

ANNEX 7

CABI Science Review: Summary Report on Visit to East Asia Centre, Beijing 17-19 January 2015

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Introduction

This is a summary report from our visit. It does not contain details of our extensive discussions, but captures the main points and conclusions relevant to the TORS of the CABI Science Review. Over our two days, we met with the staff of the East Asian Centre and visited the Joint Laboratory which CABI operates with Institute of Plant Protection (IPP) of the Chinese Academy of Agriculture Science (CAAS). We also visited the laboratories of IPP and met with the International Cooperation Department of CAAS and members of the CAAS agricultural economics department. We are most grateful to Dr Zhang Feng and his CABI team for the excellent organization of our trip and the opportunity for detailed discussions.

CABI established an office in Beijing in 2002. In 2006, it merged Malaysia and China office to establish CABI Southeast & East Asia. In 2011, CABI decided to split the office into CABI Southeast Asia and CABI East Asia regional centre. Originally an activity focused on CABI information services, a science programme has grown steadily. The East Asia Centre is now led by Dr Feng who joined CABI following postdoctoral research at the Swiss Centre, to develop a science programme. The Centre's offices are housed in the Chinese Academy of Agricultural Sciences (CAAS) International Centre along with other international organizations (including CGIAR Centres). In 2009, the Centre established a Joint Laboratory with the CAAS Institute of Plant Protection (IPP) where it undertakes its scientific work. It has modest facilities there for biological research on pests, natural enemies and pathogens, and for basic work on semiochemicals.

The Research Team

Scientific research in the Centre is led by Dr Feng. He runs the Centre, develops the science programme by writing or supporting proposals for new projects, and executes project work as well. He has had considerable success in building up activities at the Centre, where he is assisted by Dr. Li Hongmei, also following postdoctoral work at the Swiss Centre and a small team of young researchers, mostly with PhDs, from Chinese institutions. A key to the Centre's success to date is the combination of a local Chinese research team with a broader, distinctive CABI research skill base, gained by Drs. Feng and Li from postdoctoral work in the Swiss Centre. Projects led or supported by the Swiss Centre have been critical to the East Asia Centre's growth.

The CABI Science Programme

The Centre hosts a range activities, including support to information projects and Plantwise, as well as a scientific research programme. The research programme at the Centre has grown to its present level by accumulating and overlapping a diverse portfolio of small projects, which funds Dr Feng part-time and support a growing number of new, young researchers.

The current, and likely future portfolio of scientific research at the Centre is based on three distinct kinds of projects

1. Sub-contractual research projects for other governments, largely North American and European, led through other Centres, notably Swiss and UK. These involve largely ecological, behavioural and biological control research on pests which are exotic in the funding countries, such as work on stink bugs and fruit flies for North American and Europe, respectively. This work has elements of “discovery science” appropriate for research publications.
2. Contracts funded by development agencies like DFID and SDC for work in other countries in the region. This focuses on pest management, such as the successful programme in DRPK, and involves the application of science, rather than the generation of new knowledge, appropriate for publications in development or application-focused journals.
3. Projects for and in China, such as the work on *Trichogramma* for rice stem borer. These presently are few and involve field work on biological control augmentation. This is also applied work, but has the potential to be well-structured scientifically, e.g. replicated trials with controls, in collaboration with local agricultural extension and research partners.

Collaboration with IPP

The Joint Facility, established in 2009, provides a platform and some funding to develop joint research between CABI and IPP scientists. IPP has enjoyed very substantial recent investment, which it has focused particularly on molecular and genomic aspects of agricultural research on plants, pests and pathogens, and on modelling, attracting highly regarded experts, including Chinese expatriates. The CABI expertise on pest and natural enemy biology appears distinctive and complementary in this context, and while the local Centre team is small and quite young, it is backed up by CABI research strength in Swiss and UK Centres that makes it credible in comparison to Chinese expertise in IPP.

IPP has a strong culture of valuing publication in international, peer-reviewed journals. It does not appear focused on, or skilled in, the application of research in farmers fields, where CABI has strength, although this strength in CABI is probably less valued by IPP than by the Ministry of Agriculture, who are the partners for CABI's Plantwise work.

Challenges and opportunities facing the Centre's science programme

The Centre faces two major challenges to building a science programme which may be a feature of any relatively small CABI Centre that has embarked on a research programme.

The first is maintaining and growing a research programme that creates a critical mass of research activity on topics that can generate high quality publications in international journals, while delivering contractual obligations and researchers that gains a reputation for international standard science. The second is to develop a team of scientists with outstanding skills who can develop an international reputation and portfolio of publications. There are potential approaches to achieving both, some of which the Centre is already exploring.

Before discussing these, it is important to address whether the Centre should aim to have a science programme that is self-sustaining intellectually and financially, or to be part of a larger CABI science

programme working closely with other Centres, with researchers, project and financial targets shared across Centres. Tasked by CABI with a target of financial self-sufficiency, Dr. Feng is strongly motivated to achieve the former plan, but the latter plan may be a more realistic and rapid path to a strong science programme, particularly under the pressures created by expectations in IPP. This integrated science programme is also how most current work at the Centre has developed and is currently run, with strong involvement of Swiss and UK researchers. It also exploits and builds on CABI's USP, relative to its Chinese hosts, to draw on research expertise from across the world and to undertake research globally.

Developing a scientific research programme

Developing a critical mass of projects in the three areas identified above cannot be done by the Centre's science team alone. Other CABI Centres must assist in development of projects for Europe and North America, and donor-funded development projects for other Asian countries and Africa. In doing the latter, CABI may want to focus development of donor-funded research on problems and areas of interest to China and CAAS itself. Two areas highlighted by the Centre are projects in the Central Asia "silk road" countries and Burma, and in Africa, where the opportunities created by China's special focus on African partnerships have only started to be explored. Bringing IPP researchers and Chinese expertise into CABI led projects in these regions, may improve Chinese commitment to and interest in the Centre. Links between the East Asia Centre and the Pakistan and African Centres could be a valuable part of this strategy.

Development of projects for Europe and North American governments must be developed in partnership with CABI European Centres. To date, they have sometimes been European projects contracted to or facilitated by the East Asia Centre, but the potential for them to be more "joint ventures" should be developed.

Project work for North America and Europe, and for Asian and African development work will always have a contractual nature where the prospect of generating original, international-level research publications will always be rather limited. Projects with and for China may be a better focus for such a research and publication effort. With respect to projects for and with China, CABI may wish to identify and focus on where it has distinctive skills relative to its IPP partners, e.g. in plant pest and natural enemy biology and biological control.

But it may also consider developing a more formal research programme in China associated with applied work of less interest to IPP than to MOA, including research opportunities created by Plantwise. Such research, to be of international standard, would need to have a strong socioeconomic dimension, and very credible design and evaluation so that interventions could be convincingly evaluated with strong statistical power and counterfactuals. An example would be, for instance, measuring the impact of a pest management intervention through Plantwise in terms of farmer adoption, changes in pest damage, economic benefits and behaviour change, replicated with controls.

This opportunity to turn its development activities into high class international science is of course shared by all tropical CABI Centres where Plantwise is active. In China and elsewhere, Plantwise also creates an opportunity to identify new and important pest problems for research, and to gather the

data to justify investment in research on them, thereby driving further scientific research in and for China.

Finally, the Centre provides CABI generally with an opportunity to engage Chinese research excellence in its traditional areas and others, such as agricultural economics. In thinking more about future research expansion into social sciences, molecular biology, etc., CABI should not be too Euro-focused but carefully examine whether Chinese expertise might be better and more appropriate, e.g. for development projects. For instance, we met an excellent agricultural economics team at CAAS who may prove good partners in developing CABI's capacity for socio-economic research.

Developing a scientific research team

With respect to the second challenge of building a team of skilled scientists, this will depend of course on a steady stream of research project funding, but it may also require additional support. It is clear that the expertise and reputation gained by more senior scientists at the Centre during research at the Swiss Centre has been critical to the Centre's success so far, and this could be extended by giving younger staff opportunities for original, mentored research in other CABI Centres.

The posting of Dr Stefan Toepfer to the Centre and the mentorship provided by Mr Urs Wittenwiler exemplifies an excellent CABI strategy to strengthen the science at the Centre and support the scientific development of junior staff. Unfortunately, funding has not been sufficient for Dr Toepfer to spend substantial time as yet working in China with Centre researchers. However, a balanced strategy of taking young researchers out to research-intense Swiss and UK Centres, and bringing senior researchers from there to the East Asia Centre would seem the best approach to accelerate development of a skilled, international level science team.

Also with respect to staffing, the Centre is challenged to offer competitive salaries and career prospects for locally recruited young scientists, relative to IPP and other competitors. This may require consideration – the experience of the CGIAR in recruiting and retaining national and international scientists may be of value here. But perhaps more importantly, the opportunity for young Centre staff to gain work experience in other CABI centres, and to be mentored in China by senior staff from those Centres, may have the additional benefit of helping the East Asia Centre to recruit and retain good local researchers. Making staffing at the Centre more international and mobile will also address the desire in IPP for CABI to have strong international scientists in the Joint Laboratory.

Evaluation and the Centre's science programme

Finally, a comment on monitoring and evaluation, a particular topic highlighted in the Review TORs. Projects in the Centre are contractual and often involve delivery of a particular output as part of a larger activity, e.g. development of a biological control or IPM programme elsewhere. Such research is not easily approached strategically, as it is often opportunistic and CABI is only contributing a part of a larger programme – CABI often has little influence on downstream application, outcomes and impact. However, it may be useful for the Centre to consider a more strategic approach to develop its research programme. This might involve, for instance, developing a vision for the potential impact of a line of research, e.g. IPM in a particular crop in China or DRPK and developing a theory of

change, identifying outcomes and impacts, and establishing where CABI science would make a contribution and what subsequent factors might influence its impact. This then would help to identify and establish the monitoring and evaluation required to measure whether CABI science has contributed to the overall outcomes and impacts with its contractors and partners.

Such an approach could be based on a standard CABI template for research design and evaluation. Its benefits would be several-fold. First, taking a strategic and impact-based approach to any scientific research will make any proposal more attractive to sponsors and partners today. Second, it will help the Centre to choose and develop projects that will generate the most impact that can be attributed to CABI interventions. Thirdly, this will contribute to a culture of impact evaluation in CABI that will help to better integrate its science and development programmes.