

## CNIP MANAGING PLANT INFORMATION IN NE BRAZIL

Centro Nordestino de Informações sobre Plantas

Photo: CNIP's image database



CNIP's Documentation Centre based at the Library of the Biological Sciences Centre at the Federal University of Pernambuco (UFPE).

In October 2003, the IDT project will come to an end. Its successful conclusion marks an important milestone for the ongoing PNE programme. The twin goals of the PNE programme, since its inception in 1992, have been to create a framework for the collection and management of plant information in Northeast Brazil and to contribute – as a result of research – to sustainable land usage practices within the rural communities. From the outset, a major problem facing this initiative was the relative scarcity of and limited access to reliable plant information.

The IDT project was launched in 1998 specifically to address this problem. The setting up of an integrated plant information management system, it was hoped, would not only facilitate research into the natural resources of the region, but would also help to foster closer links between scientific research teams and the local communities involved. The subsequent establishment of the Centre for Plant Information (CNIP) within the IDT project has more than lived up to these expectations. Today, CNIP plays a significant role in coordinating the collection, collation and dissemination of key scientific data relating to the indigenous plant species of this area and is fast becoming the main regional point of reference for such information.

All this has been achieved through the direct contribution and participation of a number of national and international partner organisations, the whole enterprise constituting a truly regional network of clear value to the local communities.

Another significant achievement of IDT has been the establishment of the Documentation Centre, based at the Library of the Biological Sciences Centre at UFPE, which now houses over 3000 publications on different aspects of the region's vegetation. These publications consist of data gathered nationally during field trips through seven states, as well as data donated by international institutions, especially Kew. This scientific literature is available to students, technicians, researchers and the general public.

### The following components of the information system held at CNIP are now in place :-

<b>PNE CHECKLIST</b>	Core Database of the seed plants occurring in N.E. Brazil with approx. 8,000 vernacular and scientific names under revision and validation by a worldwide network of 104 collaborating researchers (see page 3)
<b>USEFUL SPECIES OF NORTHEAST BRAZIL</b>	Information on the use and management of the plants most important to rural communities in Paraíba state (see page 4)
<b>FORAGE SPECIES NATIVE TO NORTHEAST BRAZIL</b>	Database containing information on the most utilised forage plants in the region
<b>WOODY SPECIES OF CAATINGA FOREST</b>	Database on the use of woody species of caatinga accessible through the PNE CHECKLIST database.
<b>USEFUL PLANTS OF THE CAATINGA: an ethnobotanical perspective</b>	Information obtained through an ethnobotanical study on the use and management of plant species of NE Brazil
<b>AGROECOLOGICAL INFORMATION SYSTEM</b>	Descriptions of practical experiments carried out by researchers and experimental farmers or reported in publications (see page 3)
<b>DATABANK OF IMAGES &amp; DOCUMENTS</b>	The largest compilation in NE Brazil of photographs and electronic texts describing plants of Northeast Brazil together with explanatory folders on individual plants and their uses.

### Partners and Collaborators – in alphabetical order

AMAS (Mannonite Association for Social Assistance)  
AS-PTA (NGO working in Alternative agriculture and rural development)  
Caatinga (Support Centre for Workers and Non-Government Organisations)  
CEMA (Environmental Ecological Committee, Bezerros - PE)  
CONVIVER – Mirandiba - PE  
Education and Tourism Secretary of Bezerros, Pernambuco State  
Fundaj (Joaquim Nabuco Foundation)  
OCEPE (Cooperative organisation of Pernambuco State)  
PATAC – Programme for the Technological Application adapted to Communities Sabia (Agroecological Development Centre)  
SASOP (NGO providing consultancy and support to community projects)  
Secretariat for Education and Tourism (Bezerros - PE)  
SESCOOP (National Service for Learning and Cooperativism)

### Universities and Research Institutions – in alphabetical order

EMBRAPA – CNPC – National Centre for Goat Research, Sobral - CE  
EMBRAPA – CPANM – Agricultural Research Centre for the Meio-Norte  
UFCE – Federal University of Ceará  
UFPB – Federal University of Paraíba  
UFPI – Federal University of Piauí  
UFRPE – Federal Rural University of Pernambuco

### Funders, Partners and Collaborators

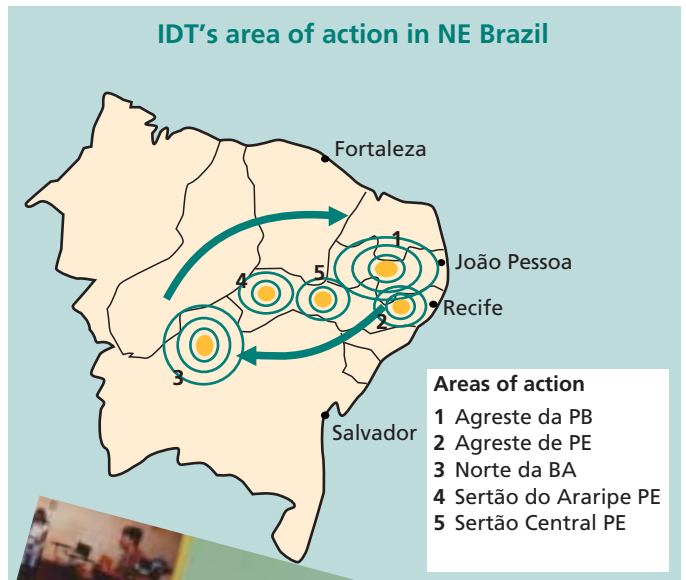
DFID – Department for International Development - UK  
CNPq – Brazilian National Council for Scientific and Technological Development  
UFPE – Federal University of Pernambuco - Brazil  
Royal Botanic Gardens, Kew – Weston Foundation - UK  
Rio Tinto plc

# MANAGEMENT OF PLANT INFORMATION TO PROMOTE SUSTAINABLE AGRICULTURE

IDT focused on three pivotal research areas (forage plants, agroforestry and medicinal plants) linking PNE with community action in Bahia, Pernambuco and the agreste of Paraíba

Another strategy based on Community Action focused on two topics: i) biodiversity awareness and ii) communication methodology. The first of these two topics involved action, based on local people's own knowledge and experience of plant biodiversity management, to promote information gathering, as well as analysis of demand for and supply of local and scientific knowledge on plants, including their use and management. Family agriculture was also encouraged through meetings, relevant thematic seminars, exchange visits, participatory experiments and the capacity building of small-holders. This all resulted in more effective communication and exchange of knowledge on plants between communities in 15 municipalities in the state of Paraíba. The second topic concerned itself with the application and dissemination of these results to other rural areas in the states of Pernambuco and Bahia, and aimed at expanding the network of partnerships and agents, as well as improving communication within the network.

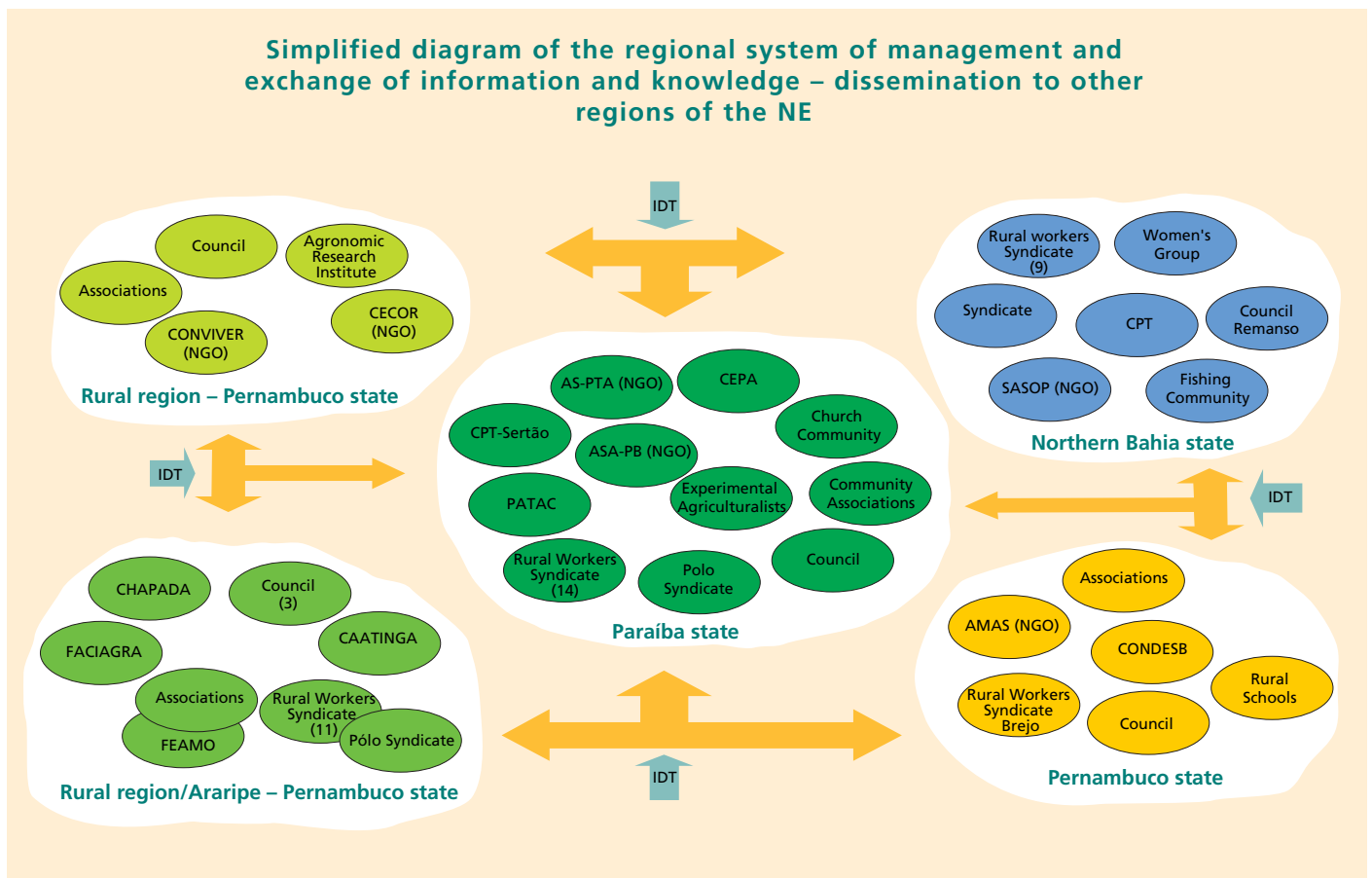
As a consequence of this work, an Agroecological Information System was designed to promote a better flow of agroecological information and practical knowledge for sustainable rural development (see page 3).



Publications for communicating within rural communities: a case study in the Agreste of Paraíba.

This book presents new approaches to rural communication based on work with communities in Solânea, Remígio and Lagoa Sêca. These were found to be extremely effective in facilitating full understanding of the leaflets, folders and other material.

## Simplified diagram of the regional system of management and exchange of information and knowledge – dissemination to other regions of the NE



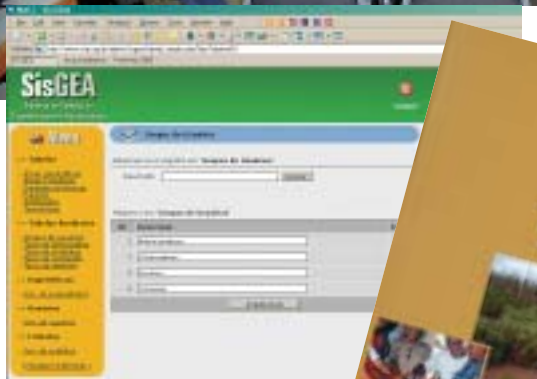


## AGROECOLOGICAL INFORMATION MANAGEMENT SYSTEM

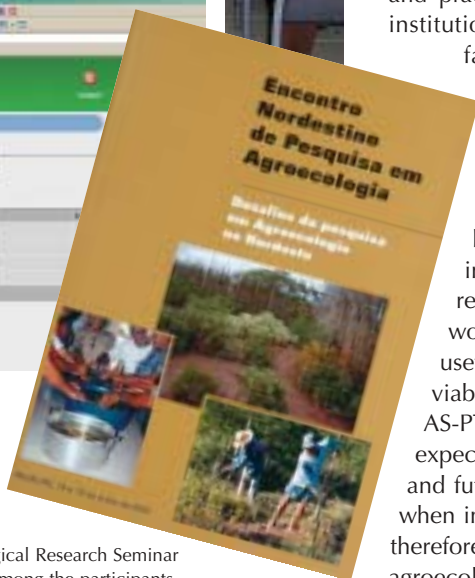
Seeking to integrate research and practical agricultural knowledge between academic institutions and agencies, working towards sustainable rural development in the region.

The Northeast Agroecological Research Seminar in July 2002 highlighted the need to develop a system for organising research and practical methods in agroecology in the region. Research institutions and NGOs working in agroecology acted as facilitators in bringing together researchers and agriculturalists in the region.

IDT developed an internet communications system based at CNIP to gather and make available descriptions of the results of research and practice of local small-holders, including literature references. This system will, in turn, serve as a focal point for interaction between researchers, their institutions, small-holders and NGOs working with agroecology, so as to increase the flow of useful information and knowledge. To ensure long term viability, this system will be decentralised and integrated with AS-PTA's Documentation Centre in Rio de Janeiro. It is expected that the partners will be involved in the management and future development of the system, and will make use of it when implementing agroecological initiatives in NE Brazil. It is, therefore, of crucial importance to identify and catalogue all the agroecological experience in the region that has been databased.



Agroecological communications system.



Book on Northeast Agroecological Research Seminar published and distributed among the participants.

## CONSOLIDATION OF A NATIONAL AND INTERNATIONAL NETWORK OF PLANT SPECIALISTS TO DEVELOP THE CORE DATABASE OF SEED PLANTS OF NORTHEAST BRAZIL

The most comprehensive web-accessible plant list so far created for NE Brazil, currently including over 8000 species.



Alicioli Galdino Jr (CNPq's fellowship) checking plant information to be inserted in the check list of NE Brazil

Critically important for this project has been the success of IDT in securing the voluntary collaboration generously given by approximately 100 taxonomic specialists from Brazil, the UK and many other countries. Today the database represents the biggest database on the plant biodiversity of this region currently available.

Photo: Vinicius Lubambo



Flower of Umbuzeiro (*Spondias tuberosa*)

So far, 75% of scientific names have been revised by taxonomists and incorporated into the database. Kew's contribution over the last 6 months saw the revision of 2,700 names from the Compositae, Eriocaulaceae, Leguminosae, Poaceae, Loganiaceae and Chrysobalanaceae families. It is expected that the remaining 25% of scientific names will be completed over the next 6 months. The completion of this work is fundamental to the support of other PNE projects, as well as for the consolidation of the established network of specialists and for the sustainability of CNIP as a high quality provider of plant information.



Flower Macela do reino-flor (*Egletes viscosa*)

# SURVEY OF LITERATURE ON USEFUL SPECIES OF NORTHEAST OF BRAZIL

The community of Paraíba state identified most of the top priority species within the semi-arid biome of NE Brazil.



Sidclay Pereira (CNPq's fellowship) collecting information on the use and management of the selected species at Kew

Knowing what plants occur in NE Brazil is only the beginning. PNE seeks to know which are the most important for people. A huge literature exists, but it is of extremely variable quality. The data are not always documented satisfactorily and their verification is often complex. Even if the uses can be verified, we also have to be sure that the plant was correctly named in the first place.



Book containing information on 15 top priority species, their use, management and botanical descriptions.

identification and later deposited in the university herbarium. As a result of this exercise, it was possible to validate most of the names on the list taxonomically, linking vernacular names with their respective scientific names, thus broadening the usefulness of the surveys throughout the region. The next step is to validate the remaining names on the list. Information about the selected species was also gathered from elsewhere in Brazil, from international literature and from databases at RBC, Kew.

IDT tackled this problem in the first instance by encouraging feedback from rural people. Systematic surveys of plant uses were carried out at community level in Paraíba state. Two vital results of these surveys were a list of 250 species selected for their importance by the rural people themselves, from which 29 were selected as priorities, and the emergence of a clear demand from the communities for more information on these plants. Using this list, researchers and the local communities collaborated in collecting specimens of 250 species, which were sent to the botanical laboratory of the Federal University of Paraíba for proper

Through this innovative project, the rural people themselves have probably identified most of the top priority species within the semi-arid biome of NE Brazil. The systematic survey carried out in Paraíba state and an evaluation of the published literature, together with the creation of a database on the 29 most useful species of Northeast Brazil, served as a basis for the publication 'Useful Plants of Northeast Brazil', which contains 15 information sheets on the top priority species and includes botanical descriptions, uses and management. These have now been inserted into CNIP's database and are available on the internet.

## OTHER DISSEMINATION MATERIAL

Based on the results of previous projects on medicinal and forage plants, the IDT project produced a series of informative folders on medicinal and forage species containing information about the nomenclature and main uses etc. of the plants.



Photo: Betania Araujo

Cíntia Gamarra (IDT) and Genilse Maria Cândido training school children on the use of the education games in Serra Negra, Pernambuco state



A series of environmental education products aimed at school children were produced and introduced in rural and urban schools in the region, e.g. memory games etc.

# RESEARCH AND DEVELOPMENT ON NATIVE FRUIT TREES: AN AGROECOLOGICAL APPROACH

**Linking sustainable use of plant resources to development: 15 rural communities in 8 municipalities in Paraíba state highlighted several native fruits with potential for improving livelihoods.**



Photo: Paul Little

A participatory rural appraisal (PRA) on the use of native fruits carried out in July 2002, involving 15 rural communities in 8 municipalities in Paraíba state, highlighted several native fruits with potential for improving livelihoods. Although many of the native fruits were already being used for consumption by the local community 'au naturel', the PRA identified a number of limiting factors in their use, for example, poor knowledge of the fruits' properties and qualities, and of their location and utilisation, as well as a shortage of technical skills in their processing and commercialisation.

As a result, a proposal was developed with the aim of improving the efficient use of these fruits through capacity building of small holders in methods of processing, commercialisation and marketing. This could, in turn, provide more stability for family agricultural systems, thus improving food supply and earnings for low income rural small holders. PNE contributes, through this recent IDT project, by using its rapidly increasing experience in building institutional alliances, nationally and internationally. Besides providing new funding opportunities, innovation in research and technology from other parts of the world is focused onto NE Brazil. Using the UK PNE base at RBG Kew, important new links have been built with organisations in UK and Germany.

Folders containing information on the different uses of native fruits. Cajueiro (*Anacardium occidentale*, Anacardiaceae); Jenipapo (*Genipa americana*, Rubiaceae); Mangabeira (*Hancornia speciosa*, Apocynaceae); Macaíba or Macaúba (*Acrocomia aculeata*, Arecaceae (Palmae)); Pé-de-Araça (*Psidium araca*, Myrtaceae); Maracujazeiro-Amarelo (*Passiflora edulis*, Passifloraceae)

Photo: Betania Araujo



Dr Guillermo Gamarra (IDT) and small holders during the participatory rural appraisal with native fruit trees in Paraíba state.

Photo: Alcioi Galvão Jr



Home made desserts, jams and liqueurs made with native fruits by the ladies of Vila Velha, Pernambuco state.

## THE FUTURE OF PNE'S INFORMATION DISSEMINATION AND TRAINING INITIATIVE

On reviewing the IDT achievements of the last 5 years, it soon becomes clear that a great deal of work still needs to be done. Lessons can be learned and current successes need to be built upon in order to ensure that the long-term objectives of PNE are realised.

To sustain such a collective enterprise as the IDT, it is crucial that the various network partnerships, upon which it depends, continue to grow and flourish. This will take time and commitment. Throughout this project, a major challenge for PNE has been to bridge the "cultural" gulf that exists between scientists, community workers and rural people themselves. IDT found itself confronting the need not only to provide the base information, but also to maintain

effective channels of communication between the various partners.

Finding ways of making all the special interests and agendas pull together, for the benefit of all, is a key skill, at which the PNE Programme - a leader of major multi-institutional consortia in the region through the Associação Plantas do Nordeste - is now proving itself highly adept. Thus, in addition to the question of finding further funding and sponsorship, it is now clear that the future of the PNE initiative will depend also on how successfully the contributions of the various partner organisations can be harnessed and maintained.

PNE team

## TRAINING

First Brahm's course given by Gustavo Borges, CNPq's fellowship, in Pernambuco state



Photo: CNIP's image database



Photo: CNIP's image database

Geographical Information System (GIS) course given at CNIP by André Maurício Santos of UFPE

### IDT Project Staff members

Frans Pareyn (Project Coordinator)  
Eduardo Dalcin (CNIP Coordinator)  
Cíntia Gamarra (Information Officer and CNIP Co-coordinator)  
Guillermo Gamarra (Project Researcher)  
Marcelino Lima (Project Development Officer)  
Betania Araujo (Project Communication Officer and Secretary)  
Lúcia Helena Vieira da Cruz (Project Financial Administration)  
Cynthia Sothers (Plant Checklist Botanist)  
Cláudia Albuquerque de Lima (Project Communication Officer)  
Adriana Freire (Project Communication Officer)  
Clive Beale (Project Repatriation Officer)  
Bob Allkin (TCO)

### Current Fellowships (CNPq-PNE) and Trainees – in alphabetical order

Alcioli Galdino dos Santos Jr  
Alissandra Nunes  
Alyne Carneiro de Mesquita (Trainee)  
Gustavo Marques Borges  
Raimundo Pereira de Sá Jr  
Sidclay Cordeiro Pereira

### Previous Scholarships – in alphabetical order

Francisco Machado  
Mariana Paranhos (Trainee)  
Mauricea Tschá  
Natasha Pinheiro (Trainee)  
Rodrigo Lopes (Trainee)  
Verlúcia Santos Barbosa



## The Association Plantas do Nordeste (APNE)

is an NGO founded in 1994 to manage the PNE Programme – a Bilateral Programme of International Cooperation linking RBG Kew, APNE and CNPq. Current projects within PNE Programme are: IDT, Fuelwood, PATAX, Guias de Campo and Flora da Bahia.

Other APNE Programmes are: IMSEAR, REDE DE SEMENTES, PROBIO/CHAPADA DIAMANTINA and ECOREGIONS (TNC).

APNE's mission is to increase the knowledge and understanding of the native plants of Northeastern Brazil, so to as enable better environmental management through conservation and sustainable use of the vegetation and thereby contributing to the quality of life of the local people.

APNE has three main areas of activity: Research, Training and Capacity Building, and Information Dissemination. The research consists of three major topics: Biodiversity & Conservation, Ecosystem Management & Economic Botany, and Plant Information.

APNE is run by a General Assembly and a Board whose main responsibility is to establish the objectives and direction for APNE. The current President is Jair Virgínio, Gerente Geral de Defesa e Fiscalização Agropecuária (jair@elogica.com.br) and the Vice-President is Dr Maria de Fátima Agra, Federal University of Paraíba (agramf@lfp.ufpb.br).

APNE raises funds independently to support its activities and receives support from CNPq, the British Government, RBG Kew, private organisations and individuals. The General Coordinator and Executive Director is Frans Pareyn.

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