Over 97% of the world’s water is saline and in oceans. Of the 2.5% of water which is fresh, only 3% is directly available as part of the cycle of rainfall and evaporation, in rivers and lakes; the rest is in ice, permanent snow, and fossil groundwater. The United Nations Food and Agriculture Organization (FAO) is in no doubt that “human demands are about to collide with the ability of the hydrological cycle to supply water”. The consequences for agriculture will be drastic.

The theft of water by farmers from a community water supply project in Kenya made news in the North recently. Water was being diverted for irrigation of mange-tout peas, a chic item on European dinner tables. Along with strawberries and soft fruits, these peas are grown in increasing volumes in many parts of Africa and air-freighted to meet out-of-season demand in European markets.

The export of food crops and other biomass also represents the export of a very scarce resource — water. According to A M Shady, President of the International Commission on Irrigation and Drainage, “To produce more food and fibre with less water is the challenge for the 21st century”.

In sub-Saharan Africa, virtually all farmers practise rain-fed farming, but this is increasingly subject to unreliable and short rainy seasons, drought and other forms of climate change. Closing the gap between the growth rates of population and a reliable food supply through intensified production requires a two-pronged approach: intensified water harvesting and conservation, and intensified irrigation.

Low-cost methods exist for improved water harvesting: rehabilitation and protection of water catchments to reduce erosion, floods and silting; prevention of loss through evaporation and leakage; management of groundwater resources; and improved storage. Improved attention to conservation measures can also bring important savings.

Major savings can be achieved through more efficient irrigation, such as drip methods, and through changes in cropping patterns, using mixes of less water-intensive crops, shifting the cropping period into seasons where there is less evaporation, and improving the water-holding capacity of the soil.

Using treated waste water in irrigation has great potential, especially in peri-urban agriculture, when water from industrial and domestic sources could be used. It also requires investment. According to the International Food Policy Research Institute (IFPRI) in Washington, USA, this approach could provide the major long-term irrigation supply in those countries suffering from ‘water stress’.

‘The vision thing’

Overall water policies are slowly emerging at national and global levels, with increased activity during 1998: conferences hosted by the French government in Marseilles, and by UNESCO in June. World Water Day (March 22), organised in 1998 by the International Reference Centre on Community Water Supply, focused on groundwater. The United Nations designated the April 1998 session of its Commission on Sustainable Development to be devoted entirely to freshwater resources. Two years from now, on World Water Day...
A world of bananas!

In 1996, the European banana import regime was under attack by the World Trade Organisation (WTO). The United States, supported by three major multinational corporations in the banana industry along with four Latin American countries, placed pressure on Europe to comply with trade obligations regarding its banana import regime, as they deemed it was functioning illegally. Their objective is to withdraw many concessions in the coming year culminating in the final stage of modifying fundamental rules of the Common Market Organization for Bananas (CMOB), which had been adopted at Marrakech in 1995. The new legislation may be very detrimental to member states of the ACP. The possibilities for growth of ACP member states, traditional suppliers to Europe, depends upon unfruitful negotiations regarding repartition of quotas. The extent of the current socio-economic crisis, which could prompt WTO to take corrective measures, is already quite alarming for other Caribbean countries where banana production is the main revenue source and, in particular, St Lucia, which for several years now, these countries have suffered from diminished competitiveness because they have not made needed structural changes. However, opportunities for diversification exist, these include: the opening up of other markets, the decentralization of production and commercialization of high quality products such as organic bananas and the fair trade banana. But it is wise to be realistic, the roads to diversification, although realistic, are not without their challenges.

INTERNATIONAL FRESHWATER CONFLICT

A study published in August 1997 by Green Cross International—a world environmental group chaired by former Soviet leader Michael Gorbachev—points to at least 16 international freshwater conflicts, with seven rivers in Africa.

1. Volta (Burkina Faso, Ghana, Togo, Côte d’Ivoire, Benin, Mali)
2. Niger (Nigeria, Niger, Chad, Cameroon)
3. Nile (Sudan, Egypt, Ethiopia, Kenya, Tanzania, Somalia, Sudan, Ethiopia, Zimbabwe, Somalia, Eritrea, etc.).
4. Chobe (Botswana, Namibia, Angola): ‘tense’
5. Mekong (Laos, Thailand, Cambodia, Vietnam, China, Myanmar): ‘tense’
6. Omo (Ethiopia, Eritrea, Sudan, Kenya): ‘tense’
7. Otago (New Zealand, Australia, Papua New Guinea, Indonesia): ‘tense’
8. Senegal (Senegal, Mauritania, Guinea): ‘tense’
10. Komati (Swaziland, South Africa, Mozambique)
11. Chobe (Botswana, Namibia, Angola): ‘tense’
12. Nile (Sudan, Egypt, Ethiopia, Kenya, Tanzania, Somalia, Sudan, Ethiopia, Zimbabwe, Somalia, Eritrea, etc.).
14. Omo (Ethiopia, Eritrea, Sudan, Kenya): ‘tense’
15. Otago (New Zealand, Australia, Papua New Guinea, Indonesia): ‘tense’
16. Senegal (Senegal, Mauritania, Guinea): ‘tense’

WATER: WILL THERE BE CONFLICTS?

It may be necessary, suggests IFPRI, to “help small irrigation farmers, particularly with partnerships that will give them access to capital, know-how and market channels.” To compete at all, the farmer must at least half the ACP States, the implementation of pricing policies will have to take into account the possible economic and social impact on the peri-urban and rural poor. It is recognized at national and global levels that many strongly water stressed countries will become less self-sufficient in food production—indeed the idea already is being floated of one country abandoning agriculture.

There is a real danger that water scarcity will lead to local unrest, and even internatio-nal conflict. The hope of M. Shady that mankind will never have to fight over water is not yet a promise that mankind can make to itself.

W H I C H  C O U N T R Y  I S  D E S C R I B E D  H E R E ?

The export of food crops and other biomass also represents the export of a very scarce resource—water: low-cost methods exist for improved water harvesting, improved attention to conservation measures can also bring important savings.

The value of local and regional markets is yet to be fully appreciated.
As domestic consumer demand is con-
stantly increasing, the retail market dynamics
depend on producers’ capacity to maintain adequate sustainable production levels,
while staying off postharvest banana losses.
The most common cropping practice involves extending yearly production over a period as possible. Soil fertility is crucial for the success of this strategy. In Cameroon and Rwanda, on volcanic soils in the Dominican Republic, and on river
allovia in the humid intertropical zone, plantation growers have adopted a sustainable production strategy, and this crop is often their main source of income.

In Ghana, consumer demand for plant-
ain is high and its retail price is steadily ris-
ing, however production has been stagnant for 10 years. This situation could be turned around by planting high yield, strongly pest and disease resistant, cultivated plantain varieties. Postharvest plantain losses are generally heavy and are estimated at about 3 million tonnes annually, and these losses are in retail markets.

They lose a substantial portion of their overall production during the rainy season because of the very long distances along poor roads that have to be traveled to the nearest urban markets. The EU has set up a system whereby farmers can rent vehicles to facilitate getting to local markets. Still, afforestation the roads represents the most efficient way of promoting trade to exter-
cultural markets. Cameroon is a case in point, there are now paved roads allowing com-
petically easy access to the main markets and the capital.

The overall aim is to export Cape Verde labelled organic bananas and capture a substantial 80% of the organic banana market, and to establish agreements. Whole bunches are transported to market, and collectors are put in bags and carried out manually to the nearest urban market. The bananas are then loaded on lorries by drivers who are paid to drive the road. A lorry driver is then paid to transport the fruit to market, and collectors who sell to retailers on a per-finger basis.

Middlemen have a key role in the plan-
tain marketing subsector — from the wholesaler to the retailer. As this domain is becoming increasingly complicated, producers are forced to produce greater quantities of higher-quality plantain, more regularly, and at lower cost. Marketing strategies are gath-
ered by middlemen based on the basis of infor-

mation they obtain on selling prices, purchasing terms, and the competitive professionalizing the subsector, the most organized of these go-betweens (dealers, transport agents, etc.) could become key stakeholders and thereby influence domes-
tic market patterns.

Reducing postharvest losses

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stantly increasing, the retail market dynamics depend on producers’ capacity to maintain adequate sustainable production levels, while staying off postharvest banana losses. The most common cropping practice involves extending yearly production over a period as possible. Soil fertility is crucial for the success of this strategy. In Cameroon and Rwanda, on volcanic soils in the Dominican Republic, and on river
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"<Image>"
IN BRIEF

CABI CD-ROM
A Crop Protection Compendium
The Land
A Directory for Southern Africa

Lucid
An electronic package for the delivery and presentation of taxonomic data, Lucid has been developed by the Co-operative Research Centre for Tropical Pest Management (now known as the Australian Centre for International Agricultural Research). Lucid is a joint venture with the University of Queensland and the Commonwealth Scientific and Industrial Research Organisation, in Australia. The Lucid system is a database that the publisher claims provides a new approach to dealing with taxonomic data, cans be found on the Internet.

The Land
Land is at the heart of many current problems in the world of natural resources. Related to degradation of soil, water, forests and farmlands, natural disasters, pollution, or the shrinking genetic base, the problems impinge on a wide range of disciplines. These call for a substantial base of knowledge upon which informed decisions can be made. The Land Use Society launched a new journal in 1997 to support this process and to provide a forum for discussion and information on the use and management of land in its broadest sense.

A Directory for Southern Africa

The move by land users to acknowledge the aspirations and perceptions of farmers, and the potential of new information sources as a basis for sound planning are just two of the many changes taking place in the first world agriculture and land. The second issue investigates among other things, several case studies in Africa including land tenure, land evaluation, and land degradation.

The editors are calling for articles, technical notes, research papers and letters which can be submitted in English, French or Spanish. The Editor's Mailbag is open to receive queries on practical problems.

Lucid is available on the CD-ROM and has an accompanying booklet. It provides an identification system in two modules, a builder to construct the identification system, a set of panels to view and interact with the data. According to CABI, the package provides a comprehensive search and query system for information and the means to construct browsing and educational tools.

A free trial copy and the full details are available online at:

http://www.cabi.org/cabi/cad

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Useful newsletters launched

A Crop Protection Compendium
The Land
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A Directory for Southern Africa
Manure sheds and milk production: encouraging results in Senegal

Raising cattle in cowheds is proving to be a great success in the cotton growing area of Senegal. The local textile fibre development company (Sofel) is encouraging this practice, and the manure that is generated is being used as a fertilizer and for producing biogas.

The cowshed system is viable, according to a recent study conducted on twelve family smallholdings in villages around the town of Tambacounda. Sales of milk and milk products are also good. The production of manure is well in excess of the costs of the health treatments and the cattle feed. Profits are even higher for farmers who have converted their cowheds to cowsheds. Still, the system depends heavily on Sofel’s cotton seed price subsidies. Even so, manure not used to help conserve natural resources, which benefit rural people. For this reason alone this innovation deserves to be supported as an integral part of the cotton production chain, and it should help maintain productivity over the long term.

The cowshed system is a “technology package” which results in organic manure for fertilizers and for producing biogas.

PELUM Association

A “college without walls” is gaining strength in Zimbabwe and in June this year it will begin to offer training in sustainable agriculture, community and culture management. This pilot project being established under the auspices of the PELUM (Participatory Ecological Land Use Management) Association was launched in 1995 based on a four-year planning period by NGOs in Eastern and Southern Africa. It is optimistic about its long-term potential to help increase food production, survival largely because it believes its roots are firmly in the region and it is evolving as a direct result of the support of donor agencies, according to a recent study conducted in 1998.

The PELUM College in Zimbabwe draws on the resources of 15 organisations to fulfil its role in training NGO staff with an ultimate aim of solving the continuing problems such as land degradation, top-down extension, and ad hoc NGO activity. PELUM itself was officially launched in 1995 based on a four-year planning period by NGOs in Eastern and Southern Africa. It is optimistic about its long-term potential to help increase food production, survival largely because it believes its roots are firmly in the region and it is evolving as a direct result of the support of donor agencies, according to a recent study conducted in 1998.

New on the Web

■ NEW PARTNERSHIP FOR IMPROVED MUSA (BANANAS AND PLANTAINS)

PRO MUSA (a Global Programme for Musa Improvement) is a research network created on the initiative of INBAP and the World Bank. Launched in 1997, the network brings together researchers into thematic clusters to develop strategies; to promote the development of improved varieties of Musa and to disseminate them to producers through national Agricultural Research Systems (NARS), and to facilitate and encourage partnerships between national systems, institutes and international agricultural research centres.

http://www.inbap.org/promusa/ (PRO MUSA) - House of banana and plantain: producers associations, research centres, etc.

■ Contact: INBAP Agriculture Science Park, Annexe 34379 Montpellier cedex 5, France. Fax: +33 4 67 61 03 34 Email: inbap@inbap.org


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Electronic journal on www

The electronic journal Livestock Research for Development on livestock research on donkeys was supported by CTA in its early years. In July 1999 it was a part of the Internet’s World Wide Web enabling researchers and development workers to access information as soon as it had been approved for dissemination.

The journal is now considered sustainable and no longer dependent on donor agencies. It was conceived by Dr Thomas Preston who co-founded it with Dr Adrian Boddington of Oxford University. It was one of the first scientific journals to be made available exclusively in electronic format, free, and was published by the Commonwealth Fund for Research in Sustainable Agricultural Systems. It is now available in HTML and PDF format on the World Wide Web and it can be easily downloaded from the Internet as a complete issue.

The tenth anniversary of the journal is being commemorated by the publication of the first volume of a compilation CD-ROM holding a complete set of back issues, plus a scanned version of the entire Journal of Tropical Animal Production which ran from 1985 to 1995.

■ Web site: http://www.plants.ox.ac.uk/elejonline/homepage/
Climate change: can we change our horizons?

Drastic changes in the world’s climate are predicted over the next few decades. Apparently inevitable, they will force whole countries and cultures in ACP States and beyond to adapt to their ways of life, and their agriculture. Yet the reality of meeting today’s needs stands between them and the overwhelming changes which lie just over the horizon.

Youba Sokona sees the UNFCCC climate change meeting in Kyoto, Japan, in December 1997 as a missed opportunity to deal with urgent immediate and long-term challenges.

We have to find ways and means to explain the nature of the changes that will probably happen. It is hard to explain to the small fishing communities on the Petit Côte in Senegal, for example, that their livelihoods will probably disappear as a result of sea-level rises and coastal erosion, but it must be done, and in a positive way that will not sow panic. Many people in the North see climate change as a threat to their way of life, which should be protected at almost any cost. They should look more at their own perspective, and understand that the scenarios in store for Africa will affect them too.

We are driven by our short-term needs, sometimes knowingly at the expense of future generations. We also suffer from our own capacity constraints. The views expressed are those of the author and do not necessarily reflect those of CTA.

Climate change can have dramatic consequences in ACP States, and in Senegal, as Mamadou Ndiaye, of the Eaux et Forêts (Forestry department) in Mbacké, Senegal, writes in his viewpoint article in Spore 71:

The area where we live is wooded savannah, which colours the oil red; this is a provitamin A which allows the body to elaborate its vitamin A. Whitening palm oil also produces a very poisonous and suffocating substance, acrolein, which is carried in smoke. It is the housewives who suffer from this.”

H uman actions can contribute to climate change, mainly through combustion of fossil fuels, land-use changes and agriculture. These have increased greenhouse gases in the atmosphere (mainly carbon dioxide, methane and nitrous oxides) which reflect back part of the earth’s warmth to its surface, causing global warming. World temperatures are expected to rise by 2°C by 2100 if human activities continue as they are, perhaps leading to different climatic conditions on different levels and more frequent severe climatic events such as droughts and storms.

For ordinary people and political leaders in Africa, climate change is not an immediate priority; our focus is on immediate needs and problems. Structural adjustment has imposed short-term perspectives upon us: many people in the North have the freedom of longer-term perspectives.

The Kyoto meeting reaffirmed social and economic development and poverty alleviation as developing countries’ top priorities; reduction of greenhouse gas emissions is a second priority. The major efforts to reduce these gases are needed in the industrialised world and the decisions to cut them by 5% over the next ten years compare badly with the reduction of 20% plus, that is actually needed now.

Sharing the effects, not the blame

Africa is not a major contributor of greenhouse gas emissions – it has emissions amount to less than 8% of the world’s total. It is, however, very vulnerable to climate change. Experts on the International Panel on Climate Change predict more widespread drought in Saharan and Sahelian countries. Lower rainfall will lead to soil degradation, lower arable and pastoral production and chronic food supply shortages.

In general, considerable loss of biodiversity and severe damage to transport and communication networks are forecast. Worst of all, large-scale human migration and political instability are predicted, with social unrest and breakdown and impacting other continents through migration and terrorism. How much of this can we prevent?

We can reduce the footprint of African agriculture on the environment and improve production, through better resource management, agro-forestry, and rational land-use. At the same time, our predominantly peasant-based farming has to shift to more intensified production. Some approaches can both meet immediate needs and help to minimise the effect of greenhouse gas emissions.

ENDA’s Sypro programme in Senegal has successfully irrigated seedlings to reduce the barren soil, increase production and create carbon sinks, which in turn support trees that capture carbon dioxide and remove them from the atmosphere.

Despite our disappointments in Kyoto, we have to seize every opportunity, especially for our own capacity building. The Clean Development mechanism proposed by Brazil is one such chance. Since the Rio Earth Summit in 1992, where Heads of State of most nations met for the first time to discuss global environment and development issues, awareness has grown that solutions cannot be imposed, and that in Africa we have to create capacities to allow people to make and take their own decisions. Remember that only a handful of Africans are professionally involved in climate change compared with hundreds in Europe and thousands in North America. When we have built up our capacities, our decisions including the future of African agriculture will be very different from those we are locked into now.

The need to know
Seminars on new EU measures for food security in ACP States

In the present economic and political context, significant changes are taking place in food and agricultural trade. The EU is being placed on developing seamless, flexible, sectoral tools designed to:
- improve market supply through support to local producers (food purchase, and so-called triangular operations);
- facilitate the process of vulnerable groups to basic food; helping in the region, and providing food;
- create a stable and responsive political and economic climate to encourage long-term food security policies.

Between 4 and 10 November 1997, CTA and the Food and Agriculture Organisation of the United Nations organised a series of three seminars based on this new set of measures. This was done against a backdrop of a variety of issues, especially with regard to sub-Saharan Africa. The seminars were intended to inform and encourage discussion about the new measures with ACP decision-makers (Permanent Secretary level of Ministries of Agriculture, Economic Affairs and Trade) and with representatives of various organisations, all of whom were actively involved in this domain. The four regions of the EU, and the Caribbean, were represented.

Each participant approached the seminars with their own particular perspective, and vision, and together discussed various sections of the new measures and their tools, such as aid in kind, financial aid, counter-party funding and foreign exchange arrangements. A set of case studies underlined just how diverse (e.g. countries in a critical state, in the process of rehabilitation, and with a high level of food insecurity) and complex situations of food insecurity are, as well as the difficulties of implementing corrective steps. It was recognised that it was not enough for the State to create an institutional and economic framework to protect the poorest of the poor. Further incentives, especially with regard to sub-Saharan Agriculture: research: strengthening the contribution of universities

Universities have a significant role to play in agricultural development in sub-Saharan African countries. That is the conclusion of an international workshop held in November 1997 at the ITA (International Institute for Tropical Agriculture) station at Calavi in Benin. The workshop was co-organised by CTA (CTA/Macmillan co-publication 1998, 120 pp., ISBN 0-333-62750-4, format 40x50cm, ISBN 2-87614-248-1), the German development agencies GTZ and DSE. It brought together more than 50 professionals, including 18 managers from universities and research institutions who had undertaken preparatory studies in six African countries on the topic: "Collaborative programmes between European and African universities and research institutions in the context of African development or agrarian development in the ACP (Africa, Caribbean and Pacific) countries participating in the Action Plan of the ACP (ACP countries may also apply)."

The main obstacle to implementation of the workshop recommendations was perceived to be the low level of funding for universities. Other equally important constraints were short-comings in research planning and management, lack of clear policies on extension and communication, lack of monitoring, and lack of incentives for researchers.

The workshops concluded with representatives identifying specific activities which could strengthen the contribution of universities to agricultural research in Africa. As far as the policies, the four regions in the region: setting up a rural credit programme focusing on animal husbandry (including stakeholder, institutional development and management of natural resources).

Drawing on lessons learned and the exchanges of ideas that took place during their visit, the participants drew up a list of those activities that could well be extended to other countries in the region: setting up a rural credit programme focusing on animal husbandry (including stakeholder, institutional development and management of natural resources).

Almost all of the world's 40 million donkeys are kept in less developed countries, where they serve a variety of purposes, such as pack animals, for draft work and riding. Donkeys, by D. Fielding and P. Krause, is a guide for anyone involved in using or breeding these animals. Besides giving details of donkey physiology, nutrition, health and husbandry, this book provides practical information on the use of donkeys as work animals, including training and harnessing aspects and descriptions of the equipment needed for transport and cultivation purposes. There is also a chapter on the interbreeding of the donkey and the horse: the mule and the hinny. Obtaining CTA publications

Publications on CTA's list are available free-of-charge to subscribers. Readers who have applied to become subscribers will, in due course, receive a response to their application, and, if admitted, will be sent two publications order forms, one of which will indicate the number of CTA credit points available to them.

Credit values have been assigned to all the publications on CTA's list. Subscribers can order these publications up to the value of the number of CTA credit points available to them. CTA publications can only be requested on the order forms provided.

Non-subscribers who apply by letter, fax or email will be sent an application form. Applications will be considered from agricultural and rural development organisations in the ACP (Africa, Caribbean and Pacific) Group of States; individuals resident in ACP countries may also apply.

Organisations which work for agricultural and rural development in the ACP States, but are not based in an ACP country, should write to CTA giving details of the organisations they wish to acquire and the reasons why they are needed.
Biodiversity

Biodiversity is a key issue in the general debate about the sustainable use of the world’s natural resources. The report examines how conservation of biodiversity and how this information may be used. The agencies have presented at a workshop held in London in 1999. In order to let to infor- most of field trials of agr ono- mists among communities, for management of soil ero- sion, con- servation and management. It will be of interest to anyone con- cerned with agroforestry: stu- dents, research scientists, soil scientists, agronomists and foresters.

Agroforestry

Agroforestry may make a major contribution to sustain- able land use with its potential, in well-managed systems, to control runoff and erosion, maintain soil organic matter and physical properties, and promote nutrient cycling. CAB International has published the International Centre for Agro- forestry, which contains also information on soil erosion, con- servation, and management. It will be of interest to those who are aware the sustainable use of the

Kenya

A 300-year-old technology developed by farmers in Kenya to protect cereal seedlings is currently being examined by the Forestry Aids Network. Trees chosen for this purpose are multipurpose species and Caesal doremoboly was found to be the most popular species for the task. 60% of farm- ers planted it around their homes. According to the author, Nicholas Mureru, traditional knowledge and practices often help the conservation of bio- diversity and can be used as the basis for developing future forest conservation and tree planting strategies. Adding to their own knowledge, conventional research can help farmers develop their own decision making. The farmers choose certain trees for the milk treatment using certain criteria but the treatment depends on various factors. The study calls for further work to be done with a ‘local’ level. It may be used to inform the local level, for example, the product market potential, and for research to help farmers raise seedlings to their long-term supply of the raw product. A second study published by the Forest Aids Network is the possibility of traditional forest management and local communities, for example, the development of new methods, and for research to help farmers raise seedlings to their long-term supply of the raw product. A second study published by the Forest Aids Network is the possibility of strengthening linkages between farmers and research and extension institutions to recognise traditional forest management and local communities, for example, the product market potential, and for research to help farmers raise seedlings to their long-term supply of the raw product. A second study published by the Forest Aids Network is the possibility of strengthening linkages between farmers and research and extension institutions to recognise traditional forest management and local communities, for example, the product market potential, and for research to help farmers raise seedlings to their long-term supply of the raw product.
EMBRAPA

The Brazilian Agro-pastoral Research Company, EMBRAPA, was set up on 26 April 1973. The company possesses modern laboratories and research stations and is organised into two departments and 37 Research Units, which are situated in very diverse ecological conditions all over Brazil. EMBRAPA's workforce numbers 9,500 including 2,196 researchers (55% possessing a master's degree, and 35% doctorates).

In addition to work directly related to agro-pastoral research, which is carried out at the Company's headquarters, research units and departments, EMBRAPA also coordinates the SNPA (National System for Agro-pastoral research). This is made up of both public and private institutions such as state research enterprises and universities. Among EMBRAPA's priorities are projects aimed at generating employment and productivity. Moreover, it works alongside its partners to: encourage the creation of small or micro agro-industries in Brazil; maximise the use of production resources; improve the quality and competitiveness of agricultural industries; and develop the basis for a sustainable agro-pastoral industry by reducing regional imbalances.

A number of other countries and scientific institutions have also benefited both from EMBRAPA's varied scientific skills and its institutional flexibility. Through agreements and contracts for technical co-operation, EMBRAPA has developed research partnerships, trained research and technical staff, established research and development institutions in developing countries and exchanged or sold genetic materials. It has even registered a number of international patents. Among EMBRAPA's many partners are institutions such as the Rockefeller Foundation, the CGIAR, CIAT, CIMMYT, CIARAD, ICRIASAT, IFPRI. These partnerships extend to over 20 countries, including Argentina, South Africa, Cuba, Egypt, Japan, Australia, Nicaragua, Tunisia and a number of Portuguese-speaking African countries.

Through the SNPA, EMBRAPA is developing programmes in a number of fields, specifically: natural resources; genetic resources; biotechnology; grains; fruit and horticulture; animal husbandry; raw materials; forestry and forest-farming techniques; rationalisation of subsistence and low-yield agriculture; post-harvest, processing and conservation of agropastoral products; environmental protection; agropastoral mechanisation; rural and regional development; support information for research and development projects; technical and financial co-operation with national research, management and institutional administration systems.

INFORMATION SOURCES

Finding funds, sharing success

Who do you turn to when you have a promising project and are looking for an appropriate funder? Both ENDS (Environment and Development Service) may be what you need. They act as ‘brokers’ for projects — in this role they also aid funders who are looking for special projects to invest in.

Independent and professional, with growing support from governments, NGOs and international bodies, Both ENDS is not itself a funder, although this is a role it may develop in the future, possibly with a small grants initiative, but its present priorities are to provide information on where to find funds, and — increasingly — where to locate projects with similar experiences in, for example, agriculture, water management, community organisation and natural resource management.

In the last ten years, Both ENDS has helped almost one thousand development initiatives get started, in its role as a ‘support centre’ for environment and development organisations in the South. Since its inception in 1986, Both ENDS has primarily played a facilitating and responsive role, in addition to its part in the capacity building of the global environmental movement.

Each year, working contacts are made with more than one thousand organisations in Africa, Asia, Latin America, and Europe, and 250 funders and donor agencies. Both ENDS provides a customised information service, including help in developing and submitting funding proposals, advice on fund-raising and entering partnerships, assistance in locating information and in making contact with decision-makers, and support in capacity building and institutional development.

Another important task is to make successful projects known to a wider audience worldwide, through publications, workshops and seminars. Organisations working in similar fields and conditions can thus benefit from the successes of others.

Under its policy plan for 1988 to 2000, Both ENDS will focus on five areas: sustainable land use, energy, urban sustainability, sustainable production and use of raw materials. It will continue its service which provides information on funds and expertise, and will develop a global “Encyclopedia of Sustainability”, with detailed descriptions of where initiatives have succeeded, the conditions of success, and the risks of failure. The “Encyclopedia” will be published in print form and on the World Wide Web to become, Both ENDS say, “not a shelf full of inaccessible, dusty books, but a dynamic, interactive collection of lessons learnt at the field front-line of sustainable development, lessons worthy of replication elsewhere, lessons to inspire.”

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