Donor Country Profile: United Kingdom

THE RELATIONSHIP between WARDA and the United Kingdom goes back to at least 1975. The UK has provided direct grant support to core and restricted projects, 'in-kind' grants, and seconded staff. In recent years, WARDA has teamed up with several UK 'high-tech' institutions in research partnership.

Since the earliest days, the United Kingdom has maintained strong development-aid links with members of the British Commonwealth; it has also expanded those links to non-Commonwealth countries throughout Sub-Saharan Africa and to multilateral agencies such as WARDA.

Seconded experts

In 1993, DFID (then the Overseas Development Administration, ODA) posted scientists from UK institutions to WARDA to work on jointly implemented projects. Charles Williams, entomologist with the Centre for Agriculture and Biosciences International (CABI), was posted to WARDA's Nigeria Station, based at the International Institute of Tropical Agriculture (IITA), Ibadan. The ODA-funded project on African rice gall midge brought together expertise from CABI's Institute of Biological Control and Institute of Entomology with WARDA staff, members of the WARDA–NARS Task Forces on Integrated Pest Management and Lowland Breeding, and other West and Central African NARS scientists, while IITA provided facilities and administrative support. The work sought to assess the distribution and economic importance of African rice gall midge in West Africa; to assess the role of pest ecology, alternative hosts and farm cultural practices in gall-midge population dynamics; to identify natural enemies (predators, parasites) of gall midge and their importance in the natural regulation of pest populations; and, to develop resistant rice varieties with good agronomic characteristics and grain quality. The project mapped the distribution of gall midge in at least six countries in the region, and also devised equations to predict yield loss from a knowledge of the midge infestation level. Through field surveys and insectarium tests, project staff determined that African rice gall midge is restricted to plants of the genus *Oryza*, with the weed *O. longistaminata* and volunteer and

On a susceptible rice variety, African rice gall midge can cause complete yield loss

Cisadane shown here at grain filling, is tolerant to gall-midge attack, producing panicles despite infestation

ratoon rice as the principal alternative hosts that enable populations to survive through the non-growing season. Two parasitoids were identified that constitute the pest's most important natural enemies—one of these also parasitizes a related gall midge of a regionally common weed, thus suitable management of the weed could yield more parasitoids to attack rice gall midge. Gall-midge resistance proved surprisingly elusive in rice, despite thousands of lines being screened. The best find was of an Indonesian variety, Cisadane, which was subsequently released for cultivation in the gall-midge endemic region of southeast Nigeria. Meanwhile, the project's activities did serve to develop a suitable screening methodology for gall-midge resistance. Research on African rice gall midge at WARDA continues today under core funding.

At about the same time, David Johnson, weed scientist with the Natural Resources Institute (NRI), was posted to WARDA Headquarters. Since 1994, DFID has funded several weed projects in West and Central Africa—some specific to WARDA, and others where the NRI/WARDA weed scientist has given input into non-WARDA projects. Much of the NRI/WARDA weed work was reported last year (*see* 'Allies in the War on Weeds,' *WARDA Annual Report 1998*, pages 33–39). In 1999, the weed team was boosted by the arrival of Rebecca Kent under DFID's Associate Professional Officer Scheme.

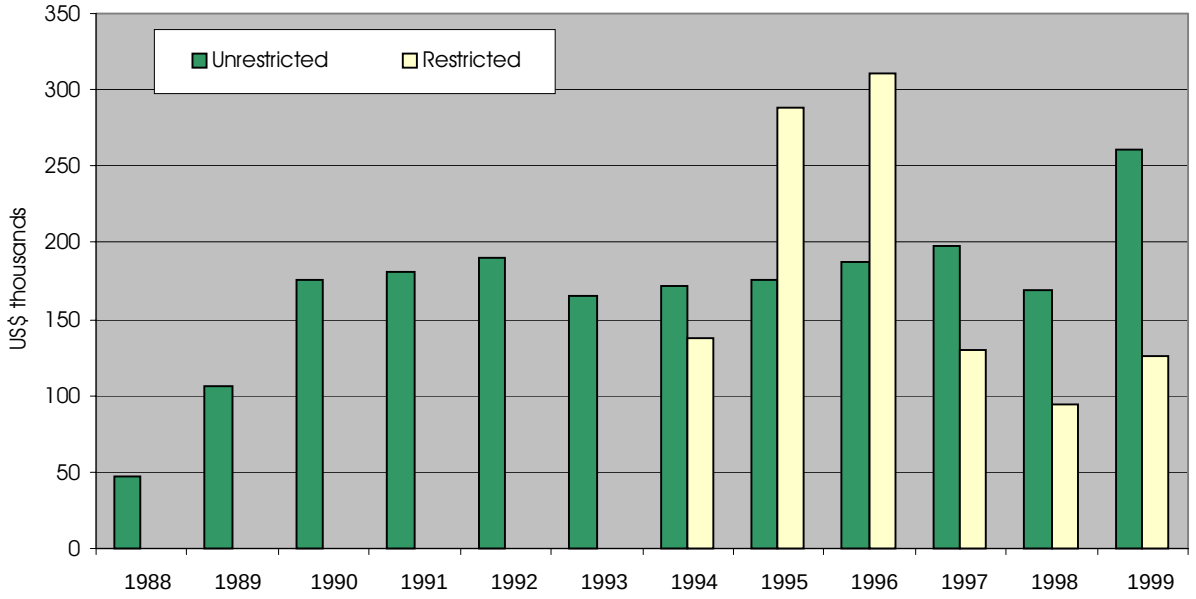
In 1994, Daniel Coyne, nematologist also with NRI, was posted to Headquarters. The NRI/WARDA nematology project also brought in expertise from CABI's Institute of Parasitology. The project highlighted the insidious nature of nematode infestation in rice—a problem almost unknown among West and Central African rice farmers, although almost every field is infested to some extent, with nematodes accounting for an estimated 10% of all crop losses. Some eight genera of nematodes are responsible for root and foliar damage to rice in the region, and a brochure is in preparation (with NRI/CABI and the International Rice Research Institute, IRRI) to raise the awareness of these important pests among research, extension and development agents working on rice worldwide.

More pests... but also genetic resources, soils and drought

The UK's expertise and keen interest in pest management is clearly seen in the specializations of the four secondees. British funds have also been geared toward addressing

David E. Johnson, NRI/WARDA weed scientist, 1992–2000

Figure 10. UK funding to WARDA, 1988–1999



the problems caused by the major rice diseases in West and Central Africa. Since 1996, the WARDA phytopathology team has been helping CABI and Horticulture Research International (HRI) with the characterization of sites in Côte d'Ivoire, Ghana and Nigeria for screening for blast and scald resistance. Then in 1997, DFID started to provide funds for us to screen varieties for their resistance to rice yellow mottle virus (RYMV) in Mali and Niger. Most recently, DFID has attributed funds (from 1999) for research on integrated management of RYMV and the study of the genetic diversity of the blast fungus pathogen.

In 1994–1996, DFID "picked up the tab" for the relocation of the International Network for the Genetic Evaluation of Rice for Africa (INGER-Africa) from IITA to WARDA. Formerly operated under the direct auspices of IRRI, INGER-Africa is now fully imbedded in the WARDA program; it tailors nurseries to the precise needs and resources of its partners in national programs throughout Sub-Saharan Africa. The first INGER-Africa meeting since the relocation was scheduled for early 2000, and the Network receives on-going valuable support from DFID.

In 1997, DFID agreed to support a special project on soil degradation in irrigated rice systems in the Sahel, which is conducted by WARDA and its national partners in Burkina Faso and Mauritania. A detailed account of some of that work in given in 'A Holistic Approach to Irrigated Rice Farming Problems Uncovers More Than Just Soil Degradation,' in this Report.

Also in 1997, WARDA scientists became involved in DFID's work on testing drought-tolerant varieties of upland rice in Ghana, in collaboration with the University of Reading.

In 1998, a project was launched on seed priming, as a component of integrated weed management. This project also involves another UK institution—the Centre for Arid Zone Studies of the University of Wales. It is planned to incorporate seed priming with some of the participatory

varietal selection trials being conducted throughout WARDA's mandate region.

In 1999, a three-year project was initiated on 'weedy rice,' based at WARDA, with field trials in Ghana and Mali. Two species of wild rice cause problems to farmers in many parts of Africa—*Oryza longistaminata* (a perennial) and *O. berthii* (an annual). One of the main problems is that during early growth stages, the wild species look similar to the cultivated species. The project seeks to develop a range of control measures for an integrated approach—there are both biological and social scientists on the project team. The project also has field activities in Tanzania, and glasshouse studies are being conducted at Long Ashton Research Station in the UK.

Networking

Increasingly, WARDA sees itself as a linkage between so-called advanced institutions and the region's national research and extension services. Our goal is to ensure that the resources of each partner are utilized in the most efficient way, then bring everything together for the benefit of all parties, and our ultimate clientele—the resource-poor farming households of West and Central Africa.

The UK expertise in pests and diseases continues to be of benefit to the WARDA team. On-going collaboration in blast research involves NRI, CABI and the Commonwealth Mycological Institute, with molecular analysis and pathotyping being conducted by HRI. NRI also continues to be involved with RYMV work, looking at virus transmission by insects. An initial project on developing transgenic resistance to RYMV in rice was a collaborative effort between the Sainsbury Laboratory (part of the University of East Anglia) and WARDA. The latest such project, however, is being conducted in collaboration with the John Innes Centre, where colleagues are conducting molecular characterization of the virus with a view to developing transgenic resistance to RYMV. The John Innes Centre is also using NERICAs to map natural resistance genes to nematodes and RYMV, and genes for weed competitiveness. With the early success of transgenic research for RYMV resistance, we are looking into the possibility of linking up with Leeds University to investigate the possibility of transgenic nematode resistance.

Gatsby Foundation

"Work with the British is not all about direct government aid funding," says WARDA Director General Kanayo Nwanze. "One exciting development is our growing relationship with the Gatsby Foundation." As a philanthropic institution, the Gatsby Foundation is an ideal supporter for agricultural research and development. In 1997, Gatsby made a contribution to WARDA's efforts to build a containment facility at its M'bé headquarters, as part of its biosafety mandate in the region. This support is expected to be reinforced in 2000.

Gatsby have also shown an interest in the participatory varietal selection (PVS) research aspect of the interspecific hybridization project, and have agreed to fund PVS activities in Ghana and Nigeria for three years from 2000 (*see* 'New Rice for Africa... with a Little Help from Our Friends,' in this Report).

Training

A mix of training opportunities has been provided through WARDA–UK collaboration. Between 1977 and 1987, four regional scientists were sponsored by ODA to carry out MSc work at Reading University in collaboration with Rokupr Rice Research Station (then part of WARDA).

DFID is currently sponsoring three postgraduate scholars at WARDA: Tien Hoang (Dutch) taking an MSc in salinity tolerance in irrigated rice at Wageningen UR; Daba Ndour (Senegalese) researching for a PhD in irrigated-rice breeding at Cheikh Anta Diop University, Dakar; and, Jill Cairns (Scottish) researching for a PhD in rice genetics at Aberdeen University.

In addition, two WARDA staff are scheduled to leave WARDA in 2000 to take up PhD studies at the University of East Anglia, as part of the WARDA/John Innes Centre RYMV research program.

An unusual recent development is the work of Cary Clark (US citizen), who is funding her own way through PhD research with Reading University, in community resource management and credit systems.

The British influence: Board chair and other staff

In 1997, Lindsay Innes of the Scottish Crop Research Institute was elected to the WARDA Board of Trustees. His clear insights and leadership qualities have led to his being elected Chairman of the Board from 2000.

Between 1996 and 1997, 'Brit' Andrew Urquhart served WARDA as acting Head of Finance and Personnel Services. Then in 1998, two more 'Brits' were hired by WARDA as core senior staff: Amir Kassam joined as Deputy Director General for Programs, and Guy Manners as Information Officer.

From strength to strength

At a time when so many donor nations seem to be 'shying away' from international agricultural research, it is pleasing to see the faith and trust placed in WARDA by the United Kingdom. DFID in particular has recognized the value of entrusting WARDA with rice research activities for Africa, and has encouraged us by increasing its support to our activities during this difficult time. For this they receive our grateful thanks, and we look forward to continued fruitful collaboration well into the next millennium.

Just what is the UK? A lesson in political geography

"One thing that really confuses everyone," says Guy Manners, WARDA's 'very English' information officer, "is the relationship between (Great) Britain, the United Kingdom and their component entities."

Here is a simple guide to the political and geographical complexities of those islands off the northwest coast of continental Europe:

- Great Britain = England, Scotland and Wales (political)
- United Kingdom = Great Britain and Northern Ireland (political)
- British Isles = United Kingdom, Irish Republic and all associated islands, or (originally) Great Britain and Ireland (geographical)

"What makes for the greatest confusion," continues Guy, "is the fact that those of us from the UK are usually expected to state our nationality as 'British'! I've never understood that one! I am English, British and a citizen of the United Kingdom. Personally, I prefer to say that I'm English."