

HOW THE GLOBAL PLANT CLINIC BEGAN

Eric Boa of CABI describes the inspiration that led to the first Plant Health Clinic and how the concept is spreading around the world

Key Words: Global Plant Clinic, Plant health clinic, Bolivia, IPM, Advisory Services, CABI

Speak to the people and listen

Tiraque is a small town in Bolivia, about two hours from Cochabamba on the road to Santa Cruz de la Sierra. The town comes alive every Friday when a busy agricultural fair attracts many people (mostly farmers) from nearby and buyers and traders from further afield. It has a big potato market and lorry loads of onions, broad beans and other agricultural produce regularly come and go.

The Tiraque fair is where the Global Plant Clinic (GPC) began to take shape. Up till then CABI had provided a 'diagnostic and advisory service' to developing countries, supported by the UK Department for International Development (DFID), for over thirty years. But we needed to change. Why? Because DFID published a landmark policy statement (white paper) on eliminating poverty in 1997; and a consensus on Millennium Development Goals appeared in 2000.

My first vague thoughts were that we needed to join forces with new groups of people and be innovative or undertake 'fresh thinking that creates new value', to quote a pithy definition from the business world. How do you innovate? Tiraque fair on the 7 December 2001 gave suggestions on what to do.

The event that heralded change was held in the back of a pickup truck and led by Juan Almanza of PROINPA (*Promoción e Investigación de Productos Andinos*). The previous evening myself and Jeff Bentley, a long standing CABI associate who lives in Bolivia, had asked Juan if it was possible to give a public demonstration of a rapid diagnostic test for farmers. Jeff and I had talked for some time of bringing diagnostic and advisory services closer to farmers, but had not worked out how to do it.

Juan chose a rapid diagnostic test for potato nematode cysts in soil. He was a good choice for what we later called 'Going Public' (Bentley *et al.*, 2003). Well known and trusted by local farmers (though there was no guarantee that they would be at the market and there was no time for advance publicity), Juan spoke Quechua and knew many of the problems farmers faced. He understood how they farmed. Finally, he was a gifted presenter, at ease in a public place.

Juan is a 'técnico' or agricultural technician who does extension work. He is not an expert plant pathologist, but, as we saw that day, that is not an essential qualification to

provide diagnostic and advisory services in a market place. Juan showed me that the GPC (a name that we adopted post-Tiraque in late 2002) needed to work more closely with those who have regular contact with farmers. We needed more Juans.

This has not been straightforward in other countries and establishing working partnerships with extensionists is more difficult than I imagined. This is surprising because many have fine skills and work well with farmers. Overall, extensionists are poorly used in development projects, partly because their most valuable skills are under-valued and partly because their failings are exaggerated, particularly by scientists.

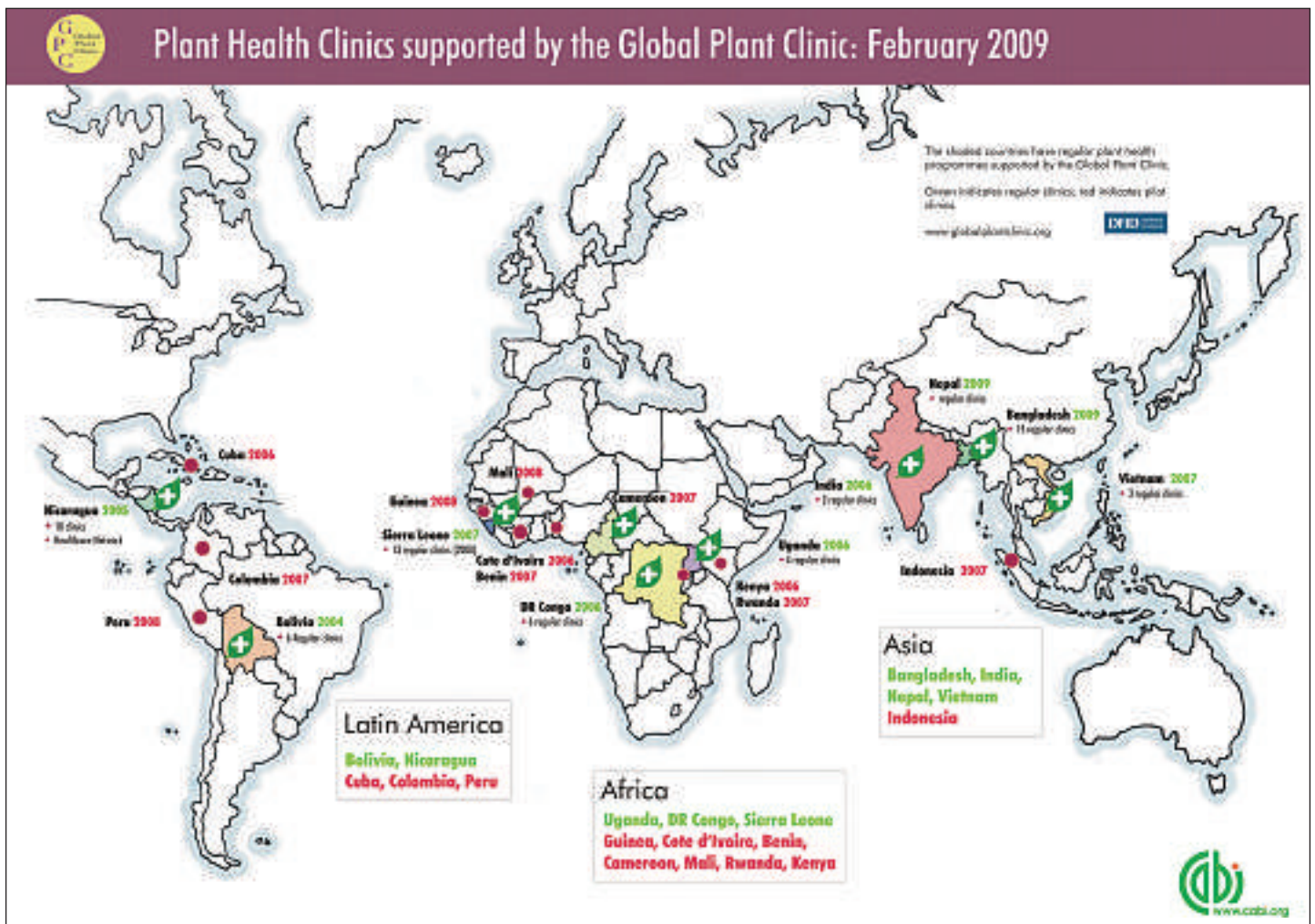
Juan and his colleague Cecilia Soliz held a three hour session in the open air which attracted around 60 people. They repeated the test to fresh audiences as people drifted away, drawing in women who watched cautiously from the sidelines. Nobody has to stay and listen unless they want to in a public place. Juan gave a brilliant performance that I still remember vividly. He showed how farmers could do the test themselves and what it meant if the result was positive; use crop rotation if the cysts were present in field soils, but not to plant potatoes.

We did a similar event a few days later in Sucre with Daniel Vasques, another expert técnico at ease with farmers, fluent in Quechua and knowledgeable about local farming. Jeff and I went with Daniel the day before to visit nearby peach farmers. We gathered samples of problems (mite damage, aphid infestations, peach leaf curl and a 'yellows' disease caused by a phytoplasma) and discussed how to tell them apart and what advice to give.

There was no agricultural fair in Sucre so we went instead to a bus terminal. There were fewer people present than in Tiraque, but they were relaxed, had time on their hands and were intrigued by the peach samples Daniel placed on a borrowed table. This was more like a clinic than Tiraque, though still restricted to one crop. Daniel spoke fluently to all ages and both sexes. Jeff took notes. I took photographs and we began thinking about plant health clinics.

Plant health clinics get going

In September 2002, I asked Jeff to convene a small group at the Toralapa field station run by PROINPA. This group ran the first *Posta para Plantas* (plant health clinic: the name is borrowed from *Posta de Salud*, a human health clinic) in nearby Tiraque. Soon after CIAT Santa Cruz (*Centro de Investigación de Agricultura Tropical*) started *Postas* in Los



Negros and Saipina, both close to CIAT's base in Comarapa. Jeff and I visited Los Negros one busy Sunday morning in early 2003. Two things impressed us: farmers could present any crop and type of problem; and the 'plant doctors' gave advice on what to do. CIAT staff ran the clinic with a confidence and verve that showed a natural affinity for analysing problems and giving advice.



Plant clinic table and doctors in Tiraque, Bolivia

Los Negros was an early sign that clinics help organisations fulfil existing responsibilities and 'livelihood' mandates (i.e. helping farm families). CIAT's own farmer mandate had encouraged the establishment of a community plant health clinic in Comarapa town in 2001. The official name in Spanish is *Laboratorio de Diagnóstico de Plantas* or LADIPLANTAS, but it delivers wider plant health services. LADIPLANTAS is housed in a 'fixed' building and the doors are open to farmers seven days a week. The *Postas* are temporary or 'mobile' events, usually lasting half a day and held weekly. LADIPLANTAS was another inspiration for the GPC (Bentley & Boa, 2004). It was an early demonstration of linking fixed and mobile services. It is helpful if one organisation can provide laboratory and community-based plant health services. This is rarely the case. Extension and research tend to be done by different organisations and linking plant health clinics to diagnostic laboratories in other countries requires much attention and effort.

The GPC still has a diagnostic and advisory service, although now more effort is spent helping organisations establish plant health clinics and building plant health systems. Connecting national and international diagnostic expertise is important. For example, LADIPLANTAS diagnoses all types of pests and diseases but sometimes they need further advice or they lack equipment and materials. The GPC has helped to publish four new disease records with

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Table 1: Regular and pilot health clinics supported by the GPC in 21 countries

Country	Year started	# clinics	Frequency
Bangladesh	2004	19	Regular
Benin	2006	(3)	Pilots
Bolivia	2003	9	Regular
Cameroon	2007	2	Pilots
Colombia	2006	(2)	Pilots
Côte d'Ivoire	2006	(1)	Pilot
Cuba	2005	(2)	Pilots
DR Congo	2006	9	Regular
Guinea	2006	(1)	Pilot
India	2006	2	Regular
Indonesia	2007	(2)	Pilots
Kenya	2005	(3)	Pilots
Mali	2008	(1)	Pilot
Nepal	2009	3	Due to start early 2009
Nicaragua	2005	18+	Regular
Peru	2008	(2)	Pilots
Rwanda	2006	(4)	Pilots, 1 regular from 2009
Sierra Leone	2006	13	Regular (since 2008)
Sri Lanka	2009	1	Pilot
Uganda	2005	4	Regular (since 2006)
Vietnam	2007	2	Regular
Total		103	80 regular, 23 pilots

CIAT staff (e.g. Jones *et al.*, 2005). It is unlikely these would have been confirmed and published without this collaboration. As other clinic schemes have arisen (Table 1) so more farmers and extension services have had access to national diagnostic laboratories and the GPC. Since 2002, the GPC alliance (CABI, Central Science Laboratory and Rothamsted Research) has helped to publish 40 new disease records from Latin America, Africa, Asia and Europe (Boa & Reeder, 2009)

LADIPLANTAS continues to provide a valuable service to local farmers. The laboratory is supported by Comarapa municipality, the department of Santa Cruz (via CIAT) and farmers who pay for services. It is one of the few examples I know of a community-based clinic (and diagnostic laboratory) which successfully addresses the demands of farmers and which has continued to survive in the absence of project funding. LADIPLANTAS deserves wider recognition as a model for others to copy.

Spreading a good idea

Why did plant health clinics start in Bolivia? Partly opportunity and chance, but also because people were receptive to new ideas and they worked regularly with



Harun-ar-Rashid of the Agricultural Advisory Society at one of the plant clinics run by this NGO in Bangladesh

farmers. CIAT and PROINPA are modern institutes with progressive outlooks. They are responsive to farmers' needs and have well established connections with farming communities. These are important features, but it was key individuals who made the difference in getting clinics started. The GPC was fortunate in working with Juan and Daniel, highly knowledgeable técnicos at ease with farmers. Good at listening, good at responding.

If change starts with individuals it can only be sustained if senior staff and ultimately the heads of organisations support new ideas. The GPC has been equally fortunate in working with Pablo Franco at CIAT, Javier Franco and Toni Gandarillas of PROINPA and, more recently Juan Villaroel of the Universidad Mayor de San Simón. There are now nine clinics in the departments of Santa Cruz and Cochabamba. Progress has been slow in linking the clinics to the government plant health authority, highlighting the challenge of embedding clinic-based services in national policies. But it is possible if greater investment permits building plant healthcare networks and national coalitions, as in Nicaragua (see Danielsen & Fernández, 2008).

Prompted by the encouraging start in Bolivia, I began to look for new countries where clinics could be established. The crucial starting point was to identify dynamic individuals and receptive organisations. The GPC was introduced in Bangladesh to AKM Zakaria at the Rural Development Academy (RDA), Bogra and Harun-ar-Rashid of the Agricultural Advisory Society (AAS), Dhaka by Paul Van Mele. Shushilan, an NGO from southwest Bangladesh, joined after Jeff Bentley made a separate visit for a different project in 2004. Bangladesh now has 19 regular plant clinics run by RDA, AAS and Shushilan and coordinated by Paula Kelly (see e.g. Kelly & Bentley 2008).

The GPC first attempted to start clinics in Uganda in 2003, but they did not begin properly until 2006 when Rob Reeder of the GPC, together with the Ministry for Agriculture, Animal Industries and Fisheries, helped to establish clinics with CARITAS-Lugazi (Mukono), SG2000

(Iganga) and Socadido (Soroti). Clinics need to connect with government since greater public investment is needed in plant health services for farmers. National Plant Protection Organisations benefit from the regular, community-based surveillance that clinics can provide, helping to create more accurate and comprehensive lists of pests and diseases.

But working with governments can be slow. Officials demand evidence of impact while researchers and extension staff need to see how clinics fit in with other methods and approaches, including IPM projects and farmer field schools (FFS). Having established around 80 independently run clinics in nine countries (Table 1), the GPC is now gathering evidence of impact and advocating plant health policies that support better plant health services and stronger plant health systems for everyone.

There have been many successes in establishing clinics but it is also important to reflect on schemes that did not continue. Indonesia had successful pilot clinics (Harling & Boa, 2007), but does not have regular clinics. The main reason is that, until now, we have been unable to identify a suitable clinic organisation. The University of North Sumatra, who helped run the successful pilots, is based in Medan, a three hour return journey to Berastagi. Difficult to do if you lack transport.

The biggest and most successful clinic scheme is in Nicaragua (Danielsen & Fernández, 2008). Solveig Danielsen, a Danish plant pathologist, met with GPC staff in 2002. When she began working in Nicaragua in 2005 she suggested to colleagues that the *Postas para Plantas* of Bolivia (which became *Puestos para Plantas* in Nicaragua) could satisfy community demand for better support services. The pilots worked and the clinic scheme has evolved into a national plant health system, albeit one that is still fragile in places. Governments not only move slowly, but can dramatically change policies as new administrations are voted in.



Daniel Vasques explains peach pests and diseases at a bus terminal in Sucre, one of the first 'Going Public' sessions that led to the establishment of *Postas para Plantas* in Bolivia



Posta para Plantas (clinic) in Vallegrande, organised by CIAT Bolivia and run by farmers

Stimulating innovation

Bolivia has had an important early influence on other countries. The GPC distributed publications to highlight key achievements. They were short, well illustrated and designed to emphasise what people did and contributions of plant clinics to livelihoods. In six years the GPC had moved much closer to the priority goals of developing countries, as a result of getting out and working with grassroots and local government agencies around the world. There is now an extensive series of illustrated publications which share a common aim in emphasising outcomes rather than outputs. The best way to illustrate this difference is by comparing 'number trained' (output) versus 'improved ability to respond' (outcome). Training a plant doctor or diagnostician will have little impact unless the consequences of their improved skills can be measured. Similarly, one clinic makes little difference. An improved plant health system delivers real benefits to farmers.

GPC publications are available on the R4D website (www.research4development.info). Two 15 minute videos have been produced in association with Jo Rodgers and Phil Malone of CountryWise explaining the clinic schemes in Nicaragua and Bangladesh. A third video on clinics in

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Uganda and DR Congo will be ready in early 2009 with a 10 minute video illustrating how clinics provide community-based surveillance of current and emerging plant health problems. There are two YouTube sites ('globalplantclinic' and 'ericboa') with examples of clinics, training of plant doctors, plant health problems and other aspects of the varied work that the GPC carries out.

The impact of GPC publications and videos is difficult to measure, but there is no doubt in my mind that seeing farmers with samples and receiving advice from plant doctors has played an important part in convincing others to run clinics. Publications (Bentley *et al.*, 2007; Kelly, 2008) and videos from Bangladesh have stimulated new initiatives in India and Nepal. Vietnam produced their own photoessay after seeing one from Bangladesh (Danielsen & Kelly, 2008). Many people are responding in new ways to the unfolding story of plant health clinics.

Conclusion

It is almost eight years since Juan Almanza and Daniel Vasques performed in Tiraque and Sucre. There are now 80 clinics running regularly in nine countries and each year the requests to run training courses and start clinics increase. The GPC has trained over 500 plant doctors. Short courses include 'how to become a plant doctor' (three modules), 'quality control and participatory monitoring of clinics' and 'community-based surveillance of plant diseases'.

We are creating stronger links between clinics and farmer field schools in Sierra Leone and East Africa and seeing how community-based surveillance from clinics can contribute to phytosanitary controls. These are only some of the examples of the activities that the GPC undertakes. We have changed much since 2001 when our activities were still dominated by one-off crop protection projects. Now we have a regular and closer contact with extensionists and farmers and that has helped to shape a new way of providing regular support to the hundreds of millions of people who lack reliable plant health services.

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Acknowledgements

The success of the plant clinics are due to many people, some of whom are mentioned in the text. I would particularly like to thank Jeffery Bentley, Solveig Danielsen, Rob Reeder, Paula Kelly and Rob Harling for their contributions.

Eric Boa is head of the Global Plant Clinic (GPC) and works for CABI. He obtained a Ph.D. in forest pathology at the University of Leeds then worked in Bangladesh and Indonesia on diseases of bamboo and clove. He has also studied local uses of bamboo and global importance of wild edible fungi. He developed a passion for extension and training late in his career. Research interests include effective plant healthcare for farmers and development of plant health systems based on plant health clinics.

Similar articles that appeared in *Outlooks on Pest Management* include – 2007 18(4) 172; 2008 19(1) 39; 2008 19(6) 260