerships.”*

**Joelle Kajuga**, Head of Research, Rwanda Agriculture Board (RAB) Southern Zone, Rwanda

## Donors and Partners

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AgriTT RCF funds of DFID

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Institute of Plant Protection of the Chinese Academy of Agricultural Sciences, China  
Guangdong Entomological Institute, China

**CABI CENTRES**  
CABI in China, Africa, Switzerland and UK



# Vegetable production training helps a mother pay for family's health care

Mariam is a wife and mother of four. She lives in the Arusha area of Tanzania. Several years ago, she had little money to pay for her family's health care and school fees. Looking for ways to increase her income, she started agricultural training, learning how to grow African Indigenous Vegetables (AIVs) through the CABI-led  **Good Seed Initiative (GSI)**.

This project looked at AIVs from the production and sale of seed, all the way through to vegetable growing, trade and consumption. This was beneficial to farmers as it meant vegetable producers would have access to good quality seed and seed producers would have an assured market with vegetable producers. AIVs are not only important for income generation, but also food security, since they are high in nutrition and help ensure a well-balanced diet.

The GSI project built capacity and shared skills that communities need to thrive. 200 vegetable producers were trained in the growing and marketing of AIVs. Each of these farmers then trained at least another 10, meaning new skills were shared with a total of over 2,000 farmers. CABI's approach achieved a much wider scale of knowledge sharing compared with conventional methods.

Farmers then went on to train other farmers working through Farmer Field Schools overseen by support or 'extension' workers. 'Learning-by-doing' training and demonstrations at the schools improved the farmers' skills with hands-on practice.

When Mariam finished the training, she started growing amaranth – a leafy vegetable. During the first season, she grew two rounds of amaranth, harvesting 66 bags and obtaining a total of 760,000 Tanzanian Shillings (US\$258).

From the proceeds, Mariam paid for her children's school fees. But most importantly, Mariam is proud of having bought medical insurance for her entire family. The vegetable training has made a concrete and practical difference to her life and the life and health of her family.

*"Ever since I paid this insurance, my family feels rest assured of medical care at any time. I really thank this project for giving us the training. Each member of our group has a story to tell, especially women. We have really benefited from vegetable production."*

**Mariam Daudi Msemu**, Farmer, Tanzania

## Donors and Partners

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INADES-Formation

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# Using mobile technology to help farmers grow more food

Most of the areas of Jharkhand in central-east India are prone to drought. Farmers here depend on the monsoon to grow their crops. A late monsoon or less rainfall creates a desperate situation for them.

Hemlal Prasad Yadav is one such farmer from the Giridih district of Jharkhand. He has been troubled by unexpected changes in the monsoon and has had difficulties feeding his family. Living in an isolated area, he has had hardly any access to weather forecasts or information about new techniques to grow crops with less water. This is a problem that many small-scale farmers living in remote rural communities face.

But the availability of affordable, simple mobile phones in developing countries is changing their story. CABI is at the forefront of a mobile revolution. We are using the explosion in mobile phones in rural markets to unlock the transformative power of this communication tool, helping to bring practical agricultural advice to farmers in remote rural communities.

CABI's  **Direct2Farm (D2F)** service turns scientific information on agriculture into short SMS and voice messages, delivered straight to smallholder farmers via mobile phones.

Hemlal heard about the mobile service from the head of his village. When the service providers visited his village, Hemlal decided to register. Not only would he get information directly to his mobile phone, but the free trial period meant he could properly test whether the service would work for him without making any financial investment.

CABI's crop advice and weather updates delivered to Hemlal's mobile phone helped him take a whole new approach to irrigation. The service sent him new information about how to keep soil moisture in his fields so that he could grow crops with a minimum of water.

The messages also taught him about new pest threats in his area and how to control them. With this new knowledge, Hemlal is confident he will be able to get a decent harvest this year and his family will not go hungry.

## Donors and Partners

### DONORS

UK Department for International Development (DFID)  
Common Fund for Commodities (CFC)  
International Coffee Organization (ICO)  
GSMA Development Fund

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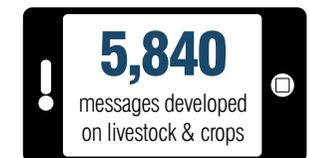
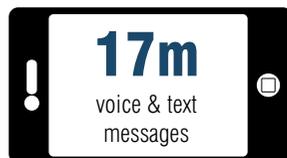
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Indian Agriculture Research Institute  
The National Health Portal of India  
The Department of Agriculture, Sri Lanka  
Kenya Agriculture and Livestock Research Organization (KALRO)

### CABI CENTRES

CABI in South Asia and Africa

"This service is a life saver for the farmers in this remote location. If other farmers register with Direct2Farm too, then everyone will get benefit from this service and our family and children will be happy and healthy."

**Hemlal Prasad Yadav**, Farmer, India



# Bringing a business boost to Ghana's farmers after a trade ban

Ghana's farmers face a financial crisis. Since 2014, the country's fruit and vegetable produce has been falling below EU food safety standards, preventing the farmers from exporting to valuable European markets. In 2015, the EU imposed a horticulture ban on Ghana, badly affecting the country's farmers. Unless they can improve the quality of their produce, the ban will remain in place.

*"The farmers are facing very severe pressures that are passed onto their families - difficulties in paying school fees for children, difficulty in paying for medical care, and poor nutrition."*

**Samuel Nii Tackie**, Tacks Farms Ltd, GAVEX, Ghana

In 2015,  **CABI launched a Public-Private Partnership (PPP)** to help Ghana break down trade barriers and improve fruit and vegetable exports to the EU. The project delivers a much-needed boost to the country's farmers.

This four-year, CABI-led PPP is helping Ghana's smallholders meet food safety and plant health standards so they can sell produce to European markets. The farmers are learning how to avoid pest outbreaks and implement integrated pest management, as well as reduce the use of pesticides and stop food contaminations.

Key to the partnership is collaboration with GAVEX – an association representing Ghana's vegetable-exporting companies. The 3,500 farmers supplying GAVEX mostly live on low incomes, so the project focuses on protecting their livelihoods. The collaboration with GAVEX helps make export businesses run more smoothly by implementing codes of good conduct and export contracts, and is creating new supply chains and strategic trade alliances with food companies in countries like the Netherlands.

This increase in productivity will help raise farmers' incomes, with knock-on benefits in employment, living standards and health. It is hoped, at a macro level, the project will boost Ghana's ability to export horticultural commodities, thereby contributing to national income.

*"This PPP will definitely lead to over 500% increase in Ghana's horticulture volume and perhaps higher increase in revenue. The future of the business looks very bright."*

**Samuel Nii Tackie**, Tacks Farms Ltd, GAVEX, Ghana

## Donors and Partners

### DONOR

Netherlands Ministry of Foreign Affairs

### PARTNERS

Plant Protection and Regulatory Services Directorate (PPRSD) of the Ministry of Food and Agriculture, Ghana  
Ghana Association of Vegetable Exporters (GAVEX)  
Sunshine Organic Farms

### CABI CENTRES

CABI in Africa and Europe





# 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...

CONTENTS



...her family



...his farm

BILL & MELINDA GATES foundation



...her yield



...his crops



Ministry of Foreign Affairs of the Netherlands



...his orchard



...her business



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC



...her market garden



...her career



Australian Government  
Australian Centre for International Agricultural Research



...his cattle



...his education



...their training



...her knowledge



...their village

Ministry of Agriculture  
People's Republic  
of China



CONTENTS

...his soil health



...their future

# Governance

## Review Conference

CABI's supreme 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 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 advisory board oversees CABI's programmes and guides management on operational and strategic issues



**Mr Philip Walters (Chair)**



**Dr Trevor Nicholls (CEO)**



**Mr Ian Barry**



**Dr Lutz-Peter Berg**



**Dr Vibha Dhawan**



**Mr Roland Dietz**



**Mr Akhter Mateen**



**Professor Ruth Oniang'o**



**Professor Emmanuel  
Owusu-Bennoah**



**Mr Paulus Verschuren**

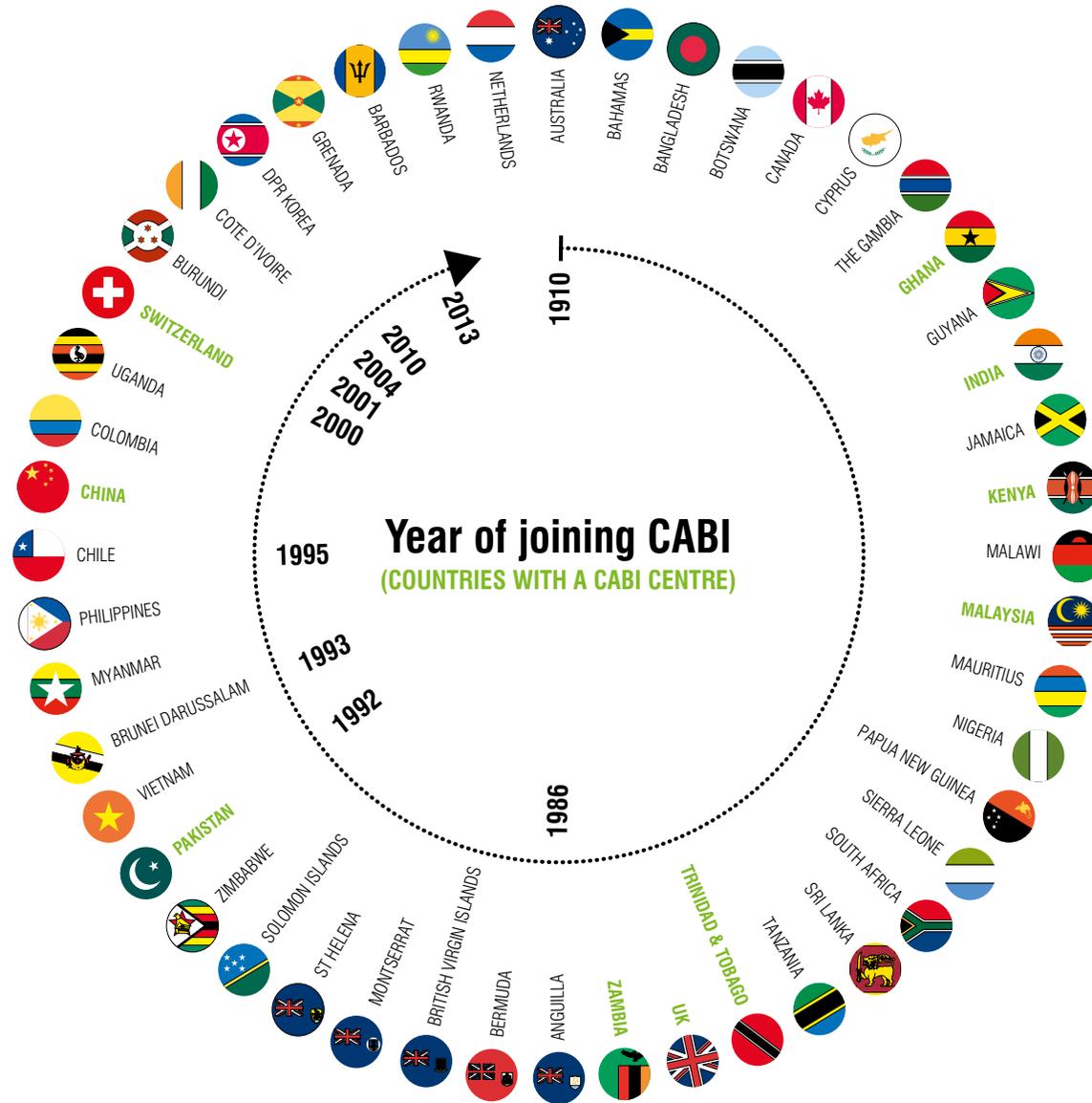


**Dr Prem Warrior**



**Madam Xiangjun Yao**

# CABI's global role



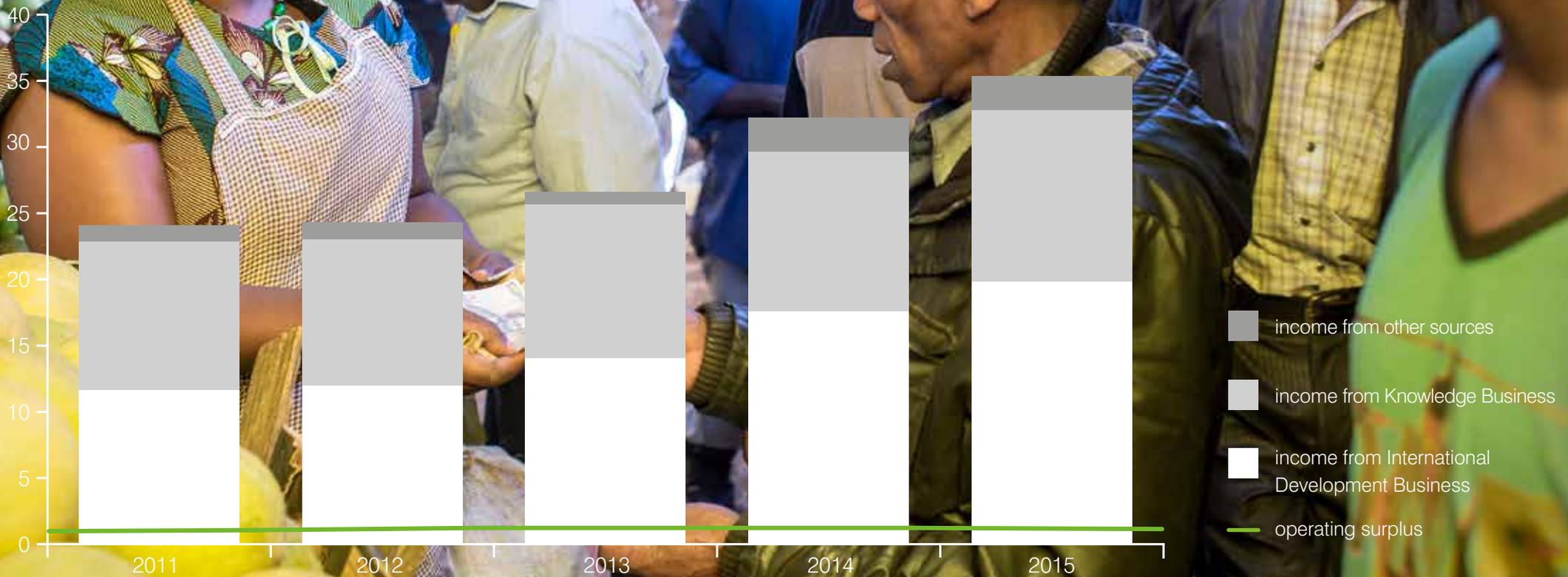
CABI is an inter-governmental, not-for-profit organization established by a United Nations treaty-level agreement. We work with countries that represent over half of the world's population, or over four billion people. Many people in developing countries are smallholder farmers.

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



## Statement of comprehensive income

for the year ended 31 December 2015

	2015 £'000	2014 £'000
<b>continuing operations</b>		
<b>income</b>		
sales and project income	32,766	29,667
member contributions	1,192	1,192
CABITAX recovery	1,318	1,283
miscellaneous income	78	93
	<u>35,354</u>	<u>32,235</u>
<b>expenditure</b>		
staff costs	(9,147)	(8,911)
direct project costs	(17,987)	(14,773)
production	(3,158)	(3,142)
facilities and maintenance	(1,368)	(1,406)
sales and distribution	(553)	(647)
travel	(685)	(632)
depreciation and leasehold amortization	(722)	(629)
consultants, freelancers	(445)	(449)
restructuring costs	(209)	(65)
provision for arrears of member country contributions	(122)	(64)
associated company profit	102	57
other costs	(444)	(624)
	<u>(34,738)</u>	<u>(31,285)</u>
<b>operating surplus / (deficit) before interest</b>	<b>616</b>	<b>950</b>
interest receivable	68	65
	<u>68</u>	<u>65</u>
<b>operating surplus / (deficit) for the year</b>	<b>684</b>	<b>1,015</b>
<b>other comprehensive income / (deficit) items that may be subsequently reclassified to operating surplus / (deficit)</b>		
cash flow hedges	6	(242)
property revaluation gains	2,334	
movement between funds	(150)	(150)
other losses on defined benefit pension schemes	(4,258)	(8,207)
	<u>(2,068)</u>	<u>(8,599)</u>
<b>total comprehensive deficit for the year</b>	<b>(1,384)</b>	<b>(7,584)</b>

## Financials

CABI had another solid year financially with double-digit growth in income (for the third successive year), an operating surplus of £684k that exceeded budgeted expectations, a strong cash position and continued investment in the development of new products and services.

Total income grew by 10%, with the growth arising from project income driven by the Plantwise Programme and other significant projects related to soil health and fertility in Africa, invasive species, and initiatives related to mobile technology and nutrition. The hosting of GODAN (Global Open Data for Agriculture and Nutrition) was another important source of income. Publishing product sales, however, declined in the year and trading is also likely to continue to be challenging.

Operating surplus reduced in 2015 as a result of the additional expenditure required for product development and additional contributions to the UK pension scheme as part of the deficit reduction plan. The pension liability, now included at its full value on the balance sheet, increased further, although its impact was mitigated somewhat by gains arising from the revaluation of properties owned by CABI. To manage that pension deficit, the contributions from CABI will continue to increase, but the Board believes the amounts are affordable and still allow investment in product development and will ensure there is sufficient capacity for CABI's work to progress.

The planning permission for the redevelopment of the Wallingford site, which will be fully self-funded, has unfortunately been subject to further delay in gaining formal approval from the local Council and we now hope to get detailed planning consent in 2016. We continue to manage our carbon footprint downwards, and following a 13% decline in 2014, there was a further 3% reduction in 2015.

**Robert Sloley**, Finance Director

## Statement of financial position

for the year ended 31 December 2015

	2015 £'000	2014 £'000
<b>assets</b>		
<b>non-current assets</b>		
land and buildings	12,378	10,207
plant and equipment	1,745	1,525
intangibles	402	132
investments accounted for using the equity method	468	366
	<u>14,993</u>	<u>12,230</u>
<b>current assets</b>		
inventories	1,765	1,538
trade and other receivables, net of provisions:		
– sales receivables	2,084	1,878
– sums owing by project sponsors	1,425	1,330
– from member countries	184	-
other financial assets:		
– cash and cash equivalents	10,840	11,636
other receivables	1,714	1,757
	<u>18,012</u>	<u>18,139</u>
<b>total assets</b>	<b>33,005</b>	<b>30,369</b>
<b>equity and liabilities</b>		
<b>equity</b>		
revaluation reserve	(4,255)	(1,921)
cash flow hedges	99	105
designated fund	(150)	(150)
accumulated fund	51,586	47,862
<b>total deficit</b>	<u>47,280</u>	<u>45,896</u>
<b>liabilities</b>		
<b>non-current liabilities</b>		
post-employment benefits	(62,309)	(58,051)
	<u>(62,309)</u>	<u>(58,051)</u>
<b>current liabilities</b>		
sales income received in advance	(3,584)	(3,572)
member contributions in advance	(5)	-
sums held on behalf of project sponsors	(10,583)	(11,013)
trade and other payables:		
– trade payables	(1,176)	(1,622)
– other payables	(2,529)	(1,902)
other financial liabilities		
– derivative financial liability	(99)	(105)
	<u>(17,976)</u>	<u>(18,214)</u>
<b>total liabilities</b>	<u>(80,285)</u>	<u>(76,265)</u>
<b>total equity and liabilities</b>	<b>(33,005)</b>	<b>(30,369)</b>

## Statement of cash flows

for the year ended 31 December 2015

	2015 £'000	2014 £'000
<b>cash flows from operating activities</b>		
cash generated from continuing operations	199	2,588
net cash generated from operating activities	<u>199</u>	<u>2,588</u>
<b>cash flows from investing activities:</b>		
payments to acquire tangible fixed assets	(754)	(857)
payments to acquire intangible assets	(309)	(77)
interest received	68	65
net cash used in investing activities	<u>(995)</u>	<u>(869)</u>
<b>net (decrease) / increase in cash and cash equivalents</b>	<b>(796)</b>	<b>1,719</b>

### NOTES TO THE CASH FLOW STATEMENT

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

operating surplus before interest	466	652
depreciation charges	722	629
share of associated company (profits)	(102)	(57)
loss on disposal of property, plant, equipment	14	27
(increase) / decrease in inventories	(227)	203
(increase) in trade and other receivables	(485)	(842)
increase in trade and other payables	181	1,134
(decrease) / increase in income in advance	(413)	1,274
decrease / (increase) in other receivables	43	(432)
	<u>199</u>	<u>2,588</u>

#### (ii) movement in net cash during the year

net cash at 1 January	11,636	9,917
net cash at 31 December	10,840	11,636
<b>movement in net cash during the year</b>	<b>(796)</b>	<b>1,719</b>



1



2



3



4



5



CONTENTS

**CABI staff**

We are proud that over 400 staff working from more than 20 locations globally provide huge amounts of expertise in many fields, and we are equally proud that CABI encourages and invests in development and learning throughout the organization.

1. Showing off the new-look CABI polo shirts in China.
2. Celebrating the Holi festival at our office in India.
3. Opening our new regional office premises in Kenya.
4. Gathering for a photo after the Regional Consultation in Costa Rica.
5. Cycling 100 miles for charity at the Ride London event.

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