



CABI
in review

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

Membership

CABI is an inter-governmental, non-profit organization that was set up by a United Nations treaty level agreement between its member countries. Our mission and direction is influenced by our 48 member countries who guide the activities we undertake.

Partnership

The world we live in today faces challenges that require concerted efforts to resolve. Global problems are often too complex or too interconnected to be resolved by any one single organization. That is why partnerships are at the heart of everything we do.

We work together with policymakers to help develop strategies to support agriculture and the environment and improve livelihoods.

Our project teams around the world work together with local and international research partners, private companies and NGOs to implement their work, and our publishing team works with authors, content providers and partner organizations to develop our information services.

We work in partnership with extension workers, governments and development partners, giving trusted advice and sharing knowledge to support smallholder farmers.

We partner with smallholder farmers to ensure they lose less of their crops to pests and diseases, improve crop quality and yield, and to get better prices for their produce.

We believe that real answers are found when organizations and individuals, countries and regions, work together to solve problems and build sustainable livelihoods.



2012 has been a year marked by economic uncertainty in the developed world, whilst the developing world has continued to grow strongly.

Against this background, it is encouraging to report the good progress that CABI has made, strategically and operationally. It has been particularly rewarding to witness another solid financial performance, demonstrating the organization's stability and resilience in uncertain times.

On behalf of the Board, I would like to thank all our staff for their contributions, commitment and enthusiasm in delivering CABI's mission worldwide.



John Ripley, Chair

At the end of 2012, we were very pleased to gain Barbados as a new full Member Country and to receive a membership application from Costa Rica, which was approved early in 2013. In addition, we welcomed CampdenBRI as our first CABI Affiliate, cementing a strategic alliance through which the two organizations can use their complementary strengths and skills to promote sustainability and technical excellence throughout the food supply chain. These new developments reflect CABI's ability to adapt, innovate and thrive in a rapidly changing world.

During the year, the CABI Board has benefited from enthusiastic contributions by all of its members – both executive and non-executive. Informal workshop sessions in between the main meetings have enabled the non-executive directors to contribute more in areas of our strategy where they have specialist knowledge. In addition, we have improved the effectiveness of our formal meetings by restructuring the agenda to include parallel sessions on Publishing and International Development, allowing focused strategic discussions with relevant members of the management team.

In 2009, CABI appointed four new Board members: Mr Andrew Bennett, Professor Emmanuel Owusu-Bennoah, Dr Don Merino and myself. Our appointments came up for renewal during 2012 and we were delighted that Executive Council approved a second term for each of us. To avoid a situation where CABI has to find four new Board members at one time when these second terms come to an end, we have developed a phased plan to ensure orderly succession between now and 2015. We intend to use the opportunity to extend diversity on the Board whilst maintaining a strong mix of technical, market and financial contributions; we have already begun identifying potential candidates.

This succession process commenced at the end of 2012 when Dr Don Merino stood down after four years as a Board member in order to develop an exciting new business opportunity in Asia. We all thank him for his service, knowledge and commitment to CABI and wish him well in his new venture.

Looking forward, we have an exciting vision to be a significant source of knowledge and innovation that contributes to the development of our member countries, customers and partners. Our immediate focus will be on the creation of new products and services in our Publishing business; the growth of our International Development activities so that they achieve break-even; and the delivery of the Plantwise initiative bringing measurable benefits to food security and farmer incomes in our partner countries. We are looking forward to continued real progress together.



I am very pleased to report another year of positive progress for CABI, building upon the foundations laid down in prior years, but also beginning to shape an ambitious vision for the future direction of the organization.

In 2012, revenue growth was much slower than in prior years at only 1%. This reflected a challenging climate in our Publishing business, particularly for printed books, together with a year of consolidation for International Development after a period of rapid growth. Nevertheless, the focus on delivery of operating efficiencies and careful cost management enabled us to deliver an improvement of 7% in Operating Surplus. CABI is once again delivering a robust financial position in a challenging climate.

Progress with Plantwise has been very encouraging. During the year, the programme expanded to over 400 clinics in 24 countries and has now reached nearly 300,000 farmers. The Plantwise knowledge bank is now a free, open-access resource containing information on more than 100 crops and 2,500 pests and diseases affecting them. It has already had over 100,000 visits from 194 countries. We have strengthened the operating framework and processes of Plantwise to ensure that our approach will be consistent across multiple countries; mainstreamed gender issues; and set up a good basis for evaluating both short-term outputs and longer-term impact from the clinics. Our initial fund-raising target of \$50 million has been achieved through major grants from the Swiss Agency for Development and Cooperation, EU DG DEVCO-EuropAid and DFID in the UK, significant new contributions from IrishAid and IFAD, plus continued support from Australia, China, and the Netherlands. We continue to have ongoing interest from a number of other potential supporters and hope to be able to reach a new target of \$100 million for Plantwise.



Trevor Nicholls, CEO

The theme for this annual report is partnership – a core value for CABI. We have always worked closely with extension services, national agricultural research institutes, universities and non-governmental organizations to deliver projects effectively and to strengthen capabilities wherever we work.

In 2012, we took CABI's partnerships to a more strategic level as we implemented Plantwise and other broad projects to improve food security and protect the environment from damage by invasive species. To make these large scale actions successful and sustainable, we have built support and ownership across multiple stakeholders (within each country and across country boundaries). CABI's membership structure and relationships give us a great base from which to build this support and strengthen our understanding of national priorities and needs.

Input from CABI's member countries is a vital factor in shaping our strategy and plans. In addition to regular project-level interactions, we try to step back from time to time in order to consider the bigger picture. To this end, we conducted a series of Regional Consultations with our member countries during 2012 and the early part of 2013. These gave valuable input and highlighted the increased importance of trade and market access. We recognise the need not only to help smallholder farmers grow higher quality crops, but also to enable them to make a better business out of their farming (e.g. by selling their produce into higher value markets or supplying commercial food producers).

During these consultations, it was also a great pleasure to welcome Barbados into CABI membership and to open our new office in Accra, Ghana, which will strengthen our links with member countries in West Africa.

Through these consultations, and a series of internal workshops, we have shaped an ambitious and exciting vision for the future direction of CABI. This sets the long term goal of making CABI the number one place to go for practical, objective, science-based information about agriculture and the environment. We aim to be recognised as the best source of knowledge to help millions of farmers to improve their livelihoods by producing more, improving quality and increasing sustainability. Project work on the ground will still be essential to keep us in touch with real people and real issues; but mobile delivery of information will be the key to reach out to a much broader audience with messages that are relevant, context-specific and high impact.



tackling food security

With an ever growing global population and an estimated one billion people going to bed hungry today, the issue of food security needs to be addressed urgently. CABI tackles food security by helping farmers lose less to feed more. It is estimated that farmers lose over 40% of their crops before harvest due to pests and diseases. A reduction of just 1% of this loss could feed 25 million people today.

Through our Plantwise programme, we are bringing better knowledge and advice to farmers on pests and diseases to reduce crop losses and improve quality. A global network of plant clinics help the poorest farmers by diagnosing their plant health problems. Supporting these plant clinics is a knowledge bank that collects and provides vital information on plant health and pest control at a local, national and international level.

In Afghanistan, we are helping farmers to grow better fruit in small orchards by training them on how to manage crop pests and diseases. We have trained many lead farmers and extension workers in the country, and continue to serve a population of over 400,000 people.

In the Democratic People's Republic of Korea (DPRK), we are building national capacity and helping the country's research community to better address food security issues by training them on how to conduct agricultural research and giving them access to the knowledge and expertise they need.

delivering a vision for improved food security

“Plant clinics have been a hugely successful programme giving practical advice to farmers. It’s a good interface. It has helped the Ministry of Agriculture to develop a pest list which is needed for trade.”

Mr Daniel Lewis, Chief Agricultural Officer Ministry of Agriculture, Forestry & Fisheries, Grenada

Donors

Department for International Development (DFID), UK
Swiss Agency for Development and Cooperation (SDC)
European Commission (EC), Directorate General for Development and Cooperation – EuropeAid
Irish Aid
Australian Centre for International Agricultural Research (ACIAR)
Directorate General for International Cooperation (DGIS)
Ministry of Agriculture of the People’s Republic of China

Partners

Over 127 local partners around the world are helping to establish and run plant clinics, share plant health information and offer the services required for strong plant health systems.



Plantwise is a CABI-led development cooperation programme which works to improve rural livelihoods and food security by reducing crop losses. By training local people around the world to become plant doctors and run plant clinics, Plantwise enables farmers to receive free diagnostics and advice on plant health problems in public places where they work and live.

Supporting these plant clinics, a global knowledge bank provides open access to diagnostic tools and information from global content partners on pest control, and also collects plant health data from plant clinics to inform actions at all levels.

With over 1.3 billion people working in agriculture worldwide, the stakeholders are numerous and widespread. CABI, through the Plantwise programme, enables partners to bring effective pest management to the places where it is needed most, the villages and markets where farmers operate.

In 2012, Plantwise supported farmers to fight back against crop loss, working with partners in 24 countries to impact the lives of close to 280,000 farmers. Food security, rural livelihood development, resilience to environmental change, poverty reduction and the advancement of agricultural knowledge are all areas where Plantwise has made a tangible difference and continues to do so.

In 2012, this initiative grew as follows:

- 204 new clinics (413 cumulative)
- 435 new plant doctors trained in field diagnostics, plant clinic operations and plant healthcare (2,000 cumulative)
- 255 new, locally-produced factsheets for farmers, for a total of 404 created to date, of which 326 are available globally on the knowledge bank
- 280,000 farmers reached
- Over 3,000 pest factsheets on 100 crops available on the knowledge bank

The progress of Plantwise in 2012 can be measured against many criteria: the scaling up of plant clinics in more countries and regions to meet a growing demand from farmers for authoritative plant health advice, the increased number of trained plant doctors and the expanded breadth of their skills to meet farmer needs, and the strengthening donor support. These are all important signs of progress. Yet as Plantwise grows, success is also critically measured in the growing number of partnerships formed at national and local levels to help make this global programme dynamic, regionally appropriate and, most importantly, sustainable.

Across the regions where Plantwise has been implemented, there are many stories of successful integration with national plant health systems. In Kenya, for example, Plantwise has truly found a home in the Ministry of Agriculture, becoming a vehicle to deliver national plant health mandates. With data-sharing, co-funding and staffing from the national government in place, Plantwise in Kenya exemplifies the model for the initiative taking shape in many countries. In Sierra Leone, Honduras and Cambodia, for example, government authorities on agricultural development are integrating Plantwise into their national strategies and budget planning. In Tanzania, Plantwise is considered relevant at each level, from research to government policy to efforts from local NGOs, because it brings each partner together to make the system work. In Sierra Leone, even the President speaks highly of Plantwise, and these stories of sustainability are being seen across the world.

Plantwise has become as important to partners as it is to the farmers who visit the clinics.

growing crops in Bamyan and Parwan, Afghanistan

“When I graduated from the Agricultural Faculty of Bamyan University, I had a basic knowledge of agriculture but only at the theoretical level. I lacked many practical skills and was not exposed to best practices. Through this programme, I have acquired many technical skills that have enabled me to offer better services to the farmers by promoting new farming techniques and improved crop management techniques. As someone who also works in government, I am better able to contribute to government policy, based on my new skills.”

Niaz Mohammed, Extension Officer in Bamyan's Department of Agriculture, Irrigation and Livestock (DIAL)



For centuries, the inhabitants of Bamyan and Parwan regions in Afghanistan have relied on agriculture and natural resources for their livelihoods, using traditional farming methods to grow crops such as apricots, apples, peaches, cherries and pears in small orchards, as well as crops such as potatoes.

These smallholder farmers found they were losing much of their harvest to pests and they lacked the skills and market knowledge to obtain good prices for their produce. CABI has partnered with the Department of Agriculture, Irrigation and Livestock (DAIL) and the Aga Khan Foundation, to help the farmers address these issues.

We started by training farmers on how to manage their crops, through a programme of Integrated Crop Management (ICM). We taught farmers how and when to prune, irrigate, apply fertilizer, rotate the crops and store produce, resulting in higher productivity. We also taught them how to commercialize their food crops and sell them at the local market for a higher price, linking them to private sector companies where necessary.

The increased yields and higher prices being achieved have made a significant difference to these farmers' livelihoods.

As well as helping the farmers directly, the project has developed the agricultural support systems in the region. Many lead farmers and extension workers have been trained and over 250 farmer field schools have been set up. These farmer field schools have gone on to train over 6,000 farmers on field crops, vegetable production and perennial horticulture.

Under the project, the first ever biological control laboratory has been established in the region, enhancing the capabilities of Bamyan University and DAIL. This will ensure that the farmers can benefit from modern agricultural technologies, such as using natural enemies to fight crop pests.

Donor

Aga Khan Foundation

Partners

Aga Khan Foundation

Bamyan University

Department of Agriculture, Irrigation and Livestock (DAIL)

partnering to improve food security in DPRK

“The project has been successfully implemented through the devoted and passionate activities of the international consultants (CABI), and the capacities of the local people who participated in the symposia and training programmes (in-country and internationally) have been remarkably boosted.”



Ensuring food security is a high priority for the Democratic People’s Republic of Korea (DPRK), where agricultural output has remained low due to the problems associated with a short growing season, soil degradation and pest damage to crops.

In order to help address the food security issue, CABI has been working with DPRK’s Academy of Agricultural Sciences (AAS) to enhance its research capacity to provide solutions for their agricultural problems. As part of the project, we have supported improved access to national and international knowledge, particularly through enhancement of the AAS communication infrastructure. As a result, scientific staff are now able to support the development and implementation of their research by accessing the internet and online resources, including CABI’s world renowned CAB Abstracts database, ebooks and Compendia products – a significant step forwards.

CABI has facilitated access to international expertise through the collaborative organization of the first joint AAS-CABI Scientific Symposium. This event provided a valuable opportunity for local partner scientists in DPRK to exchange information and discuss pest monitoring and forecasting with international experts to provide ideas for future implementation.

In addition to providing direct support to knowledge transfer and providing information, the ability of AAS to provide training has also been enhanced. With support from this project, the AAS Training Facility accommodation block has been renovated and 12 rooms completely refitted, improving the capacity to train and disseminate knowledge nationally.

Five AAS research institutes, along with three departments of the Pyongyang Agricultural College – Kim Il Sung University, have been direct beneficiaries of this partnership project.

As a result of the improvements to research, training capacity and access to knowledge, the project is helping DPRK to address its agricultural issues and improve its food security.

Donor

European Commission (EC), Directorate General Development and Cooperation – EuropeAid

Partners

Academy of Agricultural Sciences: Crop Cultivation Institute; Plant Protection Institute; Organic Farming Institute; Agricultural Information Institute; International Exchange of Science and Technology Centre.

Pyongyang Agricultural College – Kim Il Sung University: Department of Plant Protection; Department of Crop Production; and Department of Information.



supporting farmers

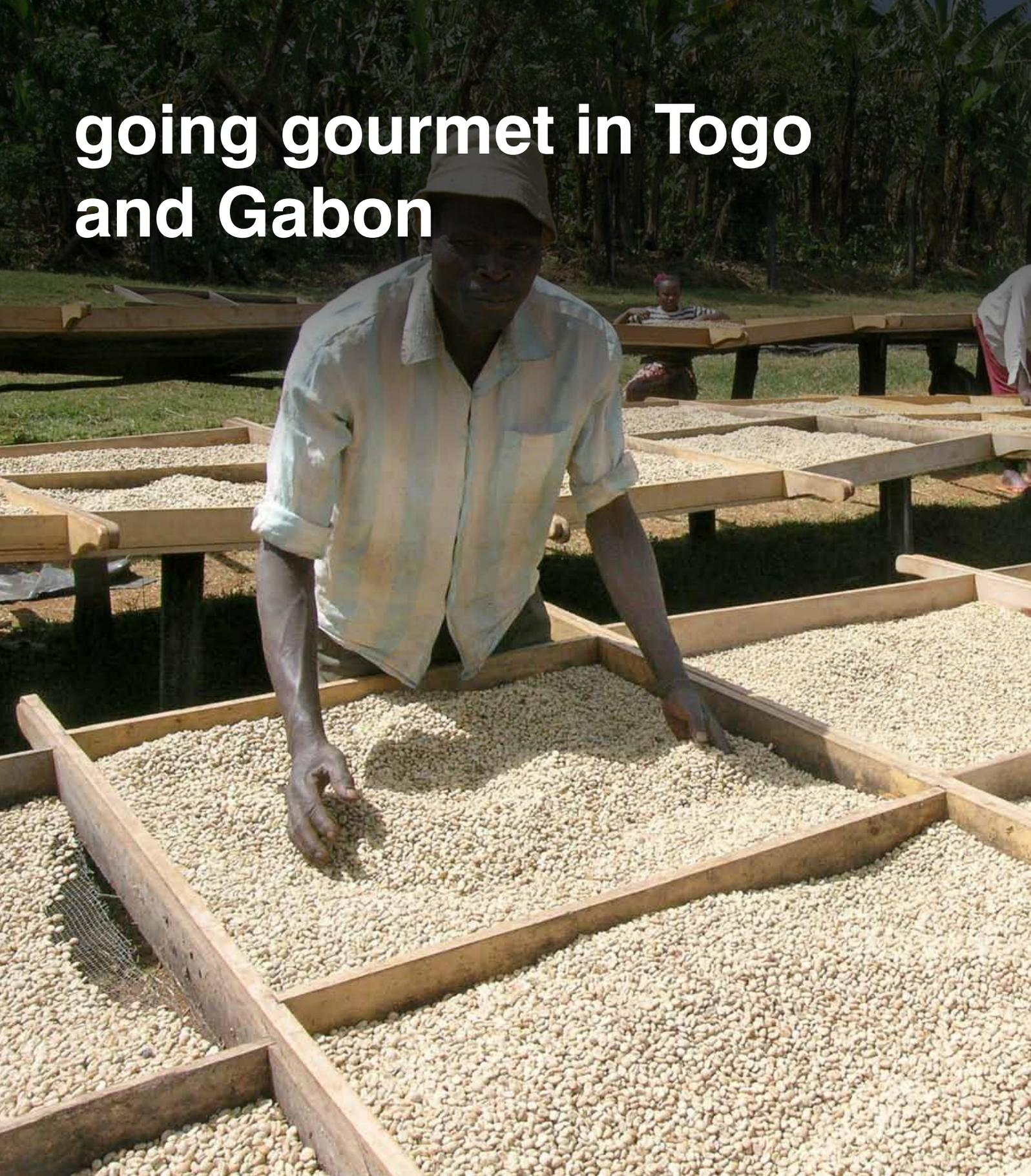
The majority of the world's seven billion people rely on 500 million smallholder farmers for food. CABI has been working with these smallholder farmers for over a century, providing practical support and offering scientific information.

In Togo and Gabon, we are helping smallholder farmers to improve the quality of their coffee and secure better prices in order to build sustainable livelihoods.

In Albania, we are helping apple farmers improve the yield and the quality of their produce through Integrated Pest Management and building the capacity of the agricultural education systems.

In Kenya and Tanzania, we are helping smallholder farmers to produce high-quality indigenous vegetable seeds which, in-turn, is improving nutrition and livelihoods in these countries.

going gourmet in Togo and Gabon





Africa has been losing an estimated US\$1.6 billion annually in foreign currency earnings because both the volume and value of coffee exports are declining, mainly from smallholder coffee farmers.

CABI is working in Togo and Gabon to help the coffee farmers improve their production and processing practices and develop the gourmet Robusta coffee market. By installing washing units and training the farmers to dry process their Robusta coffee, we have improved the quality of their coffee beans which, in turn, will enable them to achieve better prices at market.

In the years preceding the project, coffee production in both Gabon and Togo had declined substantially, depriving the smallholder farmers of their only source of income. Through the financial support from the Common Fund for Commodities and the International Coffee Organization, coupled with CABI's intervention on the ground, this is now changing.

Under the project, over 900 coffee farmers have been trained across the two countries in planting and post-production techniques and over 80,000 seedlings were given out. To ensure sustainability, seed gardens in Togo have been rehabilitated to provide on-going access to improved seedlings.

These activities, together with the training of significant numbers of agronomists, field trainers and coffee quality assessors, have given a real boost to the smallholder coffee farmers of Togo and Gabon.

Thanks to the work of the project, they have the skills and support they need to improve their coffee production and their livelihoods.

Donor

The Common Fund for Commodities (CFC)

Partners

Caisses de Stabilisation et de Péréquation (CAISTAB) in Gabon

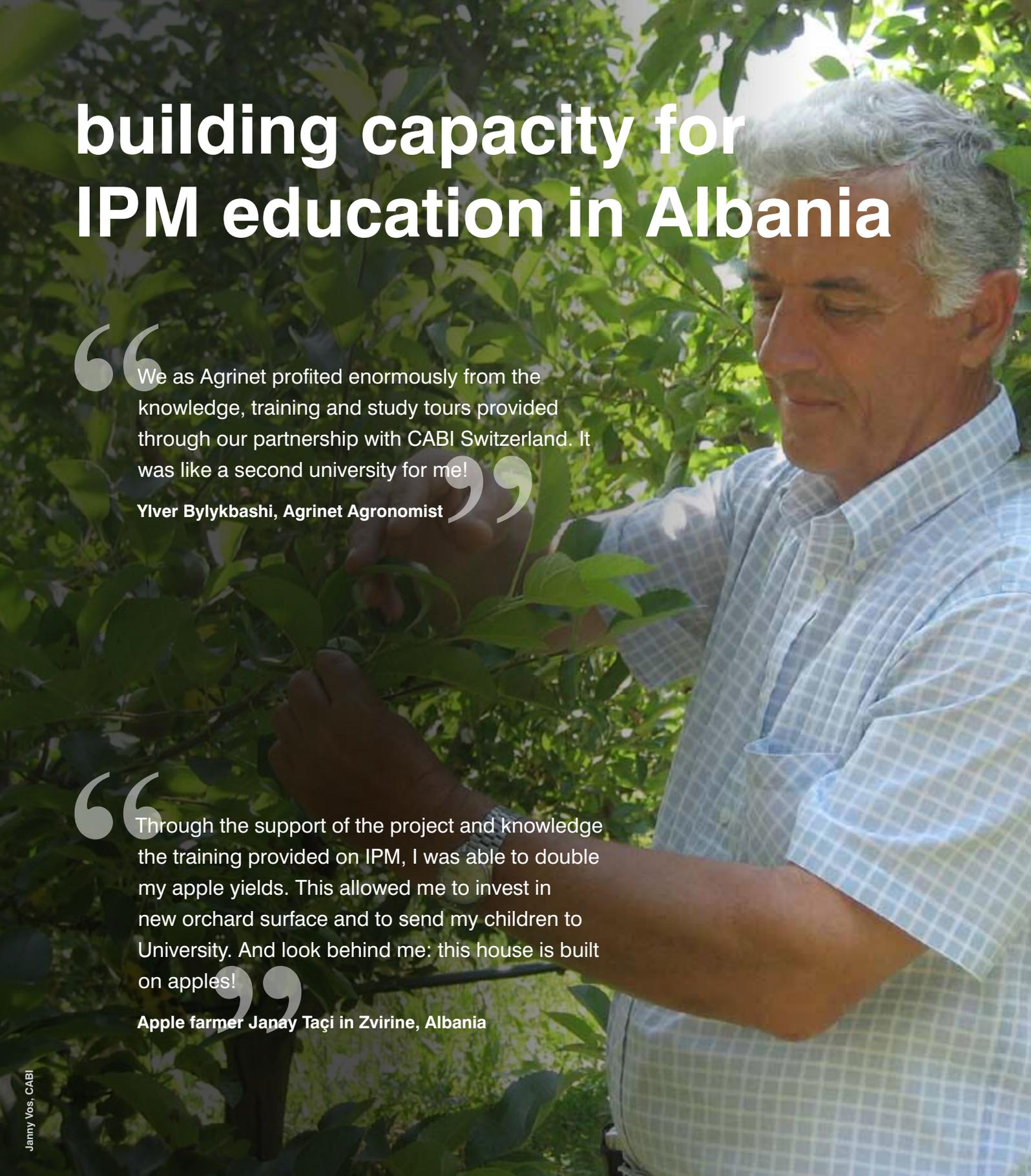
Comité de Coordination pour les Filières Café et Cacao (CCFCC) in Togo

Institut Togolaise de Recherche Agronomique (ITRA) in Togo

Ministry of Agriculture and Fisheries in Togo

The International Coffee Organization (ICO)

building capacity for IPM education in Albania



“ We as Agrinet profited enormously from the knowledge, training and study tours provided through our partnership with CABI Switzerland. It was like a second university for me!

Ylver Bylykbashi, Agrinet Agronomist”

“ Through the support of the project and knowledge the training provided on IPM, I was able to double my apple yields. This allowed me to invest in new orchard surface and to send my children to University. And look behind me: this house is built on apples!”

Apple farmer Janay Taçi in Zvirine, Albania



Recently, the fruit sector was made a top priority by the Ministry of Agriculture in Albania. Korca, a prime area for apple farming, became the focus for agricultural knowledge improvement. This was in response to the apple farmers' needs for information on how to increase productivity.

To support the Albanian farmers, CABI scientists partnered with students and professors at the University of Korca and the Agribusiness School in Korca to enhance their knowledge of Integrated Pest Management (IPM).

A comprehensive series of IPM lectures and training materials were developed for both the University and the Agribusiness School. The lectures have become an integral component of the newly established Masters course in Rural Development at the University. Following a recent agreement with the Ministry of Education, a condensed version will also be implemented at all Agribusiness schools in the country. Students finishing this IPM course will take on roles in the agricultural sector, applying the acquired knowledge on IPM, and thus having a huge impact on farming in Albania.

For members of the Apple IP Producer Club in Korca, a training series following the principles of Integrated Production (IP) was conducted by local partners focusing on pest monitoring, fertilization and rational pesticide use. The knowledge gained has allowed apple farmers to reduce damage rates of their produce, to get a higher price and to reduce their use of pesticides. **More than 100 apple growers and their families have already substantially improved their livelihoods and many more of the 2,500 apple farmers in the region can do so in the near future.**

This project enabled strong networking links and partnerships to be established. Young Albanian scientists received on-the-job training on IPM at CABI's centre in Switzerland and a national support network between Agrinet, the Centre for Agricultural Technology Transfer (CATT), the University of Korca and the Agribusiness School was set up. This will act as a platform for promoting regional implementation of IPM. Strong links were also set up to the Ministries of Agriculture and Education, as well as to apple traders.

Donor

Swiss National Science Foundation

Partners

The Centre for Agricultural Technology Transfer (CATT)

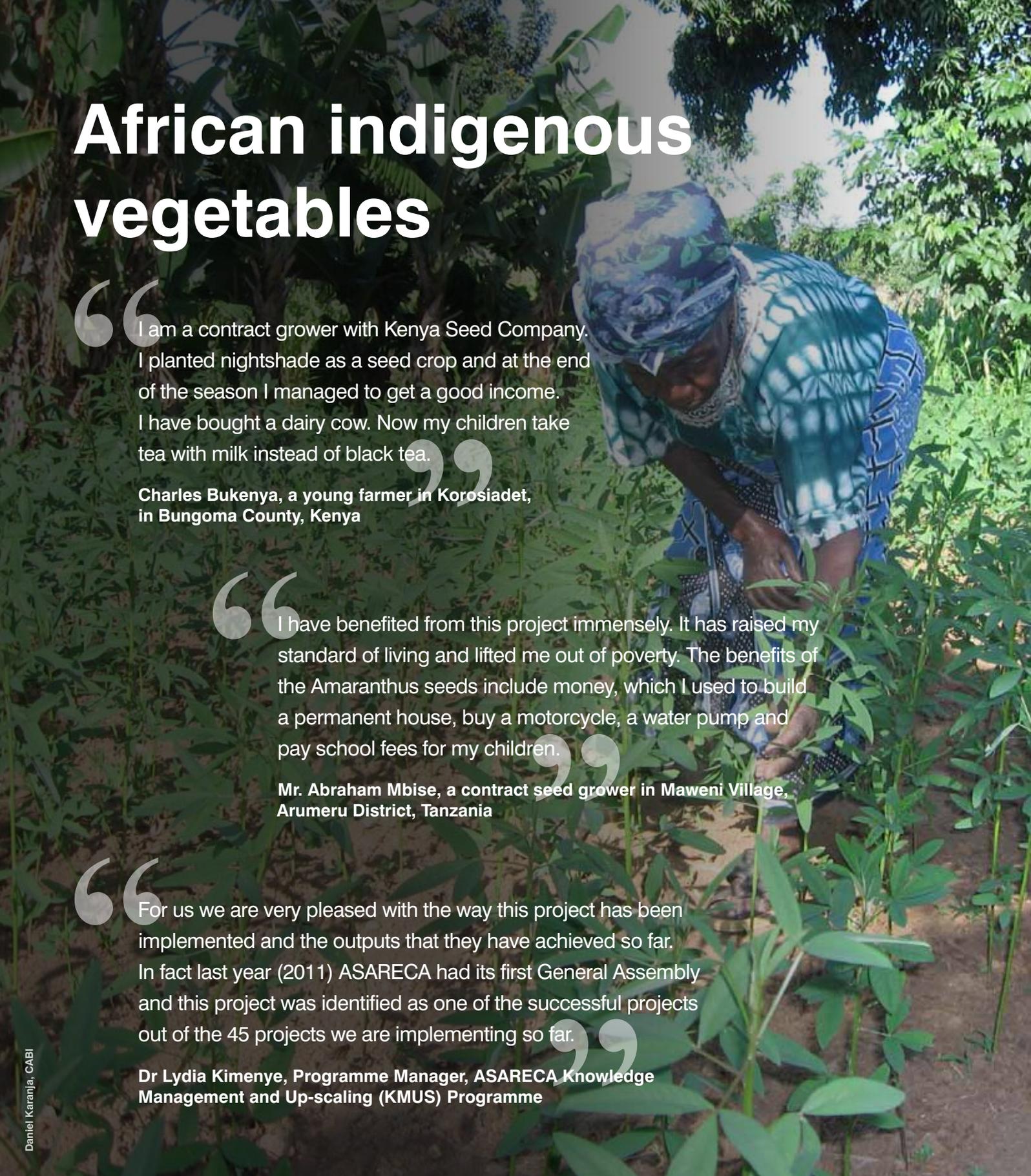
The University of Korca

Agribusiness School, Korca

Agrinet

Apple IP Producer Club, Korca

African indigenous vegetables



“ I am a contract grower with Kenya Seed Company. I planted nightshade as a seed crop and at the end of the season I managed to get a good income. I have bought a dairy cow. Now my children take tea with milk instead of black tea.”

Charles Bukenya, a young farmer in Korosiadet, in Bungoma County, Kenya

“ I have benefited from this project immensely. It has raised my standard of living and lifted me out of poverty. The benefits of the Amaranthus seeds include money, which I used to build a permanent house, buy a motorcycle, a water pump and pay school fees for my children.”

Mr. Abraham Mbise, a contract seed grower in Maweni Village, Arumeru District, Tanzania

“ For us we are very pleased with the way this project has been implemented and the outputs that they have achieved so far. In fact last year (2011) ASARECA had its first General Assembly and this project was identified as one of the successful projects out of the 45 projects we are implementing so far.”

Dr Lydia Kimenye, Programme Manager, ASARECA Knowledge Management and Up-scaling (KMUS) Programme



African Indigenous Vegetables (AIVs) are vital for fighting malnutrition in Africa as they are rich in Iron, Zinc and Vitamin A. They are also vital for food security and are a significant contributor to rural incomes, particularly for women smallholder farmers who sell them at local markets to supplement their income.

As demand for these vegetables increase, there is a lack of supply of good quality seed. The majority of farmers use seeds obtained from their own previous crops or from the open air market, which have problems of purity and poor germination.

To promote better access to high quality seeds among African smallholder farmers, the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) facilitated a partnership of organizations, led by CABI, to test farmer-led seed production models in Kenya and Tanzania.

As there is a huge demand for good quality seed for planting, smallholder farmers have grasped the business opportunity, with some evolving into certified seed producers themselves.

Under the project, smallholder farmers are learning about good management of the seed crops and linking to commercial companies who buy the seeds from them. Plant inspectors from the national institutions inspect the seed crops for uniformity and certification. Some farmers have developed seeds of such high quality that they have been able to certify and market them under their own brand, without selling to commercial seed companies, and have therefore generated higher returns.

Due to the success of this project, contract farmers in Kenya have increased their average earnings to US\$4,500 (up from US \$ 1,500) per year, resulting in significant improvements to their livelihoods. Plans are underway to upscale this work to Burundi, Rwanda and Uganda.

Donor

Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) Multi-donor Trust Fund (MDTF)

Partners

Kenya Agricultural Research Institute (KARI)-Kisii

Kenya Seed Company

Technology Adoption through Research Organization (TATRO)

The World Vegetable Centre – Regional Centre for Africa (AVRDC-RCA)

Horticultural Research and Training Institute Tengeru (HORTI-Tengeru)

Tanzania Official Seed Certification Institute (TOSCI)

INADES-Formation, Tanzania



protecting biodiversity

Despite our increasing knowledge of the world around us, the rich diversity of living species is being lost at a greatly accelerated rate. CABI contributes to conserving and keeping variety in the natural world by controlling Invasive Alien Species (IAS) and preserving the largest collection of fungi in the world.

In South East Asia, we are leading a major effort to conserve globally important forests and genetic diversity within Cambodia, Indonesia, Philippines and Vietnam.

In the Caribbean, we are mobilizing regional and country level support to fight a variety of IAS that threatens the natural diversity of the islands and the livelihoods of the people who live there.

In the UK, CABI has been researching the potential of reducing the environmental impact of the IAS, Himalayan Balsam, by using a host-specific fungus from the Indian Himalayas. If successful, the impact of this biocontrol effort will enable native vegetation to compete better and reduce the risk of flooding and erosion.

invasive species management in SE Asia





Invasive alien species (IAS) are, after habitat destruction, the second biggest threat to biodiversity worldwide. South East Asia overlaps or includes within its boundaries four of the world's 25 'biodiversity hotspots'. Despite occupying only 3% of the earth's surface, the region hosts 20% of all known species.

IAS are significantly affecting local and global biodiversity in South East Asia, invading and threatening forest habitats and the species that live in them. They are also indirectly affecting the livelihoods of millions of people who depend on forests for food, commodities and energy security.

Responding to the need for additional action against invasive species, CABI, as the Executing Agency, and the United Nations Environment Programme (UNEP), as the Implementing Agency, in collaboration with a host of partners, have developed a project largely funded by the Global Environment Facility (GEF).

The overall goal of the project is to conserve globally important forests, species and genetic diversity in the region, with the initial aim of enhancing the capacity of four countries – Cambodia, Indonesia, Philippines and Vietnam – to manage their IAS.

Clear plans and strategies are needed in order to coordinate the national and regional efforts that are required to tackle invasive species. To this end, the countries have established National Coordination Units and have started developing their National Invasive Species Strategies and Action Plans; National Communication Strategies; and Ecosystem Management Plans. Two training workshops have also been undertaken, one on forest restoration in Chiang Mai, Thailand, and the other on biological control in Bogor, Indonesia.

If successful, this project will contribute to the protection of natural habitats that are home to one fifth of all species known to man.

Donor

Global Environment Facility (GEF) country governments, and others

Partners

General Department of Administration for Nature Conservation and Protection, Ministry of Environment, Cambodia

Conservation and Rehabilitation Research and Development Centre; Forest and Development Agency; Ministry of Forestry, Indonesia

Foreign-Assisted and Special Projects Office; Department of Environment and Natural Resources (DENR), Philippines

Biodiversity Conservation Agency, Vietnam Environment Administration, Ministry of Natural Resources and Environment, Vietnam

ASEAN Centre of Biodiversity

SEAMEO BIOTROP

CSIRO, Australia

Kerala Forest Research Institute

Biosecurity Queensland

invasive species in the Caribbean



“Working with CABI’s Caribbean and Central American Regional Office has been very helpful in monitoring invasive species initiatives, strategies, meeting stakeholders and sharing experiences. It has been an open and mutually beneficial relationship that has led to concrete efforts in the eradication of feral donkeys and cats on Cabritos Island in the Dominican Republic. I am confident that this joint effort will lead to the protection of many globally endangered, vulnerable and endemic species.”

**Boris Fabres, Caribbean Regional Director
of Island Conservation**



Invasive Alien Species (IAS) are doing untold damage to the vulnerable marine, freshwater and terrestrial biodiversity of the Caribbean islands and threatening the livelihoods of the people who live there. CABI is coordinating a project to strengthen national capacities, develop a regional strategy and foster regional cooperation to tackle the problem.

These activities are important because invasive species require concerted national and regional efforts to resolve. Working in partnership with the five island nations of Bahamas, St Lucia, Jamaica, Dominican Republic, and Trinidad and Tobago, we are championing an Invasive Species Policy and Legislation Review for the region.

Significant investment has been made as part of the project on professional training in biocontrol and on increased prevention of new IAS introductions. This includes capacity-building for ports personnel who need to be able to identify invasive species on entry to the country. Intensive regional public awareness campaigns on the impact of IAS to Caribbean biodiversity and the economy are being run, including the set-up of a regional IAS website and dissemination of fact sheets, films and media articles.

The countries involved in the project are already seeing successes. Bahamas have completed the assessment of control measures on the periodic removal of lionfish in marine-protected areas. The Dominican Republic is completing a plan to remove feral donkeys and cats on Cabritos Island, which have invaded the island and severely impacted the population of native species. St Lucia is using IAS surveillance techniques to keep two islands with the rare St Lucia Whiptail Lizard IAS free. Trinidad and Tobago has instituted a surveillance programme for Frosty Pod Rot of Cocoa and quantified the economic and ecological impact of the Asian green mussel (*Perna viridis*). It is also currently evaluating biocontrol options for the Red Palm Mite in the Nariva Swamp, a wetland site of international importance.

All of these efforts, together with the policies and legislation being delivered through the project, will help conserve the biodiversity and improve the livelihoods of those living in the Caribbean.

Donor

United Nations Environment Programme (UNEP) – Global Environment Facility (GEF)

Partners

The Department of Marine Resources, Bahamas

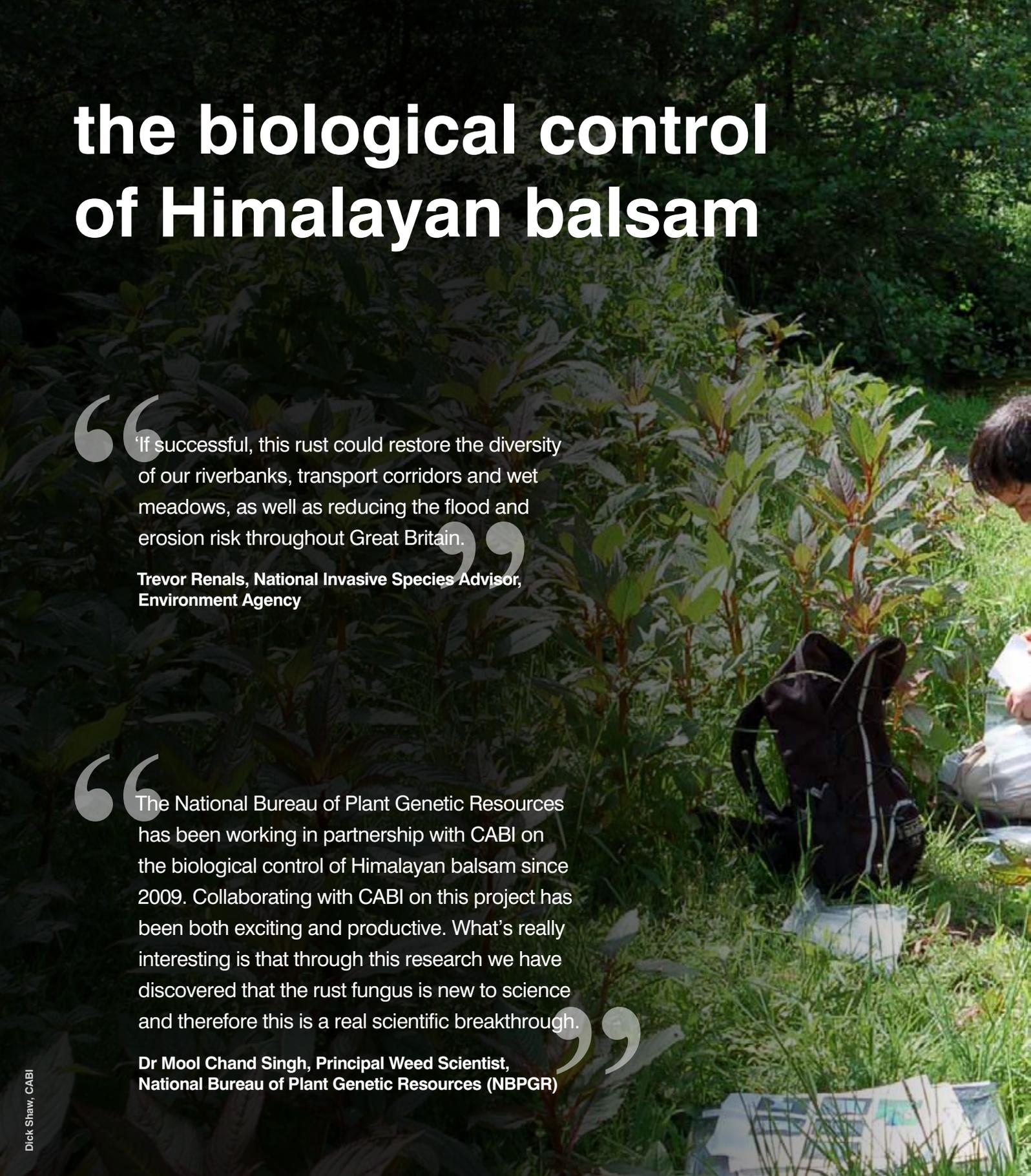
The Ministry of the Environment and Natural Resources, Dominican Republic

National Environment Planning Agency (NEPA), Jamaica

Forestry Department, Ministry of Sustainable Development, Energy, Science and Technology, Saint Lucia

Research and Fisheries Division, Ministry of Food Production, Trinidad and Tobago

the biological control of Himalayan balsam



“If successful, this rust could restore the diversity of our riverbanks, transport corridors and wet meadows, as well as reducing the flood and erosion risk throughout Great Britain.”

**Trevor Renals, National Invasive Species Advisor,
Environment Agency**

“The National Bureau of Plant Genetic Resources has been working in partnership with CABI on the biological control of Himalayan balsam since 2009. Collaborating with CABI on this project has been both exciting and productive. What’s really interesting is that through this research we have discovered that the rust fungus is new to science and therefore this is a real scientific breakthrough.”

**Dr Mool Chand Singh, Principal Weed Scientist,
National Bureau of Plant Genetic Resources (NBPGR)**



Non-native or alien invasive species can inflict irreversible damage to ecosystems with incurred costs measured in £billions.

Himalayan balsam (*Impatiens glandulifera*) is a highly invasive plant, which has spread rapidly throughout the UK, mainland Europe and North America since its introduction from the foothills of the Himalayas at the beginning of the 19th century. The plant flourishes along river banks and in damp woodland, meadows, and waste ground, inhibiting native plant growth, reducing biodiversity and leaving riverbanks bare and liable to erosion.

CABI has been researching the potential for reducing the environmental impact of this plant in the UK and Canada by using a co-evolved, host-specific rust fungus (*Puccinia* cf. *komarovii*), from the Indian Himalayas. **As a biological control agent, the rust fungus would spread through the infested area, attacking only Himalayan balsam, decreasing its occurrence and spread, enabling native vegetation to compete better, and important ecosystems to be restored.**

In 2010, in partnership with the National Bureau of Plant Genetic Resources (NBPGR), New Delhi, India, CABI collected and imported a rust fungus found on Himalayan balsam into our quarantine facility in the UK to undergo safety testing. To date, we have tested the rust against 56 carefully selected plant species to ensure that the rust only attacks Himalayan balsam.

Under quarantine conditions, we have proved that all of the spore stages observed on Himalayan balsam in the native range belong to the same rust species. Interestingly, it turns out that the rust species we collected is completely new to science, and therefore we plan to rename the species following the International Code of Nomenclature.

Scientists at CABI's offices in the UK and India, and in NBPGR, an institution under the Indian Council of Agricultural Research, have surveyed Himalayan balsam in the Indian Himalayas where they have evaluated the lifecycle and ecology of the rust. This information will help us understand how the rust fungus will behave on its host in the introduced range.

Donors

Department for Environment, Food and Rural Affairs (DEFRA)
Environment Agency
The Scottish Government
British Columbia Ministry of Forests, Lands and Natural Resource Operations

Partner

National Bureau of Plant Genetic Resources, an institute under the Indian Council of Agricultural Research (ICAR)



BANANA DIS

- 1) Banana bunch
- 2) Banana Xantho
- 3) Banana Xantho
- 4) Banana Xantho
- 5) Healthy/Confusin
distance
- 6) Panama disease
- 7) Black Sig
- 8) Fusar
- 9)

managing and sharing knowledge

Managing and disseminating knowledge and information are core components of CABI's activities. We provide information, through our world class publishing business.

For over 100 years, CABI has been publishing databases, online products and books. The income from our publishing activities helps to support development projects all over the world.

In China, our scientists are working together with our Chinese partners to develop sustainable management solutions for key crop pests and Invasive Alien Species (IAS). A Joint Laboratory has been set up to facilitate agricultural technology transfer from China to other developing countries, sharing knowledge across the world.

In Pakistan, we are implementing a project, in partnership with Pakistan's Directorate General of Agriculture Extension and Adaptive Research, to deliver knowledge direct to farmers using innovative technologies.

CABI-China joint laboratory

A woman with dark hair tied back is shown in profile, looking through a white and black microscope. She is wearing a dark-colored top. The background is a laboratory setting with various pieces of equipment and a window.

“Through the cooperation with CABI, Chinese institutions have improved their capability on agricultural research, knowledge dissemination and technology transfer and made great achievements. Working together with CABI scientists, Chinese scientists learnt international project management methods, gained valuable experience on implementation of international collaborative projects and achieved professional recognition in the international agricultural research community. A number of international conferences, workshops and scientific exchanges have been successfully organised by the Joint Laboratory, providing favourable platforms for capacity building and language training of young scientists and graduate students in China.”

From Chinese MoA's 'China-CABI collaboration report'



Having worked together with Chinese partners towards sustainable agriculture for over 30 years, the establishment of a Joint Laboratory with the Chinese Ministry of Agriculture (MoA) in 2008 was a major milestone in CABI-China collaboration.

The Joint Laboratory – located in the Institute of Plant Protection (IPP) of the Chinese Academy of Agricultural Sciences (CAAS), Beijing – functions as a platform for research collaboration and technology transfer and as a centre of excellence for training and scientific exchanges.

The Joint Laboratory has underpinned many projects since its establishment. Together, the partners work on control of invasive species, integrated pest management (IPM) techniques and development of biopesticides. Successful projects vary from increasing rice production in the Greater Mekong sub-region to facilitating a 500 strong congress, which brought together specialists from around the world to discuss key issues on invasive species.

With access to a huge network of Chinese scientists/experts, the Joint Laboratory is well positioned to facilitate agricultural technology transfer from China to other developing countries. For example, supported by DG DEVCO EuropeAid and the Chinese MoA, two of our latest projects are helping smallholder farmers in Laos and Myanmar as well as South West China to increase their rice and maize production sustainably through solutions suited to local conditions.

Through the work of the Joint Laboratory, we have developed alternatives to the chemical control of *Apolygus lucorum*, a key cotton pest in China that causes yield losses of 20-30% of the crop. Substantial progress has also been made on biological control of a number of invasive species originally from the region, including box tree caterpillar, brown marmorated stink bug and Canada thistle.

There was significant recognition in 2012 for both the Co-Directors of the Joint Laboratory, with Dr Ulrich Kuhlmann, CABI, being granted the Friendship Award, the highest Chinese honour for foreign experts, and Professor Wu Kongming, IPP-CAAS, becoming Academician of the Chinese Academy of Engineering and being promoted to Vice President of CAAS. This recognition is further evidence of the strength of the partnership that has been developed between CABI, the MoA and CAAS under the Joint Laboratory, and its work to support agriculture in the region.

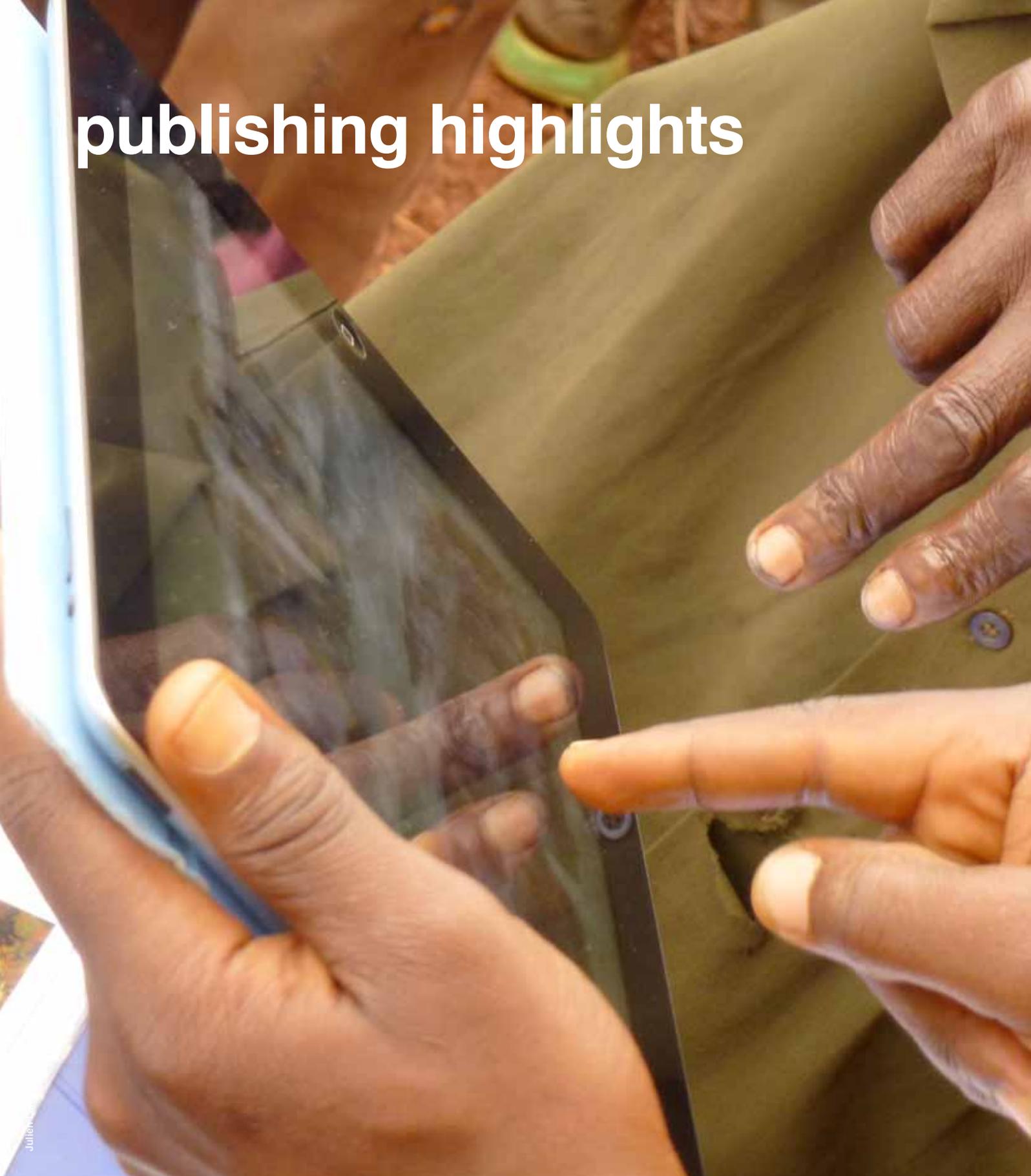
Donors

Chinese Ministry of Agriculture
EC – Development and Cooperation – EuropeAid
Department for International Development (DFID), UK

Partners

Chinese Ministry of Agriculture
Chinese Academy of Agricultural Sciences (CAAS) – Institute of Plant Protection (IPP)

publishing highlights





We see everyone who carries out academic and applied research into the life sciences as a partner in the quest to end poor nutrition, bad health and rural poverty. We support their work by making a major body of knowledge available through our books, online resources and world-renowned databases.

For example, every day, researchers discover relevant research published around the world through CAB Abstracts, the leading English-language abstracts information service for applied life science. It now gives scientists access to nearly 9 million database records from 1910 onwards as well as nearly 180,000 full text articles from around the world.

Researchers, policymakers and practitioners can also subscribe to a range of other subject-based databases, online resources, ebooks and compendia.

CABI Compendia are encyclopedic, mixed-media tools created in partnership with key organizations in each field, expertly produced, and packed with scientifically-validated information, images, maps and diagnostic and decision support content. These subject-specific tools cover animal health and production, aquaculture, crop protection, forestry and invasive species.

Also our books and ebooks contribute to the discussion and study of many important scientific areas – from agroforestry as an innovative solution to poverty, malnutrition and environmental degradation, to the effective control of nematodes in crop protection, animal husbandry and the management of invasive species.

CABI is continually investigating how to make more information accessible to more people through more devices, in more formats. **We help librarians to make their collections work harder in a time of reduced budgets, we help policymakers obtain accurate verified data, and we seek ways to get information to people working in the field around the globe.**

These developments benefit New York port officials trying to keep invasive species from damaging their country's ecosystem, professionals investigating zoonotic diseases in India, and rural farmers growing rice in Africa.

developing and establishing ICT solutions in South Asia



“ This web-based automation of the present reporting system will make it more productive and effective; and will ensure availability, accessibility and accountability of the agriculture extension agents.

Timely decision making through adoption of this system will be increased in addition to strengthening farmer-extension linkages. I am confident this CABI-Extension Service coordination will change the fate of the over 4 million poor rural farmers of Punjab.

Dr. Muhammad Anjum Ali, Director General, Directorate General of Agriculture Extension and Adoptive Research



Pakistan's economy relies on agriculture, which contributes 24% of its GDP and employs 48% of its people. Over half of the country's total cultivated land is in the Punjab region, which has fertile soils and a relatively well developed irrigation system.

About 4 million farmers in this region rely on government extension officers as the main source of agricultural information. However, the officers often have difficulty reaching all the farmers due to the geographical spread of the region. If rural smallholder farmers are to succeed, they need timely access to the latest information on crops, weather and market prices.

The E-Zaraat project, in partnership with the Directorate General of Agriculture Extension and Adaptive Research, Pakistan, is carrying out research and developing Information and Communication Technology (ICT) solutions to support the extension services to get these farmers the information they need, when they need it. The project has mapped out their specific knowledge requirements and identified technologies that can be used to process and deliver this knowledge, including through the use of mobile phones.

The project is being piloted in three districts in the Punjab region: Vehari, Sialkot and Sargodha. To date, a baseline survey has been completed, documenting the profile of farmers, their information needs, current agricultural practices and women's role in the rural economy.

A web application for data entry and analysis, and a mobile application for data collection from the field have been developed; and a call centre has been deployed to provide extension services to the farmers.

If successful, the project will create better linkages between extension experts and the farmers, in order to help them produce better crops that can fetch better prices. E-Zaraat will enable a more on-demand extension advisory model that will help deliver scarce extension resources to where they are most needed.

Donor

Department for International Development (DFID), UK

Partner

Directorate General of Agriculture and Adoptive Research, Punjab

“For me, CABI captures the essence of partnership. It does this through its structure and its people. Key development issues are strategically managed and the solutions are implemented locally through CABI’s Regional Centres. CABI not only facilitates partnerships between global institutions but also fosters the development of long-term partnerships between countries and people. CABI is an ideal place for people to learn the art of thinking globally and acting locally.”

Sharbedee Banejee, Global Director-Mobile

“In my culture, they say a single tree does not make a forest. We work with partners to collect information on crop pests. We believe access to agricultural information is a very powerful tool for farmers. That is why we set up the Plantwise Knowledge Bank, to provide farmers across the globe with relevant and high quality agricultural information. We have partnered with government ministries, agricultural institutions, community based organizations, the private sector, extension workers, researchers and farmers, to make this possible.”

Mary Lucy Oronje, Content Development Assistant, PW Knowledge Bank



CABI's global reach

CABI's membership consists of **48 countries**, representing over two-thirds of the world's population. We have been working with our members for over a century, employing our scientific expertise to solve some of the world's greatest challenges in agriculture and the environment.

With 400+ staff, working in **19 locations** across the globe in collaboration with a wide range of partners, CABI continues to deliver high impact projects that support farmers, improve food security and protect biodiversity.

By sharing knowledge, CABI has been able to create sustainable livelihoods for smallholder farmers across continents and contribute to a sustainable future for the earth's biodiversity. CABI's impact, as a leading inter-governmental organization that is tackling emerging global challenges that threaten livelihoods and fragile ecosystems, continues to grow.





Mr John Ripley



Dr Trevor Nicholls



Mr Ian Barry



Dr Lutz-Peter Berg



Mr Philip Walters



Dr Vibha Dhawan



Mr Andrew Bennett



Dr Don Merino



Professor Emmanuel
Owusu-Bennoah



Mr Roland Dietz

CABI Board

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

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

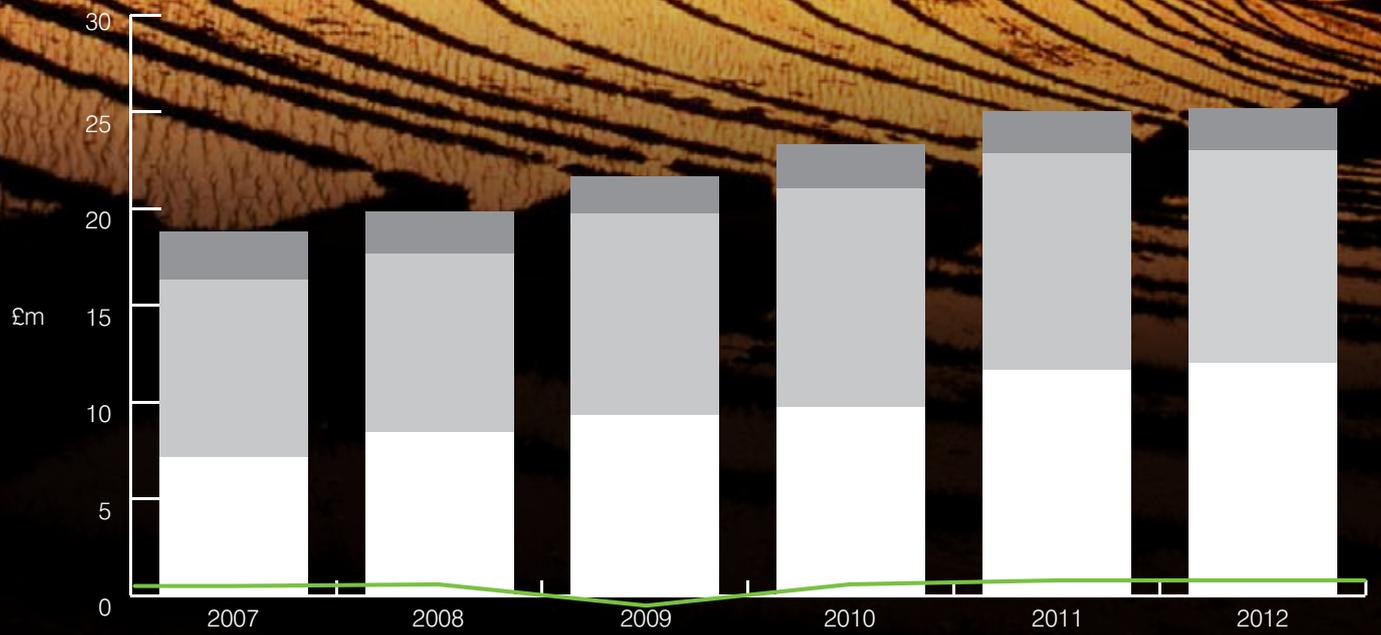
Representatives from each member country meet to monitor CABI's affairs and implement Review Conference resolutions. The council approves the annual budget, the admission of new members and key policy decisions.

Liaison Officers

Each member country has at least one liaison officer. Their role is to provide a crucial link between their country and CABI.

governance

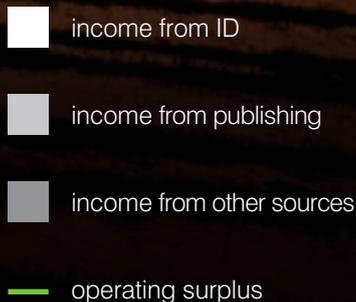
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BAHAMAS	Mr. Anthony McKinney, Permanent Secretary, Ministry of Agriculture and Marine Resources
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BARBADOS	Mr Lennox Chandler, Acting Permanent Secretary, Ministry of Agriculture, Food, Fisheries and Water Resource Management
BERMUDA	Dr Fred Ming, Department of Environmental Protection, Bermuda Government
BOTSWANA	Dr Pharoah Mosupi, Director of Agricultural Research, Common Service Division, Ministry of Agriculture
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BRUNEI DARUSSALAM	Hjh Aidah binti Haji Mohd Hanifah, Acting Director, Dept of Agriculture, Ministry of Industry & Primary Resources
BURUNDI	Mr. Nahimana Dieudonne, Director General, Institut des Sciences Agronomiques du Burundi (ISABU)
CANADA	Dr Gary Whitfield, Director of Research and Development, Agriculture and Agri-Food Canada
CHILE	Dr Andres France, Fitopatólogo, Instituto de Investigaciones Agropecuarias (INIA)
CHINA	Dr Zhang Lubiao, Director General, Dept. International Co-operation Chinese Academy of Agricultural Sciences
COLOMBIA	Dr Fernando Gast, Director, Cenicafe-FNC Km
COTE D'IVOIRE	Dr Yte Wongbe, Directeur Général, CNRA
CYPRUS	Mrs Egly Pantelakis, Permanent Secretary, Ministry of Agriculture, Natural Resources & Environment
DPR KOREA	Mr. Chae Chun Sik, Director, International Exchange of Science and Technology Centre, Academy of Agricultural Sciences (AAS)
GAMBIA	Dr Lamin Jobe, Director of Research, National Agricultural Research Institute (NARI)
GHANA	Dr Abdulai Baba Salifu, Director-General, CSIR
GRENADA	Mr Daniel Lewis, Chief Agricultural Officer, Ministry of Agriculture, Forestry & Fisheries
GUYANA	Dr Oudho Homenauth, Director, National Agricultural Research and Extension Institute
INDIA	Dr Rajesh Ranjan, Director (International Cooperation), Ministry of Agriculture, Dept of Agricultural Research & Education (DARE)
JAMAICA	Mr Donovan Stanberry, Permanent Secretary, Ministry of Agriculture & Land
KENYA	Dr Ephraim A. Mukisira, Director, Kenya Agricultural Research Institute
MALAWI	Dr Alfred P Mtukuso, Director of Agricultural Research Services, Department of Agricultural Research Services, Ministry of Agriculture and Food Security
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UK	Alasdair Swift, Research and Evidence Division, DFID
VIETNAM	Dr Nguyen Van Tuat, Vice President, Vietnam Accademy of Agricultural Science (VAAS)
ZAMBIA	Mr Moses Mwale, Director of ZARI, Ministry of Agriculture & Cooperatives
ZIMBABWE	Mrs Danisile Hikwa, Principal Director, Department of Research and Specialist Services, Ministry of Agriculture



financials

2012 was another successful year for CABI with operating surplus increasing by 7% (2011:28%) to £710k (before the designated fund allocation). These results continue the trend of steady improvement in financial performance. CABI has maintained this momentum at the start of 2013 and, with a strong funding pipeline and solid subscription base, is well placed to continue this improving performance.

Total revenue grew by 1% in the year with growth coming from International Development project income. In tough trading conditions, Publishing income declined by 2% in the year (after being flat in 2011). This result has given further urgency to the need for reinvigorating the Publishing product portfolio. After growing by 20% in 2011, International Development was able to consolidate those gains in 2012 and grow by 3%. The main driver of growth over the last couple of years has been the Plantwise programme, which has attracted considerable interest from donors and continues to do so.



statement of comprehensive income for the year ended 31 december 2012

(excluding designated fund)

	2012	2011
	£'000	£'000
continuing operations		
income		
sales and project income	23,017	22,867
member contributions	934	940
CABITAX recovery	1,101	1,099
miscellaneous income	130	118
	25,182	25,024
expenditure		
staff costs	(7,372)	(7,647)
direct project costs	(9,631)	(9,578)
production	(2,968)	(2,967)
facilities and maintenance	(1,477)	(1,455)
sales and distribution	(632)	(519)
travel	(651)	(613)
depreciation and leasehold amortisation	(655)	(643)
consultants, freelancers	(399)	(341)
restructuring costs	(222)	(257)
provision for arrears of member country contributions	(35)	(30)
associated company profits	34	42
other costs	(486)	(356)
	(24,494)	(24,364)
operating surplus before interest	688	660
interest receivable	22	4
interest payable	-	(3)
	22	1
operating surplus for the year	710	661
other comprehensive income/(deficit)		
cash flow hedges	194	(183)
movement between funds	(150)	-
actuarial losses on defined benefit pension schemes	(2,820)	(1,245)
	(2,776)	(1,428)
total comprehensive deficit for the year	(2,066)	(767)

statement of financial position for the year ended 31 december 2012

	2012	2011
	£'000	£'000
assets		
non-current assets		
properties – held at revalued amounts	9,140	9,349
plant and equipment – held at cost	1,196	1,032
intangibles – held at cost	143	106
investments accounted for using the equity method	321	287
	<u>10,800</u>	<u>10,774</u>
current assets		
inventories	1,561	1,729
trade and other receivables, net of provisions:		
- sales receivables	1,903	1,196
- sums owing by project sponsors	1,006	1,014
- from member countries	115	97
other financial assets:		
- derivative financial asset	47	-
- cash and equivalents	7,495	5,189
other receivables	972	886
	<u>13,099</u>	<u>10,111</u>
total assets	<u>23,899</u>	<u>20,885</u>
equity and liabilities		
equity		
revaluation reserve	(1,921)	(1,921)
cash flow hedges	(47)	147
designated fund	(250)	(150)
accumulated fund	(3,675)	(5,935)
	<u>(5,893)</u>	<u>(7,859)</u>
liabilities		
non-current liabilities		
post-employment benefits	(4,989)	(2,169)
	<u>(4,989)</u>	<u>(2,169)</u>
current liabilities		
sales income received in advance	(3,259)	(3,180)
member country contributions in advance	-	(5)
sums held on behalf of project sponsors	(7,542)	(4,916)
trade and other payables:		
- trade payables	(545)	(675)
- other payables	(1,671)	(1,934)
financial liabilities		
- derivative financial liability	-	(147)
	<u>(13,017)</u>	<u>(10,857)</u>
total liabilities	<u>(18,006)</u>	<u>(13,026)</u>
total equity and liabilities	<u>(23,899)</u>	<u>(20,885)</u>

statement of cash flows for the year ended 31 december 2012

	2012	2011
	£'000	£'000
cash flows from operating activities		
cash generated from continuing operations	2,931	3,282
interest paid	-	(3)
net cash generated from operating activities	2,931	3,279
cash flows from investing activities:		
payments to acquire tangible fixed assets	(637)	(327)
payments to acquire intangible assets	(65)	(112)
loss on disposal of property, plant, equipment	55	-
interest received	22	4
net cash used in investing activities	(625)	(435)
net increase in cash and cash equivalents	2,306	2,844

NOTES TO THE CASH FLOW STATEMENT

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

operating surplus before interest	638	660
depreciation charges	655	643
share of associated company profits	(34)	(42)
decrease in inventories	168	74
(increase)/decrease in trade and other receivables	(717)	679
increase/(decrease) in trade and other payables	(393)	563
increase in income in advance	2,700	791
(increase) in other receivables	(86)	(86)
	2,931	3,282

(ii) movement in net cash during the year

net cash at 1 January	5,189	2,345
net cash at 31 December	7,495	5,189
movement in net cash during the year	2,306	2,844

(iii) analysis of movement in net cash

	cash flows	31.12.2012
	£'000	£'000
cash at bank in hand and in transit	2,306	7,495
net cash	2,306	7,495

thank you

CABI's work is supported by the contributions of our member countries, governments, corporations, international, regional and local organizations. In 2012, some of our major donors and sponsors included:

international

Asian Development Bank (ADB)
Bill & Melinda Gates Foundation
Common Fund for Commodities (CFC)
European Commission (EC)
Global Environmental Facility (GEF)
International Fund for Agricultural Development (IFAD)
Standards and Trade Development Facility (STDF)
World Bank (WB)
World Trade Organization (WTO)
Rabobank

national and regional

Australia Australian Centre for International Agricultural Research (ACIAR) Department of Agriculture, Fisheries and Forestry (DAFF)

Brunei Government of Brunei Darussalam

Canada Agriculture and Agri-Food Canada (AAFC)
International Development Research Centre (IDRC)
Ministry of Forests and Range, British Columbia Provincial Government

China Government of China

Ireland Irish Aid

Malaysia Malaysian Agricultural Research and Development Institute

Netherlands Ministry of Foreign Affairs (DGIS)

Pakistan Government of Pakistan
Government of Punjab

Switzerland Swiss Agency for Development and Cooperation (SDC)

UK Department for International Development (DFID)
Department for Environment, Food and Rural Affairs (Defra)
Environment Agency (EA)

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

CABI staff publications in 2012

1. **Abram, P.K., Haye, T.**, Mason, P.G., Cappuccino, N., Boivin, G. and **Kuhlmann, U.** (2012) Identity, distribution, and seasonal phenology of parasitoids of the swede midge, *Contarinia nasturtii* (Kieffer) (Diptera: Cecidomyiidae) in Europe. *Biological Control* 62(3), 197–205.
2. **Abram, P.K., Haye, T.**, Mason, P.G., Cappuccino, N., Boivin, G. and **Kuhlmann, U.** (2012) Biology of *Synopeas myles*, a parasitoid of the swede midge, *Contarinia nasturtii*, in Europe. *Biocontrol* 57, 789–800.
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12. **Bridge, P.D.** and Spooner, B.M. (2012) Non-lichenized Antarctic fungi: transient visitors or members of a cryptic ecosystem? *Fungal Ecology* 5, 381–394.
13. Broughton, R., **Buddie, A.G., Smith, D.** and **Ryan, M.J.** (2012) The effect of cryopreservation on genomic stability in strains of the fungus *Trichoderma*. *CryoLetters* 33(4), 299–306.
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15. **Cannon, P.F.** (2012) *Lophiostoma arundinis*, *Lophiostoma caudatum*, *Lophiostoma caulium*, *Lophiostoma fuckelii*, *Lophiostoma macrostomoides*, *Lophiostoma macrostomum*, *Lophiostoma semiliberum*, *Lophiostoma subcorticale*, *Lophiostoma viridarium*, *Lophiostoma vagabundum*. *IMI Descriptions of Fungi and Bacteria*, set 191, sheets 1901–1910.
16. **Cannon, P.F., Buddie, A.G., Bridge, P.D.**, de Neergaard, E., Lübeck, M. and Askar, M.M. (2012) *Lectera*, a new genus of the Plectosphaerellaceae for the legume pathogen *Volutella colletotrichoides*. *Myckeys* 3, 23–26.
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staff publications

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contact CABI

Africa

Kenya

CABI, ICRAF Complex
United Nations Avenue, Gigiri
PO Box 633-00621
Nairobi, Kenya
T: +254 (0)20 7224450/62
E: africa@cabi.org

Ghana

CABI, CSIR Campus
No. 6 Agostino Neto Road
Airport Residential Area
P. O. Box CT 8630, Cantonments
Accra, Ghana
T: : +233 (0) 302 797 202
E: westafrica@cabi.org

Americas

Brazil

CABI, UNESP-Fazenda Experimental
Lageado, FEPAF (Escritorio da CABI)
Rua Dr. Jose Barbosa de Barros 1780
Fazenda Experimental Lageado
CEP:18.610-307
Botucatu, San Paulo, Brazil
T: +5514-38826300
E: y.colmenarez@cabi.org

Trinidad & Tobago

CABI, Gordon Street, Curepe
Trinidad and Tobago
T: +1 868 6457628
E: caribbeanLA@cabi.org

USA

CABI, 38 Chauncey Street
Suite 1002, Boston,
MA 02111, USA
T: +1 800-552-3083 (Toll free)
E: cabi-nao@cabi.org

Asia

China

CABI, Beijing Representative Office
Internal Post Box 56
Chinese Academy of Agricultural Sciences
12 Zhongguancun Nandajie
Beijing 100081, China
T: +86 (0)10 82105692
E: china@cabi.org

India

CABI, 2nd Floor, CG Block,
NASC Complex, DP Shastri Marg
Opp. Todapur Village, PUSA
New Delhi – 110012, India
T: +91 (0)11 25841906
E: cabi-india@cabi.org

Malaysia

CABI, PO Box 210,
43400 UPM Serdang
Selangor, Malaysia
T: +60 (0)3 89432921
E: cabisea@cabi.org

Pakistan

CABI, Opposite 1-A,
Data Gunj Baksh Road
Satellite Town, PO Box 8
Rawalpindi-Pakistan
T: +92 (0)51 9290132
E: sasia@cabi.org

Europe

Switzerland

CABI, Rue des Grillons 1
CH-2800 Delémont,
Switzerland
T: +41 (0)32 4214870
E: europe-CH@cabi.org

UK

CABI, Nosworthy Way
Wallingford, Oxfordshire
OX10 8DE, UK
T: +44 (0)1491 832111
E: corporate@cabi.org

CABI, Bakeham Lane

Egham, Surrey
TW20 9TY, UK
T: +44 (0)1491 829080
E: microbiologicalservices@cabi.org
E: cabieurope-uk@cabi.org

