



THE SEMI-ARID FLORA OF THE NORTHERN STATES OF NORTHEAST BRAZIL - CAATINGA AND CARRASCO

The overall objective of this PNE research project is to survey the plant diversity of the semi-arid vegetation of selected areas of the northern states of Northeast Brazil and determine its potential for sustainable use and conservation.

The project is based at the Federal University of Ceará (UFC) in Fortaleza, with funds from Souza Cruz, a subsidiary of British American Tobacco. Other participating institutions are: Escola Superior de Agricultura de Mossoró (ESAM), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Instituto Brasileiro do Meio Ambiente e Recursos Renováveis (IBAMA), Federal University of Piauí (UFPI) and RBG Kew.

The project is planned in four successive phases to include areas of contrasting physical environment, vegetation cover, species composition and traditions of land use.

Phase I started in January 1996 and is studying the semi-arid caatinga vegetation of Aiuaba (Ceará) and the Chapada de Apodi (on the frontier of Rio Grande do Norte and Ceará). Results so far include:

- Satellite images make it clear that deforestation of the semi-arid vegetation is accelerating, causing soil erosion during the rainy season.
- Soil erosion, in flat areas, takes place during heavy rains which carry sediments toward rivers.
- A preliminary list of 429 caatinga species has been compiled from existing reference collections in the herbarium at UFC.
- 6400 plant collections have been made in monthly field trips. Approximately 360 species have so far been identified, including two possibly new taxa.
- Training at various levels was necessary to develop the practical skills needed, for example: for mapping, collecting reference specimens, identifying plants or for eliciting and recording local knowledge of plant uses from communities.

'Caatinga' vegetation during the annual 7 or 8 month dry period. A ten year cycle is nevertheless very rich in species..
brings periodic droughts but the vegetation

- Local teachers, children and adolescents in Aiuaba were given classes and workshops on conservation and the sustainable use of the caatinga. The benefits of these were stressed for local community.
- Teaching materials such as poster photographs and texts were displayed regularly at the Aiuaba Ecological Station for the benefit of visitors to the Station from nearby areas - 3650 children and 190 teachers over 12 months.
- Maps of the semi-arid vegetation of Ceará and of the local area have been produced and distributed within the community of Aiuaba.
- A database using ALICE software was installed at the project's laboratory in UFC, enabling a synthesis of data from field and herbarium studies.
- The work of the programme has been exhibited at scientific meetings (PNE Workshop, Recife in April 1996 and Brazilian National Botanical Congresses 1996 and 1997), publicised through the local newspaper *O Povo*, and through posters in universities and participating institutions.

The second phase of the project will concentrate on two new caatinga sites (Quixadá, Ceará and Seridó, Rio Grande do Norte) and two new carrasco sites (the plateaux of Araripe and Ibiapaba (both in Ceará). The areas of study for the two final phases in Ceará and Piauí states have yet to be selected.

WHAT IS PNE?

PNE is a multidisciplinary research programme contributing to the identification and sustainable use of plant resources in Northeast Brazil. PNE combines conservation and improvement of ecosystems with positive socio-economic benefit to the local community.

PNE raises funds independently to support its activities. It is managed through the Association PNE.

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UK participation in PNE is coordinated through the PNE Office in RBG Kew.

The British Government's Department for International Development (DfID - formerly ODA) has recently approved £1.85 million pounds over the next five years for PNE's Information, Dissemination and Training Subprogramme (SIDT).

Funding will enable creation of a Plant Resource Information and Documentation Centre in the Federal University of Pernambuco (UFPE); a rural extension programme (including pilot community projects) to be managed by AS-PTA and AMAS (NGOs with expertise and extensive contacts in rural development and alternative agriculture in the region) and an information repatriation centre at RBG Kew. The approved version of the SIDT proposal is now with the Agência Brasileira de Cooperação (ABC) awaiting final approval of the Brazilian Government.

DfID has further approved pre-project training in the UK for three key SIDT personnel. Training includes familiarisation with Kew and its information resources, visits to other UK institutions, English language and specialist courses. Marcelino de Souza Lima, who will work in AS-PTA to design and implement SIDT's extension programme, arrived at Kew in April 1997. The PNE Association recently appointed Eduardo Dalcin as the future Coordinator of SIDT. Eduardo will shortly begin a three month training period at Kew. Finally the UK information repatriation officer will join Eduardo and Marcelino to train with Bob Allkin for a two month period from October.

Marcelino S. Lima (ASPTA, Recife) and database on useful plants of the world's

Marcelino de Souza Lima, an agronomist, who is to lead SIDT's extension programme, has previously worked for two NGOs in the Northeast of Brazil. Marcelino has experience in Participatory Appraisal techniques and in implementing practical programmes and extension projects in rural development. He has just obtained his MSc in Agricultural Science from The University of Göttingen, Germany. His thesis ("Effects of increasing management of caatinga vegetation on sheep production in the Sertão do Ceará") was based on a study of sheep production in caatinga managed by CNPC-EMBRAPA, Sobral, Ceará.

Marcelino spent his first few weeks on an intensive English language course whilst

Steve Davis looking at CEB's SEPASAL tropical and subtropical. drylands.

working with various departments within Kew, familiarising himself with PNE's programme and particularly SIDT.

He has taken a one week course on Participatory Rural Appraisal at the University of Edinburgh and a four week course on Agroforestry for Sustainable Land Use at the Department of Agricultural Economics, Wye College in Kent. Amongst the institutions visited was the Overseas Development Institute, where he made particularly useful contacts. Back in Kew, he will round off his training by visiting other Kew departments and visiting other organisations such as the International Institute for Environment & Development, London.

CONTINUED SUPPORT FOR PNE FROM CNPq

PNE has received a great vote of confidence from the Brazilian government by the announcement from CNPq (the Brazilian National Centre for Science and Technological Development) that it is to renew PNE's research and training studentships.

CNPq will provide grants of approximately \$1,000,000 million between 01/07/97 and 30/06/99 to give continuity to the Anglo-Brazilian collaboration involving universities, governmental and non governmental institutions in Brazil and Kew.

CNPq stresses their pride in contributing to knowledge of the biodiversity of the semi-arid region of Northeast Brazil and its transfer to the local community. They believe that PNE's objectives coincide with those of the Federal Government Science and Technology Plan (C&T) which focuses on social development in the poorest regions of Brazil.

CNPq's decision was based on the success of the First PNE Workshop in Recife April 1996, where the Programme "demonstrated maturity and its integration with other development programmes in Northeast of Brazil".

CNPq also approved \$10,000,00 for two future workshops in economic botany - one on medicinal plants on 27 - 28 November 1997 and the other on forage plants in March 1998. The main objective of these workshops is to bring people together to discuss regional priorities in medicinal and forage plants and to give continuity to the discussions generated by the First PNE Workshop. For further information, please contact the PNE Association (*see page 1, col 3*).

Two other workshop will be funded next year, one on biodiversity and the other on native fruits. Details will appear in subsequent issues of this Newsletter.

THE PNE ASSOCIATION

We would like to congratulate Dr Maria Regina Barbosa and Dr Isabel Cristina Machado who, in April 1997, were elected President and Vice-President respectively of the PNE Association (APNE). Regina works at the Federal University of Paraíba in João Pessoa, near Recife, which will facilitate contact with the PNE Office.

We would like to express our particular thanks to Prof. João Ambrósio de A. Filho and Prof. Francisco José de A. Matos for their personal commitment to PNE as President and Vice-President during the critical initial phase of the Association.

We also extend our sincere thanks to Prof. Paterniani, who has represented CNPq on the APNE committee for 3 years, and to Prof. Maria de Jesus Rodal who stepped down from the committee at the end of her mandate. Both have made many valuable contributions to the Association.

✠ Products from PNE Projects

We would like to congratulate the medicinal and forage plant project leaders for producing excellent products:

- José Luciano S. de Lima for the illustrated book: *Forage Plants of Caatinga - Use and Potential*.
- Dr João Ambrósio de Araújo Filho for the illustrated folders on *Improvement of the Caatinga, Management system of the Caatinga, Coppicing in the Caatinga, Pollarding in the Caatinga and Multiple use of trees in the Caatinga*.
- Dra Maria do P. Socorro C. Bona do Nascimento for the illustrated book on *Forage plants of Bacia do Parnaíba - use and chemical composition*.
- Prof. Francisco José de Abreu Matos for the booklet *Make your own medicinal plant garden* and the illustrated folders: *Alecrim Pimenta - an antiseptic for skin ailments; Alfavaca-Cravo - an antiseptic for mouth hygiene; Babosa - to heal wounds; Chambá - for coughs and asthma; Goiabeira - for diarrhoea; Hortelã Rasteira - for amoeba and giardia; Malva Santa - for upset stomach; Malvariço - for hoarseness and coughs*.
- Maria de Fátima Agra for the illustrated book: *Medicinal plants of Cariris Velhos - the common species*.

Copies can be obtained from the PNE Association, (see page 1).

✠ Thanks to Karen Pipe-Wolferstan

The PNE team would like to give a special thanks to Karen Pipe-Wolferstan for her valuable contribution to the programme over the last four years.

Karen joined the PNE team at Kew in March 1993. From the outset she faced various challenges - not the least of which was learning Portuguese! She then had to familiarise herself quickly with Brazilian culture whilst mastering details of the various PNE projects.

Karen was instrumental in establishing the administrative and financial structure for PNE and helped develop new project proposals. She will always be remembered for her enthusiasm and energy travelling intensively throughout Northeast Brazil and providing people with project management skills.

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Her encouragement and expertise were critical in enabling projects to meet their targets.

In July 1994, Karen played a key role in setting up the PNE Association in Recife. Since then she has gradually handed over management responsibilities to the Brazilian General Coordinator and to the Conselho Superior (Brazilian committee). She also helped foster relationships between PNE, CNPq and Kew that resulted in the original award from CNPq for PNE studentships.

The full benefit of Karen's contribution to the Programme was seen in the First PNE Workshop held in Recife in April 1996 - a high profile, hugely successful event which testified to the hard work and commitment of all involved.

Karen herself remains at Kew working in another department. Most importantly, Karen was recently married and we would like to wish her and Richard a very happy and successful future together!

SCIENTIFIC PUBLICATION

✠ Wood from Native Trees:

Anatomy, dendrology, dendrometry, production and use by José Elias de Paula (University of Brasília) and José Luiz de Hamburgo Alves (Federal University of Pernambuco).

The book fills a gap in Brazilian literature and details the anatomy of hundreds of native tree species giving some indication of the use of each. It summarises many publications taken from various disciplines over a period of 33 years.

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PNE Newsletter is now registered, through the British Library, with the International Journal Standard ISSN. The number 1369-4227 will appear on all subsequent issues of the Newsletter. It should also occur whenever we refer to the Newsletter and quoted in all promotional/descriptive material.

✠ We would like to thank Dra Maria Regina Barbosa, President of the PNE Association, for visiting and giving of her time during her holiday in Europe in June.

✠ Our particular thanks go to David Hassett, who represents Kew at the Conselho Superior for attending the PNE-Group meeting when visiting Kew in July, also when on holiday!

✠ Eliana Nogueira, senior analyst at CNPq and ex-President of the Brazilian Botanical Society, visited Kew from April to July 1997 to work on her PhD thesis: "Academic Excellence in Botany". She researched Kew's Archives and Library and interviewed all researchers who work in or collaborate with Brazil. One chapter addresses scientific collaboration between Brazil and the UK including PNE.

✠ Dr Kátia Cavalcanti and Marlene A. Barbosa (Federal University of Pernambuco, Recife) visited PNE/Kew when they were in England in May and June.

✠ Maria de Fátima Agra (Federal University of Paraíba) visited Kew in June to study Solanaceae for her PhD.

✠ Flávia Moura (Federal University of Alagoas) visited Kew to identify species from the Brejo Forest in Pernambuco.

✠ Flávio França and Efigênia de Melo (University of Feira de Santana, Bahia) visited Kew to study Vochysiaceae and Polygonoaceae.

✠ Luiz Wilson Lima Verde (Federal University of Ceará) spent one month at Kew to identify plants from the PNE project in Caatinga, Ceará in August/September 1997.

✠ Goodbye and Thanks to Adriana Araújo Menezes.

The PNE (UK) team would like to thank Adriana very much for her valuable voluntary work for the programme during the last two and a half years. We wish her, Naércio and Felipe the very best for their future back in Brazil.

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Please send any comments or contributions on this publication to Amélia. Articles for the next issue should reach us no later than 30 October 1997.