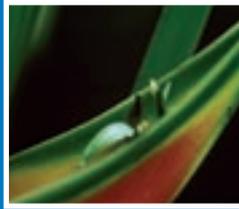




INTERNATIONAL
FOUNDATION FOR
SCIENCE



Annual Report 2003



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Organisation of Islamic Conference Standing Committee on Scientific and
Technological Cooperation (COMSTECH)

Swedish International Development Cooperation Agency (Sida), Sweden

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The United Nations University (UNU)



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IFS 2003

My Years with IFS in Retrospect



Photo: Brian Porter

Bruno Messerli

MY FIRST CONTACT with IFS was at the 25th Jubilee Reception on 26 May 1997, in the library of the Royal Swedish Academy of Engineering Sciences in Stockholm, the place where the IFS Charter had been signed a quarter of a century earlier. There I met Sven Brohult, one of the founders of IFS, and a number of past IFS Directors. It was a unique beginning for me

in this new organisation, and the historical atmosphere of this meeting changed the next day to concrete reality at my first meeting of the Board of Trustees (BOT). The contrast between the pioneering and creative events 25 years earlier and the current situation with many aid-organisations and scientific institutions having started their own programmes of research and capacity building in the developing world, was obvious. Hesitating Donors and declining numbers of applications were signals demanding new ideas, a re-thinking of the IFS mission, an improvement in the communication with Donors, an assessment of IFS' impact, a streamlining of the administration and a discussion of new research areas.

My four year term as Chairman of the Board of Trustees began in 2000. The first two years were quite turbulent: two changes of Directors and the on-going 2000-01 external evaluation created, unavoidably, a sense of insecurity for the staff, the Donors and the Trustees. But in these two quite difficult years I developed a high respect and admiration for the staff. The Deputy Director, Jacques Gaillard, became Acting Director and during every visit to Stockholm I felt the solidarity and responsibility

of all the staff members to do the best for IFS in this period of transition and uncertainty.

With the 30th anniversary of IFS at the end of 2002, with the constructive result of the third external evaluation and with the new director Michael Ståhl began a new period with a longer-term oriented strategic thinking. The "World Summit on Sustainable Development" in Johannesburg 2002 and the following words of the UN Secretary General Kofi Annan were a strong support for the mission of IFS: "What is needed is a true partnership of developed and developing countries – a partnership that includes science and technology. No nation can afford to be without S&T capacity" (Science, Vol. 303, 2004).

Taking into account the "missing generation of scientists in Africa" and considering that countries like China, Mexico, Brazil, India and others have developed highly respected scientific institutions during the past 30 years, IFS had to reconsider its policy. The decision was made to award about 70% of the grants to the so-called low income countries of Sub-Saharan Africa, Central America and the Andean Countries, and South-East Asia with vulnerable scientific infrastructures. This change in policy can potentially favour lower quality applications from the scientifically lesser developed parts of the world. This challenge needs new approaches, more support and a motivated staff! IFS has that capacity and competence; it will be successful!

With my best wishes

Bruno Messerli
Chairman of the Board of Trustees

Message from the Director

2003 WAS THE year when IFS launched a concerted effort to address the situation facing young scientists in Sub-Saharan Africa. In this report we summarise the activities in the sub-continent. However, IFS also paid attention to its target groups in Latin America and Asia. During the year plans were underway to proliferate IFS activities in the less developed countries in Latin America to be started in 2004, while we will do the same in Asia in 2005.

During 2003, IFS implemented policy changes (decided on in 2002) which aim at giving priority attention to countries that are most in need of support due to their relatively vulnerable research infrastructure and deficient national funding mechanisms for young researchers. Evaluation criteria now allow for a positive assessment of proposals which seek to generate scientific knowledge relevant for national and local issues. The age criterion (younger than 40) was relaxed somewhat for applicants from Sub-Saharan Africa, especially considering that women researchers often have to take a time out from science during family raising. Moreover, priority is now given to funding of proposals from less developed countries, including the Least Developed Countries, the Low Income Countries and the Lower Middle Income Countries as classified using UN and World Bank criteria and figures.

An information drive was launched in these countries and IFS staff visited many universities and research institutes in African countries.

As a consequence, the number of applications from low income countries in general and Sub-Saharan Africa in particular soared (see graphs, page 5). Although the approval rate of these applications also increased, IFS still had to cope with a large number of applications which could not be accepted on quality grounds. Moreover

the statistics show that African researchers are less successful than others in securing a second grant from IFS. Nevertheless, many applications showed a scientific potential.

Our response has been to expand capacity enhancing activities to potential applicants based in marginalised institutions with limited exposure to scientific methodology. Interactive workshops have been held where researchers learn how to conceptualise and prepare research proposals, drawing upon the experience of IFS advisers and former grantees as resource persons. Proposal preparation skills are essential for all scientists and IFS is now joining hands with partner organisations to offer these opportunities to increasing numbers of the young generation of researchers.

IFS continues to provide around one-third of its research grants to female applicants, which is a higher proportion than the actual percentage of women in many science institutions. At the same time we realise that a great asset is wasted as women remain grossly underrepresented in the science communities. We started to address this issue in 2003 while planning special initiatives with partner organisations.

Finally, the IFS Secretariat moved to a new office in October. It is spacious and modern and we welcome you to visit us.

Michael Ståhl
Director

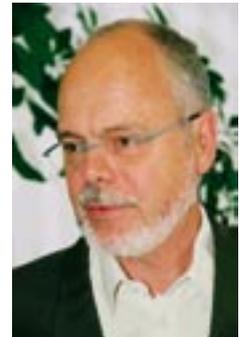


Photo: Brian Porter

Michael Ståhl

Research Grants

IFS RECEIVED 1,356 research applications in 2003. This is a significant increase compared with 2002 (893 applications) and 2001 (678 applications). The number of approved grants for the year was 239 which is above the planned figure (220 grants) and the number of grants approved in prior years (under 200 per year for the past seven years).

There are many factors contributing to the increase in applications. One is that we issued specific calls for applications in ways not done previously. Another reason is that the application form is now more readily available since it can be downloaded from the IFS website. And thirdly, the many activities in Africa raised our visibility there.

The emphasis on researchers in countries with poor scientific infrastructure is reflected in the grants: 57% of the approved grants went to young scientists in Low Income and Lower Middle Income Countries. Moreover, of the approved grants, 109 (46%) were from Sub-Saharan Africa. Thus, the new orientation of IFS to prioritise young scientists in countries with vulnerable scientific infrastructure is well underway.

Two new Research Areas were successfully established. They are "Water Resources" and "Socio-Economic Aspects of the Management of Biological Resources". Scientific Advisory Committees for both research areas were put in place, calls for applications were made and grants were approved (22 grants in Water and 16 in Social Sciences).

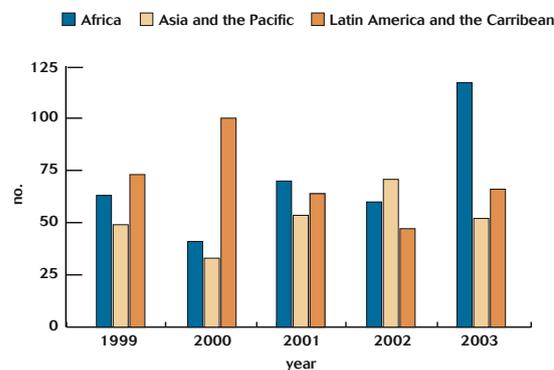


Fig. 1 Geographic distribution of IFS Grants 1999-2003

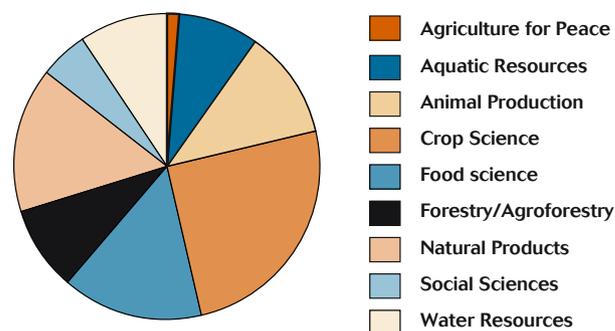


Fig. 2 Distribution of IFS Grants by research area 2003

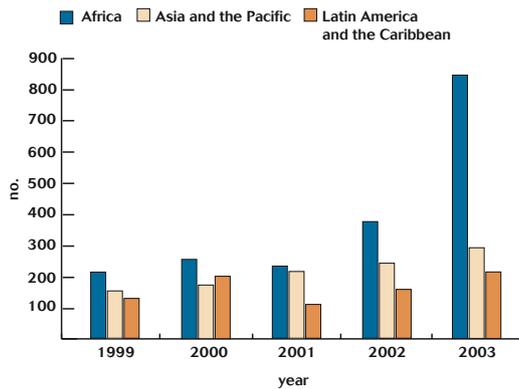


Fig. 3 Geographic distribution of applications for first IFS grant 1999-2003

Grants to women (1978-2003) as % of total

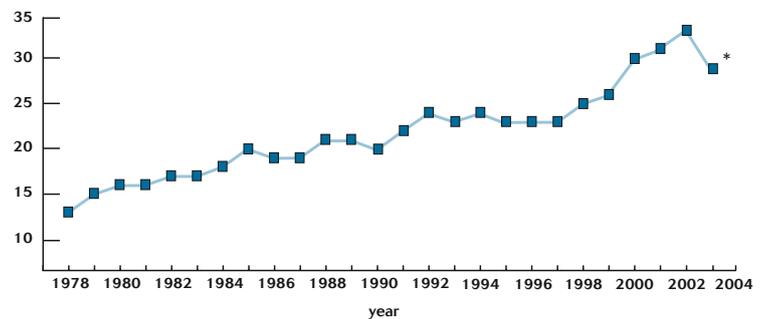


Fig. 4 Grants to women scientists

*This drop is explained by increase of applications from, & grants to, Sub-Saharan African countries where there are fewer women scientists.

Countries which are eligible for IFS support are defined using indicators for assessment of their economic development and their scientific infrastructure.

Researchers based at institutions in the following categories of countries are, in principle, eligible to apply for IFS grants: Low Income Countries (LIC), Lower Middle Income Countries (LMIC) as well as some Upper Middle Income Countries (UMIC), namely those with a below-average GNI/Capita of that category of countries.

IFS gives priority to research applications of satisfactory scientific quality from researchers based in countries classified as LICs and LMICs. This category includes most countries in Sub-Saharan Africa, some countries in Central America and the Andean region as well as a number of countries in Asia. The rationale for this policy

is that researchers based in UMICs in general have much better access to national research funding and infrastructure than their colleagues in LICs and LMICs.

IFS also takes into consideration the scientific infrastructure of countries and gives priority to countries where scientists who are at the beginning of their research career have difficulties to access research funding and research tools.

By 2005 IFS aims at allocating up to 70% of the research grants to scientists from LICs and LMICs, while up to 30% of grants can be allocated to researchers from UMICs.

The policy to prioritise in this way was made operational in 2003. Fig. 5 and 6 illustrate how the policy has impacted on applications and grants.

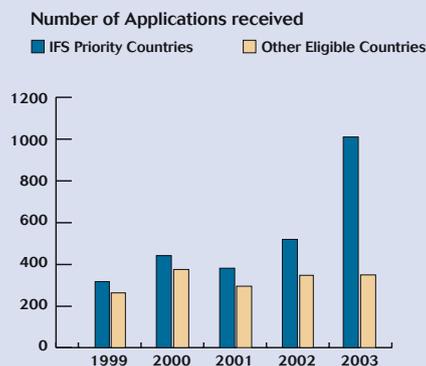


Fig. 5 Distribution of Applications received from IFS priority countries and other eligible countries

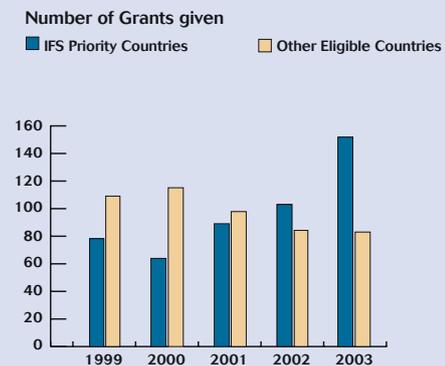


Fig. 6 Distribution of Grants given to IFS priority countries and other eligible countries

Impact Assessment

IT IS WIDELY recognized that among the many preconditions for successfully meeting conservation and development goals in the South, the availability of reliable scientific knowledge and strong national and regional research capacities are critical. However, science infrastructures in the South are, in general, fragile and aging. Structural adjustment and falling investment in national capacity has led to low levels of recruitment of young researchers, thereby threatening the ability of national research communities to reproduce themselves.

Since 1972 the International Foundation for Science (IFS) has supported young researchers in Africa, Asia, and Latin America to carry out research projects on the sustainable management, conservation and utilization of the biological resources base. IFS Impact Studies measure the impact of IFS activities in developing countries and indicate opportunities for future initiatives and investment. The method of analysis, the "Monitoring and Evaluation System for Impact Assessment" (MESIA) has been specifically developed for the evaluation of the capacity strengthening efforts of IFS.

The IFS Impact Studies highlight strengths and weaknesses of national science and technology systems in the South, critically examine the importance of individualised support to young researchers, and indicate opportunities for rejuvenating and mobilising national research capacities to meet conservation and development goals.

The analysis is based on data available in the IFS database, analyses of the scientific output of IFS Grantees, questionnaire surveys, and interviews with scientists and policy makers.

To date, five reports (listed to the right) have been published. The latest, *Scientific Research Capacity in Cameroon: An Assessment of IFS Support*, was published in 2003, in English and French.



IFS Impact Assessment (MESIA) Reports published to date. They are all available on the IFS web at: www.ifs.se or ordered as paper publications from IFS.

- Report No.1 *Monitoring and Evaluation System for Impact Assessment (MESIA), Conceptual Framework and Guidelines*
Gaillard J., 2000. 38 pages.
- Report No.2 *Questionnaire Survey of African Scientists (also available in French)*
Gaillard J. and A. Furó Tullberg, 2001. 92 pages.
- Report No.3 *IFS Impact in Mexico: 25 years of support to scientists*
Gaillard J., J.M. Russell, A. Furó Tullberg, N. Narvaez-Berthelemot and E. Zink, 2001. 152 pages.
- Report No.4 *Strengthening Science Capacity in Tanzania: An Impact Analysis of IFS Support*
Gaillard J., E. Zink, and A. Furó Tullberg, 2002. 104 pages.
- Report No.5 *Scientific Research Capacity in Cameroon: An Assessment of IFS Support (also available in French)*
Gaillard J., E. Zink and A. Furó Tullberg, 2003, 72 pages

25 Years of Science, Technology and IFS in Cameroon

In 2003 IFS completed its fifth Impact Assessment study; Gaillard, J and E. Zink with A. Furó Tullberg, Scientific Research Capacity in Cameroon: An Assessment of IFS Support. A French version is also published (Les capacités de recherche scientifique au Cameroun - une évaluation de l'impact des activités de l'IFS). It is available free of charge from the IFS web (www.ifs.se) or from the IFS Secretariat (pirkko.tolamo@ifs.se).

Highlights of the report:

IFS became an active partner to the Cameroonian science and technology (S&T) community in 1977 when the National Office for Scientific Research and Technology (ONAREST) became an IFS Affiliated Organisation. During the following year, the two first research grants were awarded. From 1977 to 2002 altogether 139 research grants were awarded to 86 young Cameroonian scientists and numerous capacity strengthening activities were implemented.

The report summarises the state of S&T in Cameroon and states that the strong S&T infrastructure established in the 1970s was steadily eroded during the 1990s when a nationwide economic crisis caused the evaporation of national sources of research support. Ensuing declines in the quantity and quality of research led to a drop in the status of researchers. Scarce resources also contributed to a drastic reduction in recruitment of new scientists, and resulted in the ageing of the research community. The IFS study suggests that significantly decreased investment in S&T during the 1990s threatens the sustainability of the science community in Cameroon, and critically undermines one of the pillars of national development.

Nevertheless, the situation of the S&T community in Cameroon in 2003 was one of hope, with young research-

ers beginning to enter the system, and the persistence and strengthening of nodes of highly qualified senior researchers in key centres and departments. The rejuvenation of the Cameroonian science community must build upon these beginnings.

Interviews with IFS grantees showed that access to working equipment, funds, and research facilities are the primary constraints to carrying out research in Cameroon. Poor access to scientific literature, insufficient access to the Internet, and scientific isolation were also key hindrances. The incentives to carry out research decreased. Salaries do not cover the costs of living. Hence, consultancies and farming consume more of researchers' time.

Despite the difficulties and challenges, IFS grantees have largely remained in Cameroon and advanced to become national science leaders. Of 86 grantees in Cameroon, only three left Africa. Many grantees have assumed positions such as Directors of research institutes, Vice Rectors and Deans. At the same time, grantees published regularly in international and national journals.

The impact assessment asked IFS grantees to critically assess the IFS programme of support. The results indicate that IFS has once again received top marks for its core activities: the administration of grants, the project selection process, support for the purchase and shipment of equipment, monitoring and follow-up of research projects, and a high level of personal service at the IFS Secretariat. Areas where grantees were more critical included the provision of scientific counselling, publication support and networking activities.

Images of Cameroon: the third largest Sub-Saharan recipient of IFS support. The impact of the IFS support to scientific research capacity in Cameroon has now been evaluated in a new report.





Emphasis on Sub-Saharan Africa

DURING 2003, IFS successfully raised its profile in Sub-Saharan Africa and increased its initiatives among young scientists. As a precursor, IFS surveyed the opinions of African scientists about research conditions in their institutions. African readers of the IFS eNews were invited to comment on the question as to whether there is a missing generation of scientists in Africa.

Numerous replies were received. The following picture emerged:

- There is a shortage of active researchers in the 25-40 age bracket. It is particularly felt in well-established academic institutions, where staff positions are held by senior scientists who established themselves in the 1970's - 1980's. In many institutions, staff positions have been "frozen" and there are few openings for young degree holders to enter an academic career.
- The young generation of scientists tends to be better represented at newly established universities - private as well as public institutions, away from the capital cities.
- The lack of funds allocated for scientific research is mentioned by all respondents. Many feel marginalized because of the constrained access to research tools (laboratories, scientific journals, IT, the Internet).
- Most institutions where the respondents are based lack funding schemes for MSc and PhD studies. Consequently, BSc graduates spend years scouting for funding opportunities (generally available only through scholarships abroad). Women scientists are often handicapped in their career by family responsibilities. Hence, by the time they qualify to embark on research, many are already past the age IFS sets for eligibility.

Many respondents point to the root cause of the situation: the non-existence of a national policy for scientific research. A contributory cause is insufficient support from immediate academic superiors and the university leadership at large.

Proposed remedies by respondents:

- mobilize more funding opportunities
- create more research positions so that the young scientists can be gainfully engaged in producing new knowledge for the development of their countries
- policymakers must agree on a national policy for science development. The central theme of such a policy should be the recognition of the fact that a generation shift is imminent and that priority support should be channelled to the young generation.



What could IFS do?

The respondents suggest that IFS should

- provide more grants to researchers in African countries
- enter into a dialogue with national science policy makers
- reconsider the age requirements for research grant applicants.

How did IFS respond?

- We have already relaxed the age limit criteria for applicants from Sub-Saharan Africa: citizens of a Sub-Saharan country may still apply for a first grant even though they are over 40 years old, provided that they took their highest academic degree (minimum MSc or equivalent) less than five years before applying and are at the beginning of their research career. Special consideration will be given to the situation of female researchers, as they often have to take “time out” from science while raising children.
- We are intensifying capacity enhancing activities to African scientists through courses on how to conceptualise and prepare research proposals.
- We are revisiting the whole question of mentorship for isolated researchers in vulnerable research infrastructures.
- Together with African partners, we are planning to arrange a high-level workshop about science policy issues to provide a more conducive environment for young scientists.



Photo: Yves Marguerat © IRD

Alongside with projects dealing with agroforestry, IFS also supports projects on the management and sustainable utilisation of forests

Research into the growing, processing, and distribution of food is essential to achieve improvement of nutrition and health in Africa



Photo: Yves Boukvert © IRD



IFS on Tour in East Africa

AS A FOLLOW-UP to the survey, the IFS Director and Deputy Director visited Tanzania, Kenya and Uganda. The tour was efficiently arranged by the Inter-University Council of East Africa (IUCEA). The purpose was to provide information about IFS research support and update ourselves on current research issues in the region. Meetings were held in Morogoro, Dar es Salaam, Nairobi, Eldoret, Kampala, Entebbe and Mbarara. Altogether, 465 persons from 13 universities and research institutions attended - young scientists as well as science leaders and university administrators.

Some observations noted:

- The age issue: many African academics are still in their early career at the age of 40. This is particularly the case for women scientists.
- The fact that an IFS grant does not include a salary component for the grantee can discourage researchers to apply.
- Team grants are widely requested.
- The recently launched Social Sciences initiative at IFS received considerable appreciation.



IFS supported several projects in Sub-Saharan Africa on the sustainable utilisation of marine and fresh water resources by small scale fishermen



IFS Director, Michael Ståhl, with staff of Mbarara University of Science and Technology in Uganda

- Information and communication technologies (ICT) are not globally available. Younger scientists generally have limited access to the Internet and e-mail facilities, and connections are slow and expensive. In the smaller institutions, only the vice-chancellor and heads of department have access to e-mail.
- The smaller universities far away from capital cities feel isolated. A few IFS grants to researchers there would do much to boost the interest in scientific research.

There is a great enthusiasm for science among new graduates and postgraduate students. Their passion is matched only by their frustration with the very limited possibilities for conducting research. The great challenge for science and development policy makers is to provide opportunities for these young people to channel their talent and energy into scientific projects.



Innovations for Development in Eastern and Southern Africa (IDESA)

“INNOVATIONS FOR DEVELOPMENT in Eastern and Southern Africa” (IDESA) is a regional project that aims at stimulating innovativeness and entrepreneurship. The project, supported by Sida (Swedish International Development Cooperation Agency), is a continuation of a Grant and Stimulation Program regarding innovative entrepreneurship in some countries in Southern and Eastern Africa managed by the organisation IDEA (Innovations for Development Association).

For 2003-2004 IDESA was extended to more countries. IFS was nominated by Sida to host and manage this new extended IDESA Project. IDESA organises idea/innovation competitions in eight countries (Kenya, Malawi, Mozambique, Namibia, South Africa, Tanzania, Uganda and Zambia) and awards money prizes to winning projects/ideas. It operates through a scheme that identifies and selects awards and follows up individuals and groups who have submitted creative, innovative and entrepreneurial proposals. Technical innovations as well as innovations which provide a solution to a problem, were qualified for rewards within the framework of the project. Such innovations should directly or indirectly, contribute to an increased, and/or a more efficient, use of available resources or provide other benefits of a similar kind.

The competitions are managed by local National Committees, which nominate the Executive Organisations and are responsible for the announcement of competitions, selection of jury, criteria for assessment, selection of awardees and prizes. In 2003 IDESA awarded 61 prizes to a total sum of SEK 1,000,000.

Professor Sven Uno Skarp is coordinating the IDESA project on a part-time basis.



Photo: Sven Uno Skarp

The President of the Republic of Namibia, Sam Nujoma, hands over the IDESA prize for “Bright Ideas” to Mrs. Matilda Kadhikwa for the enterprise NPM Perfume Namibia



Research Proposal Conceptualisation Workshops

IFS IMPLEMENTED A series of capacity enhancing workshops to train potential applicants/grantees in science methodology required to prepare research projects. Altogether, ten such workshops were held in Africa in 2003 and they gathered 195 participants. Due to the interactive nature of the workshops, a maximum of 20 participants were admitted to each of them. In 2004, IFS will monitor how many of these actually apply for grants and how they fare.

Follow-up workshops to earlier "train the trainers" courses were held in Malawi, Zambia, Swaziland, Zimbabwe, Lesotho, Madagascar and Mali.

Research proposal conceptualisation workshops were held in Uganda, Kenya and Tanzania.

The courses were targeted at researchers in their formative scientific career who are eligible for research grants from IFS and who are about to start up a research project which is in line with the Mission Statement of IFS. The selection of participants was based on concept notes submitted by applicants.

The purpose of the workshops was to enhance the scientific ambit of the participants so that they can formulate their research topics into competitive proposals for funding from IFS or any other research council. The workshops concentrated on fundamentals of empirical scientific inquiry including:

- hypothesis formulation
- literature review
- verification/modification/falsification of the hypothesis
- experimental design
- statistical methods
- equipment and facilities needed to implement the research



Photo: Richard Hall

Concilla Monde Tembo of Zambia at one of the IFS Workshops

- networking with colleagues
- budgeting
- dissemination of results
- application of results.

The workshops were interactive as participants worked on their proposals throughout the workshop and presented them for successive peer reviews.

A positive secondary effect of the IFS proposal writing initiative is the increased awareness of the need for training in proposal writing. Several universities are now considering including it as a recurrent course at Master's level.

Based on the experiences from the workshops held in Africa, IFS will develop appropriate course models for Latin America and Asia for future use.

Conferences and Workshops with IFS Participation

THE FOLLOWING CONFERENCES and workshops were attended by either IFS staff members or IFS Grantees during 2003:

FARA (Forum for Agricultural Research in Africa) Workshop to discuss the Challenge programme: 'Improving Livelihoods and Natural Resource Management in Sub-Saharan Africa', Accra, Ghana, March

FARA Annual Meeting and Conference, Dakar, Senegal, May

"Agriculture for Peace" Expert Meeting and Round Table, Tokyo, Japan, May

Isotope and Analytical Nuclear Technologies for Health and Environment, organised by NARHS (Nutritional and Health Related Environmental Studies) of the International Atomic Energy Agency (IAEA), Vienna, Austria, June

12th World Congress of Food Science and Technology IUFOST (International Union of Food Science and Technology), Chicago, USA, July

NAPRECA (Natural Products Research Network for Eastern and Central Africa) 10th Scientific Symposium, Addis Ababa, Ethiopia, September

TICAD III (The Third Tokyo International Conference on African Development), Tokyo, Japan, September

FAO/IAEA International Symposium on Applications of Gene-Based Technologies for Improving Animal Production and Health in Developing Countries, Vienna, Austria, October

CGIAR (Consultative Group for International Agricultural Research) Annual General Meeting, Nairobi, Kenya, October.



Photo: Cecilia Oman

Participants at the IFS Seminar held in conjunction with the World Water Week and the 13th Stockholm Water Symposium in August, 2003

TWAS (Third World Academy of Sciences) 20th Anniversary Celebration and 9th General Conference, Beijing, China, October

2nd Round Table on Developing Countries Access to Scientific Knowledge, ICTP (International Centre for Theoretical Physics), Trieste, Italy, October.

ASOMPS XI - Eleventh Asian Symposium on Medicinal Plants, Spices and Other Natural Products, Kunming, China, October

UNESCO (United Nations Educational, Scientific and Cultural Organization) Forum on Higher Education, Research and Knowledge, Paris, France, December

Consultative Meeting on Leadership and Management in Higher Education in Africa, Gaborone, Botswana, December

30th Anniversary Conference and Celebration of CODESRIA (the Council for the Development of Social Science Research in Africa), Dakar, Senegal, December

Thematic Workshops

IFS WAS THE ORGANISER or co-organiser and sponsor to the following events:

Food Africa

Improving Food Systems in Sub-Saharan Africa - Responding to a Changing Environment

May 2003, Yaounde, Cameroon.

140 scientists from 30 countries, mainly African, were gathered to discuss the current research and development activities that affect food systems in Sub-Saharan Africa, identify gaps in current food and health research strategies; recommend future research strategies and improve the links between researchers, in particular young scientists, in Africa and Europe.

The event was co-organised with the Natural Resources Institute, Chatham, UK and the Institut de Recherche Médicale et des Plantes Médicinales de Yaoundé, Cameroon. Funding was provided by the Organisation of Islamic Conference Standing Committee on Scientific and Technological Cooperation (COMSTech), the European Union, Helen Keller International, International Science Programme (ISP), Micronutrient Initiative, the Organisation for the Prohibition of Chemical Weapons (OPCW), Rockefeller Foundation and IFS.

CIBIA IV

4th Iberoamerican Congress of Food Engineering Valparaiso, Chile, October 2003.

IFS and CYTED (the Ibero-American Programme on Science and Technology for Development) co-sponsored the participation of 14 Latin American IFS Grantees in CIBIA IV Congress. IFS and CYTED also co-organized a special IFS session on international cooperation, where several of the IFS Grantees presented their work. The presentations provided state-of-the-art update on research in biotech-

nology, food processing, packaging and storage, modelling and simulation, separation process, physical properties of food, transport phenomena, ambient technologies, and emergent technology.

World Water Week 2003

In conjunction with the World Water Week 2003 and the 13th Stockholm Water Symposium, IFS hosted an international seminar, "Strengthening capacity in developing countries for water resources research", 10-14 August, 2003.

Researchers from Bangladesh, Benin, Burkina Faso, Costa Rica, Ethiopia, Jordan, Swaziland and Zimbabwe participated as well as representatives of organisations working on capacity building. The current state of developing country water resources research was summarized in a number of presentations.

The seminar was arranged in collaboration with the Organisation for the Prohibition of Chemical Weapons (OPCW). Financial support was also provided by the International Network for Capacity Building in Integrated Water Management (Cap-Net), the Organization of the Islamic Conference (OIC) Standing Committee on Scientific and Technological Cooperation (COMSTech), and the International Science Programme (ISP).

IFS/Mistra Workshop

Exploitation and Management of Exotic and Naturalized Aquatic Genetic Resources in Relation to Native Biodiversity

Puerto Varras, Chile, 24-26 September 2003.

The workshop brought together 30 experts in aquaculture science and policy from South and North America and Europe to discuss the possible effects of introducing alien species and populations and to provide guidelines to minimize their spread and impact.

Forging New Partnerships

IFS IS INVOLVED IN a dozen joint initiatives with partner organisations. The purpose of these partnerships is to provide more opportunities for scientists in developing countries to undertake high quality research. By pooling the resources of IFS and like minded organisations the participating researchers can broaden their networks and widen their scientific horizons.

In 2003 IFS entered into new partnerships with the following organisations.

International Network for Capacity Building in Integrated Water Resources Management (Cap-Net)

IFS and Cap-Net signed a Memorandum of Understanding for collaborative efforts. Cap-Net is an UNDP project and associated programme of the Global Water Partnership. Its role is to strengthen regional capacity building networks. The regional networks included in the IFS and Cap-Net discussions are the Central American Educational Institutions Network (REDICA) and the Arab Integrated Water Resources Management Network (AWARENET).

International Water Management Institute (IWMI)

IFS and IWMI signed a Memorandum of Understanding. IWMI is a scientific research organisation specialising in research and capacity building in water use for agriculture and integrated management of water and land resources. IWMI belongs to the CGIAR group and works with partners in the South to develop tools and methods to help these countries eradicate poverty and ensure food security through more effective management of their water and land resources.

United Nations University - Institute of Advanced Studies (UNU/IAS)

IFS and UNU/IAS agreed on collaboration regarding the



Photo: Michael Stahl

IFS Deputy Director, Richard Hall, centre, meeting with new partners in Eastern Africa

“Agriculture for Peace” project. It is a split fellowship programme where IFS provides the research grant along with a range of supporting services and UNU/IAS provides multidisciplinary mentorship and training, including a visit to UNU/IAS research facilities. The first fellowships were awarded in december 2003 to three researchers in Sub-Saharan Africa. IFS received over 130 applications for this project, additional financial support is being sought to allow for more grants to be funded.

Nutrition Tiers Monde/Nutrition Third World

IFS and Nutrition Third World agreed to collaborate in order to jointly fund research projects in the field of food science and nutrition.



Natural Products from Marine Organisms

Extract from a report to the IFS Secretariat from the
Center for Protein Studies, University of Havana, Cuba

A brief presentation

THE CENTER FOR Protein Studies (CPS) at The University of Havana was officially founded in 2000. Being a newly created institution it is mainly staffed by young researchers and a few senior scientists.

CPS is devoted to the structural and functional characterization of proteases, protease inhibitors and cytolysins mainly from marine invertebrates and microorganisms and the use of liposomes as immunoadjuvants. CPS has also the responsibility for a MSc Degree in Protein Biochemistry and sponsors a PhD Program in Molecular Biosciences.

Links to IFS

In 1998 one of our young scientists received the first IFS research grant. Since then, five more projects have been supported by IFS and up to now the total financial contribution has reached 594,725 SEK. Currently, the first project is into its second grant and three new projects are in the pipeline. The contribution of IFS to strengthening the capacity of our Center and its researchers to conduct relevant and high quality research has been particularly significant. Because of this, it is a pleasure, and in a certain way a moral commitment, to send this courtesy report. In this report, we mention only projects directly related to the IFS grants; nevertheless, we would like to stress that the real IFS contribution extends to most of the investigations carried out in our Center. Theses that have been defended, publications produced and meetings in which the grantees have participated have been listed in this report. We would like to deeply thank IFS for its contribution to develop future lead scientists and science leaders.

We also thank IFS staff for their personal help to our grantees. In fact, we do agree with the general opinion that "IFS treats grantees as individuals rather than numbers".



Photo: Joel Orenpiller © IFS

Sea anemones are among the many marine organisms being researched at the Center for Protein Studies in Havana

Research profile

A major research priority at CPS has been the search for novel protease inhibitors (PI) from marine organisms, such as sea anemone, with therapeutical potential to counteract parasitic proteases (plasmepsin, falcipain), cancer proteases (cathepsins) and HIV protease. Structure-function studies of PI and cloning and expression of proteases and inhibitors have been carried out. Protein engineering and modeling of PI, proteases and their complexes are also under development. In the field of pore-forming proteins, we have concentrated our efforts on structure-function studies, particularly on protein-membrane interactions and the use of native and genetically modified cytolysins for the construction of immunotoxins against undesirable cells. The potential of cytolysins as immunoadjuvants in liposomes has also been explored. Another important research area is the use of liposomes as immunoadjuvants for low antigenic biomolecules.

IFS support has been critical in all these studies. The research projects supported and resulting publications are listed on the next page.

The IFS Grantees at the Center for Protein Studies in Havana



Maday Alonso del Rivero Antigua



Yamile González González



Omar Gutiérrez Arenas



Adyary Fallarero Linares



Isel Pascual Alonso



Mayra Tejuca Martínez

Research Projects funded with IFS Grants

Novel multicomponent immunotoxin targeted to *Giardia duodenalis*
IFS Grantee (1998): Mayra Tejuca Martínez, PhD

Isolation, characterization and purification of antioxidant compounds from Caribbean seaweeds of *Halimeda* genus
IFS Grantee (1998): Adyary Fallarero Linares (MSc)

Isolation, purification, and characterization of proteinase inhibitors from marine organisms with potential biomedical effectiveness
IFS Grantee (1999): Yamile González González, MSc

Construction of an immunotoxin StI-ior C5 against the colon cancer cell line SW948
IFS Grantee (2002): Mayra Tejuca Martínez, PhD

Isolation, purification and characterization of inhibitors of pyroglutamyl aminopeptidase II (PPII) and dipeptidyl aminopeptidase IV (DAPIV), from marine invertebrates extracts: potential therapeutic agents

IFS Grantee (2002): Isel Pascual Alonso, MSc

Production by recombinant methods and characterization of a carboxypeptidase An inhibitor isolated from a marine invertebrate
IFS Grantee (2002): Maday Alonso del Rivero Antigua, MSc

High-throughput screening, purification and characterization of HIV-1 protease inhibitors from natural sources

IFS Grantee (2003): Omar Gutiérrez Arenas, MSc

Resulting Publications

Tejuca, M., Anderluh, G., Macek, P., Lanio, M. E., Marcet, R., Torres, D., Sarracent, J., Dalla Serra, Alvarez, C., M. & Menestrina, G. Antiparasite activity of sea anemone cytolytins on *Giardia duodenalis* and specific targeting with anti-*Giardia* antibodies. *Int. J. Parasitol.* 29(3), 489-498 (1999).

Gutierrez, O.A., Salas, E., Hernandez, Y., Lissi, E.A., Castrillo, G., Reyes, O., Garay, H., Aguilar, A., Garcia, B., Otero, A., Chavez, M.A. & Duarte, C.A. An immunoenzymatic solid-phase assay for quantitative determination of HIV-1 protease activity. *Analytical Biochemistry* 307(1), 18-24 (2002).

Rivero, F., Fallarero, A., Castañeda, O., Dajas, F., Manta, E., Mancini Filho, J. & Vidal, A. Antioxidant activity of *Halimeda incrassata* aqueous extracts. *Revista de Ciencia e Tecnologia de Alimentos*, 23(2), 256-263 (2003).

Alvarez, C., Garateix, A., Tejuca, M., Aneiros, A., Pazos, F. & Lanio, M.E. Overview of marine toxin research in Cuba. *Comments in Toxicology*, 9(2), 117-133 (2003).

Linares, A.F., Loikkanen, J., Filho, J.M., Soria, R.B. & Novoa, A.V. Antioxidant and neuroprotective activity of the extract from the seaweed *Halimeda incrassata* (Ellis) Lamouroux, against in vitro and in vivo toxicity induced by methyl-mercury. *Veterinary and Human Toxicology*, 46(1), 1-5 (2004).

Tejuca, M., Díaz, I., Figueredo, R., Roque, L., Pazos, F., Martínez, D., Iznaga-Escobar, N., Pérez, R., Alvarez, C. & Lanio, M.E. Construction of an immunotoxin with the pore forming protein StI and ior C5, a monoclonal antibody against a colon cancer cell line. *International Immunopharmacology*, 4(6), 731-744 (2004).

González, Y., Hernandez-Zanuy, A., Araujo, M.S., Oliva, M.L.V., Chávez, M.A. & Sampaio, C.A.M. Screening of serine proteinase inhibitors from

marine organisms. *Biotechnologia Aplicada*, 20, 203-205 (2003).

González, Y., Oliva, M.L.V., Sampaio, C.A.M. & Chávez, M.A.P. Partial purification and characterization of a serine proteinase isolated from sea hares *Aplysia dactylomela*. *Revista Biología*, 17(2), 93-98 (2003).

González-González, Y., Araujo, M.S., Oliva, M.L.V., Sampaio, C.A.M. & Chávez, M.A. Purification and preliminary characterization of a plasma kallikrein inhibitor isolated from sea hares *Aplysia dactylomela* Rang, 1828. *Toxicon* 43(2), 219-223 (2004).

Pascual, I., Gil, Sh., Cisneros, M., Joseph-Bravo, P., Diaz, J., Possani, L., Charli, J.L. & Chavez, M. Purification of a specific inhibitor of pyroglutamyl aminopeptidase II from the marine annelide *Hermodice carunculata*: In vivo effects in rodent brain. *The International Journal of Biochemistry and Cell Biology*. 36(1), 138-152 (2004).

Pascual, I., Gil, Sh., Cisneros, M., Lage, J., Díaz, J., Joseph-Bravo, P., Charli, J.L. & Chávez, M. Isolation and purification of HcPI, a natural inhibitor of pyroglutamyl amino-peptidase II (TRH-degrading ectoenzyme) from extracts of *Hermodice carunculata*. *Revista Biología* (accepted 2004).

Salas, E., Ramirez, A., Otero-Bilbao, A., Vázquez, R., Reyes, O., Mendiola, J., Duarte, C.A., Otero-González, A., Gutiérrez, O.A. & Chávez, M. A heterogeneous enzymatic assay for quantification of Plasmepsin II activity and the evaluation of its inhibitors. *Journal of Pharmaceutical and Biomedical Analysis*. 34, 833-840 (2004).

Gutierrez, O.A., Chavez, M. & Lissi, E. A theoretical approach to some analytical properties of heterogeneous enzymatic assays. *Analytical Chemistry*. 76(9), 2664-2668 (2004).

Patents

González, Y., Díaz D., Chávez, M.A., Alonso del Rivero, M., Vilela, M.L.V. & Sampaio, C.A.M. (2002): Procedimiento de aislamiento y purificación de un inhibidor de serino proteinase a partir del molusco marino *Aplysia dactylomela* y el producto así obtenido. Cuban Patent Application No. 2002-0034.

The marine fireworm, Hermodice carunculata, is one of the sources of protease inhibitors



Photo: Center for Protein Studies, Havana

Awards to IFS Grantees in 2003

IFS SCIENTIFIC ADVISERS, IFS Affiliated Organisations and other IFS partners may nominate IFS Grantees of merit for the annually awarded IFS Awards. Grantees from Sub-Saharan Africa are eligible for the IFS/Danida Award, while the IFS Jubilee Award is given to IFS Grantees outside Sub-Saharan Africa. Each of the Awards is in the amount of USD 2,000.

The IFS/Danida Award was established with special funds from the government of Denmark in 1996 and is given to IFS Grantees working in Sub-Saharan Africa.

The IFS Jubilee Award was established in 1997 as the "IFS Silver Jubilee Award" to complement the IFS/Danida Award. In 2002, as a mark of the 30th Anniversary, the IFS Board of Trustees decided to change the name of the IFS Silver Jubilee Award to the IFS Jubilee Award. It is given to IFS Grantees from Latin America/ the Caribbean, Asia/ the Pacific and Northern Africa.

The following Grantees received the Awards in 2003:

IFS Jubilee Awardees 2003



Maya B Gunasekera, Sri Lanka

Research project: "Genome analysis of the Sri Lankan elephant (*Elephas maximus maximus*)"

Institution: Genetech Molecular Diagnostics
School of Gene Technology
University of Colombo

e-mail: genetech@slt.lk



Marta Silvia Maier, Argentina

Research project: "Isolation and characterization of biologically-active glycosides from starfish and synthesis of analogues of asterosaponins"

Institution: Departamento de Química Orgánica
Facultad de Ciencias Exactas y Naturales
Universidad de Buenos Aires

e-mail: maier@qo.fcen.uba.ar



Mariana C de Oliveira, Brazil

Research project: "Nitrate uptake and reduction in an agar producing alga: *Gracilaria* and *Gracilariopsis* (Rhodophyta)"

Institution: Departamento de Botânica
Instituto de Biosciências
Universidade de São Paulo

e-mail: mcdolive@usp.br



Marco Rito-Palomares, Mexico

Research project: "Process integration using aqueous two-phase partition for the recovery of intracellular proteins"

Institution: Centro de Biotecnología
Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
MONTERREY

e-mail: mrito@itesm.mx



Yin Tongming, China

Research project: "Detection of markers linking to genes for resistance to *Marssonina* leaf spot disease in *Populus deltoides*"

Institution: The Key Laboratory
Forest Breeding and Gene Engineering
Nanjing Forestry University

e-mail: tongmingyin@hotmail.com

IFS/Danida Awardee 2003

Dominic Ajong Fontem, Cameroon

Research project:

"Characterization of *Phytophthora infestans* populations"

Institution:

Département de Protection des Plantes,
Faculté d'Agronomie et des Sciences
Agricoles, Université de Dschang

e-mail: dfontem@yahoo.com



been introduced and is being planted by farmers in the west province of Cameroon. This variety is competitive with and out-yields the popular late blight susceptible Roma and Rio Grande varieties.

Furthermore, farmers have reduced the heavy dependence on chemical pesticides as the sole method for late blight management by integrating potato tolerant varieties (Cipira, Tubira) and a minimum fungicide application (especially maneb and Ridomil Plus) into the

cropping system. Field sanitation (hand picking of initially diseased lower vegetable leaves) is now practised by farmers to reduce initial build-up of primary disease inoculum in vegetable fields.

Research on Plant Pathology

Late blight caused by *Phytophthora infestans* is the most important disease of potato and tomato in Cameroon, where yield losses have been reported at up to 71% for potato and 100% for tomato. The disease has been very difficult to control in farmers' fields presumably because of sexual recombination and the appearance of more aggressive strains of the pathogen. Although the A2 mating type of *P. infestans* is now being reported worldwide, its incidence in West or Central Africa had not been thoroughly investigated. Dr Fontem collected and characterized Cameroonian isolates of *P. infestans* from solanaceous plants. His main objective was to investigate their morphological, pathogenic, and genetic diversity, as well as mating types, and sensitivity to fungicides. The outcome of the project was a useful tool for recommendations towards appropriate blight management strategies.

Through his work during three IFS-supported projects, a new variety of late blight tolerant tomato (Mecline) has

Perspectives

Dr Fontem has consistently produced research of good quality and has been able on several occasions to put results into practise for adoption by farmers. The contribution to scientific knowledge is very clear. He was a lecturer at the inception of his first IFS grant and is now Associate Professor. He has published many good-quality scientific articles, mostly in local journals.

Dr Fontem and his team, together with foreign scientific colleagues, will continue the pursuit of sustainable crop disease management. New research inputs include alternatives to chemical control of stored products pests.



Developing Antivenoms for Latin America

INSTITUTO CLODOMIRO PICADO is a research and production center of the School of Microbiology, University of Costa Rica, that has greatly contributed to the study and solution of the problem of snakebite envenomations, a relevant public health hazard in Central America.

The Institute, founded in 1970, manufactures the antivenoms used throughout the region for the treatment of snakebitten people. In addition, it has an ambitious research program devoted to the study of the biochemistry, molecular biology, immunology, toxicology and experimental pathology of snake venoms.

The consolidation of this highly productive research group has been greatly promoted by IFS through the support of research proposals of six young scientists of the institute. The first grant was awarded in 1985 and, since then, a number of new projects have been developed on the characterization of venom toxins and on the improvement of antivenoms.

José María Gutiérrez worked on the study of the neutralizing ability of antivenoms and on the mechanism of action of toxins that induce local tissue damage, a work that was awarded in 1997 with the Sven Brohult award.

Bruno Lomonte studied the structure-function relationship of myotoxic phospholipases A₂ isolated from snake venoms, identifying molecular regions responsible for membrane damage.

Sergio Lizano characterized potent inhibitors of venom myotoxins present in the blood of venomous snakes, whereas Yamileth Angulo is studying the mechanism of action of myotoxic venom components using cell culture models.

Alexandra Rucavado studies the mechanism by which venom toxins induce local and systemic bleeding, one of the most serious manifestations of snakebite envenomation.

Cecilia Díaz is working on the characterization of apoptosis induced by various venom toxins and by chemotherapeutic drugs.

Beyond the specific topics of these projects, the support by IFS during 20 years has been fundamental for the consolidation of these young scientists as a cooperative and highly interacting and productive research team which, in turn, has promoted the graduate studies of other collaborators at the Instituto and from other laboratories

IFS grantees at the Instituto Clodomiro Picado, University of Costa Rica.

From left: Bruno Lomonte, Cecilia Díaz, Alexandra Rucavado, José María Gutiérrez, Yamileth Angulo.



Photo: Instituto Clodomiro Picado

in Central America. This is an excellent example on how IFS support has resulted in a significant strengthening of a particular research institute which plays a leading scientific and social role in the region.

Recent publications of the IFS supported research work done at the School of Microbiology at the University of Costa Rica:

Angulo, Y., Núñez, C.E., Lizano, S., Soares, A.M. & Lomonte, B. Immunochemical properties of the N-terminal helix of myotoxin II, a lysine-49 phospholipase A₂ from *Bothrops asper* snake venom. *Toxicon* 39, 879-887 (2001).

Rojas, E., Saravia, P., Angulo, Y., Arce, V., Lomonte, B., Chávez, J.J., Velázquez, R., Thelestam, M. & Gutiérrez, J.M. Venom of the Crotaline snake *Atropoides nummifer* (Jumping Viper) from Guatemala and Honduras: Comparative Toxicological characterization, isolation of a myotoxic phospholipase A₂ homologue and neutralization by two antivenoms. *Comparative Biochemistry and Physiology*. C129, 151-162 (2001).

Núñez, C.E., Angulo & Y., Lomonte, B. Identification of the myotoxic site of the Lys49 phospholipase A₂ from *Aghkistrodon piscivorus piscivorus* snake venom: synthetic C-terminal peptides from Lys49, but not from Asp49 myotoxins, exert membrane-damaging activities. *Toxicon* 39, 1587-1594 (2001).

Andrião' Escarso, S.H., Soares, A.M., Rodríguez, V.M., Angulo, Y., Díaz, C., Lomonte, B., Gutiérrez, J.M. & Giglio, J.R. Myotoxic phospholipases A₂ in *Bothrops* snake venoms: Effect of chemical modifications on the enzymatic and pharmacological properties of bothropstoxins from *Bothrops jararacussu*. *Biochimie* 82, 755-763 (2000).

Angulo, Y., Olamendi-Portugal, T., Alape-Girón, A., Possani, L.D. & Lomonte, B. Structural characterization and phylogenetics relationships of myotoxin II from *Atropoides* (*Bothrops*) *nummifer* snake venom, a Lys 49 phospholipase A(2) homologue. *Int. J. Biochem. Cell. Biol.* 34, 1268-1278 (2002).

Lomonte, B., Angulo, Y. & Santamaría, C. Comparative study of synthetic peptides corresponding to region 115-129 in Lys49 myotoxic phospholipases A₂ from snake venoms. *Toxicon* 42(3) 307-12 (2003).

Angulo, Y. & Lomonte, B. Inhibitory effect of fucoidan on the activities of crotaline snake venom myotoxic phospholipases A₂. *Biochemical Pharmacology* 66(10) 1993-2000 (2003).

Rucavado, A., Núñez, J. & Gutiérrez, J.M. Blister formation and skin damage induced by BaP1 haemorrhagic metalloproteinase from the venom of snake *Bothrops asper*. *Int. J. Exp. Path.* 79, 245-254 (1998).

Rucavado, A., Flores-Sánchez, E., Franceschi, A., Magalhaes, A. & Gutiérrez, J.M. Characterization of the local tissue damage induced by LHF-II, a metalloproteinase with weak hemorrhagic activity isolated from *Lachesis muta muta* snake venom. *Toxicon*, 37, 1297-1312 (1999).

Franceschi, A., Rucavado, A., Mora, N. & Gutiérrez, J.M. Purification and characterization of BaH4, a hemorrhagic metalloproteinase from the venom of the snake *Bothrops asper*. *Toxicon*, 37, 63-77 (2000).

Escalante, T., Franceschi, A., Rucavado, A. & Gutiérrez, J.M. Effectiveness of batimastat, a matrix metalloproteinase inhibitor, in neutralizing local tissue damage induced by BaP1, a hemorrhagic metalloproteinase from the venom of the snake *Bothrops asper*. *Biochemical Pharmacology*, 60, 269-274 (2000).

Rucavado, A., Escalante, T., Franceschi, A., Chaves, F., León,



Photo: Nicolas Degaller © IIRD

Developing snake antivenoms at the Instituto Clodomiro Picado in Costa Rica is supported by IFS since 1985

G., Cury, Y., Ovadia, M. & Gutiérrez, J.M. Inhibition of local hemorrhage and dermonecrosis induced by *Bothrops asper* snake venom: effectiveness of early in situ administration of the peptidomimetic metalloproteinase inhibitor batimastat and the chelating agent CaNa₂EDTA. *Am J Trop Med Hyg.* 63(5-6), 313-319 (2000).

Gutiérrez, J.M., Rucavado, A. Snake venom metallo-proteinases: their role in the pathogenesis of local tissue damage. *Biochimie*, 82(9-10), 841-850 (2001). Review.

Rucavado, A., Soto, M., Kamiguti, A.S., Theakston, R.D., Fox J.W., Escalante, T. & Gutiérrez, J.M. Characterization of aspercetin, a platelet aggregating component from the venom of the snake *Bothrops asper* which induces thrombocytopenia and potentiates metalloproteinase-induced hemorrhage. *Thromb Haemost.* 85(4), 710-715 (2001).

Borges, M.H., Soares, A.M., Rodrigues, V.M., Oliveira, F., Fransheschi, A.M., Rucavado, A., Giglio, J.R. & Homs-Brandeburgo, M.I. Neutralization of proteases from *Bothrops* snake venoms by the aqueous extract from *Casearia sylvestris* (Flacourtiaceae). *Toxicon*, 39(12), 1863-1869 (2001).

Rucavado, A., Escalante, T., Texeira, C.F., Fernandes, C.M., Díaz, C. & Gutiérrez, J.M. Increments in cytokines and matrix metalloproteinases in skeletal muscle after injection of tissue-damaging toxins from the venom of the snake *Bothrops asper*. *Mediators Inflamm.* 11(2), 121-128 (2002).

Escalante T., Nunez, J., Moura da Silva, A.M., Rucavado, A., Theakston, R.D. & Gutierrez, J.M. Pulmonary hemorrhage induced by jararagin, a metalloproteinase from *Bothrops jararaca* snake venom. *Toxicol Appl Pharmacol.* 193(1), 17-28 (2003).

Loria, G.D., Rucavado, A., Kamiguti, A.S., Theakston, R.D., Fox, J.W., Alape, A. & Gutiérrez, J.M. Characterization of 'basparin A', a prothrombin-activating metalloproteinase, from the venom of the snake *Bothrops asper* that inhibits platelet aggregation and induces defibrination and thrombosis. *Arch Biochem Biophys.* 418(1): 13-24 (2003).

Achievements in 2003

The results of IFS operations as compared to the Work Plan 2003 are shown below

Planned	Achieved	Comments
POLICY		
Revise criteria for evaluation of applications	Criteria were revised	Scientific Advisory Committees follow the revised criteria in their assessment procedure as of spring Session 2003
Revise country eligibility criteria	Criteria were revised	Proposal prepared by the Secretariat was approved by the Board of Trustees in November 2003
Appoint new members to Scientific Advisory Committees	13 new members appointed	
Streamline the administration of the granting process	Evaluation of database conducted, Website upgrading initiated, work operations itemised, bottlenecks identified	A comprehensive review of the workflow related to grants administration is underway and will be completed in 2004
New policy for travel grants	A new policy was adopted by the EC in May	The policy document is available on IFS website
Team approach as a complement to IFS' focus on individual scientists.	Preparations got underway to open up for small research teams to apply to IFS	IFS increasingly gets proposals from Southern research institutions to open up for team grants as "an individual scientist working alone finds it more difficult to make a significant scientific innovation, particularly in fields such as biotechnology"
Mentorship	A draft document outlining a systematic approach to mentoring was prepared. It will be revised and presented to the BOT in 2004	Mentorship is an ongoing policy issue under development
PROGRAMME		
Approve 220 grants	239 grants were approved	57% came from Low Income Countries and 30% from Lower Middle Income Countries. The number of approved grants from Sub-Saharan Africa was 109 (46%)

Planned	Achieved	Comments
Feedback to grantees and applicants	All applicants who were not awarded a grant have received comments on their proposals	IFS staff compile and forward comments from Advisers and SAC members. This is highly appreciated by applicants
Literature databases	Literature searches provided to grantees through SLU	
Purchasing services	IFS offered purchasing services to 145 grantees.	IFS contracted a South African firm to effectuate purchasing services to grantees in Sub-Saharan Africa. The arrangement will be evaluated in 2004
Service and maintenance of scientific equipment	Collaboration with NUSESA and NITUB continued	
Information & Communication Technology (ICT)	A project proposal was prepared	Endorsed by potential partner organisations. Donors to be approached
Thematic workshops	Three workshops were held	
Networking	Active contacts with more than 50 partners	IFS works increasingly through joint initiatives with partner organisations
Consolidation of Partnerships	Partnerships with CODESRIA and UNU/INRA operational	Overwhelming response to calls for proposals from Sub-Saharan Africa
Initiatives in Sub-Saharan Africa:		
Raise IFS profile in the sub-continent	Staff travelled to 11 countries. Numerous meetings were held at universities and research institutes with close to 1000 researchers participating	
Conduct workshops on "conceptualisation and preparation of research proposals"	Nine workshops held with a total of 180 participants	The demand is high! We have more requests than we can match. A funding proposal is being circulated to potential donors
Preparations for high level workshop on "the missing generation of scientists"	Preparatory contacts established	The workshop is targeted for 2004
Latin America:		
Prepare for initiative in Latin America in 2004	Contacts taken with Central American institutions and networks	Capacity enhancing activities in Central America and some Andean countries will be conducted in 2004
Instituting new research areas:		
Social and Economic Aspects of the Management of Biological Resources	Research area established, SAC appointed, applications processed	The special project "Agriculture for Peace" received particular interest as IFS received some 130 applications
Water Resources	Research area established, SAC appointed, applications processed	Water Resources were highlighted at an IFS event in conjunction with the Stockholm Water Symposium in August
Additional research areas	Biotechnology, biodiversity, local aspects of climate change were considered	These thematic research fields can be accommodated in the present programme set-up

Planned	Achieved	Comments
Impact assessment	Report on Tanzania launched in Dar es Salaam and widely distributed Impact study on Cameroon published IFS database evaluated and recommendations received on how to adapt it to forthcoming impact studies	The Tanzania study, the findings of which are considered to be largely representative of many Sub-Saharan countries, was presented and discussed at 15 meetings IFS held in African institutions in February The planned tracer study on Chinese grantees had to be postponed due to SARS
Fundraising	25 Funding proposals prepared and submitted to different donors. Three were declined, six approved and the rest are pending approval	Fundraising entails high transaction costs and staff time. Most opportunities for additional funding relate to special ("earmarked") initiatives. They require writing specific proposals as well as financial and progress reporting

MANAGEMENT AND FINANCE

Budget priorities	The four priorities announced in the Work Plan were adhered to	The priorities are: (i) finance more grants, (ii) conduct capacity enhancing activities; (iii) raise the IFS profile internationally; (iv) rationalise administrative processes
New offices	In September, IFS moved to new office premises at Karlavägen 108 in Stockholm	The occupancy costs for 2004 will be reduced by approximately 50%
Revise Personnel Handbook	Revision completed	
Budget format	New format developed	It reflects expenses by function: programme, fundraising and partnership building, and management and general

Sesbania rostrata with nitrogen fixing nodules at Institut Sénégalais de Recherche Agricole in Senegal



Photo: Weiss, C. IIRD

Sugar cane mosaic on sorghum in Egypt



Photo: IIRAD © IIRD

Zebu cattle in Mali



Photo: Laune, Joseph © IIRD

The Working Year at IFS Secretariat

Each year, IFS Staff:

- process and pre-screen one thousand applications
- assign, communicate with, and forward the applications for review to external Advisers (average of 5 per application or approximately 5000 evaluations)
- compile the evaluations from the external Advisers
- organise and staff 16 Scientific Advisory Committee Meetings where the applications and evaluations are discussed and recommendations made for funding
- award research grants (180-240 new grants per year, up to USD 12,000 per grant, on average 70% first grants and 30% renewals)
- provide written feedback on research proposals including all failed applications (over 1000)
- arrange workshops and training courses
- provide travel grants to workshops, scientific meetings and to visit other institutions
- assist with scientific literature search services
- purchase equipment and supplies
- provide support to networks
- assist with contacts with other scientists and networks
- assess progress and final reports
- give out IFS awards for scientific achievement.

Governance Meetings in 2003

The governance meetings were held in November. They included the meeting of the Board of Trustees and its sub-committees as well as the IFS Donors' Group.

Highlights from the Board of Trustees meeting:

- the Trustees endorsed the secretariat's proposal for revised eligibility criteria and a focus on scientists in countries with vulnerable research infrastructure

- the Trustees supported the suggestion that IFS prepare a summary of the five impact studies published to-date
- the Trustees approved the secretariat's proposal that the next IFS impact study should take a thematic approach. It was decided to evaluate the research area "Natural Products" during 2004
- the Trustees approved the Work Plan and Budget for 2004
- the Trustees approved the Secretariat's proposal to use 2005 as an interim year to complete and assess current initiatives and to begin preparations in that year for a five-year strategy for 2006 – 2010.

Procurement of equipment for grantees in 2003

Grantees can choose to purchase equipment and supplies through their institutions or through IFS. Procurement services through IFS were requested by 145 grantees during 2003. Close to 50% of all orders placed were directed to Africa, followed by Latin America with 40% and Asia 10%. The total value of orders was 4.3 million SEK or 30% of the total budget allocated for equipment and supplies.

The budget allocated for equipment and chemicals represent at least 80% of the budget requested by grantees in Asia and Latin America, whereas 66 % in Africa.

The African countries which received most assistance were Cameroon, Morocco, Kenya, Zimbabwe, Uganda and Burkina Faso.

The top supplier countries in terms of number of orders placed were France, USA, Sweden, Germany, South Africa.

As of July, purchases for Sub-Saharan Africa have been handled by Sherwood International, of South Africa.

Excerpt from the IFS Audited Financial Statement 2003

Administration Report

Information about the activities

For the year 2003, IFS awarded 239 new research grants of which 206 were first grants and 33 were renewals. The total amount of funds given for research grants was SEK 18 693 445 (EUR 2 055 000). In addition, IFS provided travel grants, awards, supplementary grants, literature grants and network and workshop support totalling SEK 3 392 265 (EUR 373 000). In total, support in the amount of SEK 22 085 710 (EUR 2 428 000) for grants and awards was provided to some of the over 1100 young scientists participating in the IFS programme during 2003.

Proposals submitted for research grants are pre-screened at the IFS Secretariat and thereafter, sent to scientific advisers and experts for comment (IFS has approximately 1000 advisers in its database).

The proposals are then reviewed and prioritised at the meetings of the Scientific Advisory Committees (SAC). Approximately 50 advisers participate in these meetings twice each year. The advisers do not receive remuneration for reviewing applications nor for participating in the SAC meetings. The estimated value of these contributed services is not reflected in this report.

In addition to financial support, IFS also takes an active role in the work of the researchers by providing purchasing services for scientific equipment and supplies. In addition, IFS organises and finances workshops for young scientists in developing countries on the preparation of grant proposals.

Legal and Organisational Issues

The Charter of the International Foundation For Science (IFS) was signed in Stockholm on 26 May 1972 by Sven

Brohult, President of the Royal Academy of Engineering Sciences (IVA), Sweden; Robert Marshak, Professor of Nuclear Physics, Rochester University, USA; Roger Revelle, Chairman of the Harvard Center for Population Studies, USA and Abdus Salam, Director of the International Center for Theoretical Physics (ICTP), Italy.

IFS was viewed as a foundation according to Swedish legislation and was registered as such with the County Board of Stockholm, most recently in 1998, in accordance with the changes in Swedish laws on foundations.

After a detailed analysis of IFS' legal status during 2002, it was determined that the current statutes were not in agreement with the current law on foundations and that IFS should be legally registered as a "fund-raising organisation". At the May 2002 meeting of the Board of Trustees' Executive Committee, it was decided to explore the possibility of transferring the activities of the organisation to a new legal entity with the same mission.

At the October 2002 Board of Trustees meeting, it was agreed a) to dissolve the current legal entity, b) to submit to the County Board of Stockholm a request to register a new legal entity and c) in accordance with the dissolution of the current organisation, to transfer all assets and liabilities to the new organisation as of 1 January 2003 in accordance with the statutes.

A new legal entity, International Foundation for Science, Insamlingsstiftelse, with the organisation number 802412-5539, was registered with the County Board of Stockholm on 28 November 2002 and the assets and liabilities were transferred at their book value as of 1 January 2003. Therefore, as of 2003, the activities of IFS are being carried out in the new, legally established organisation with the same mission as previously and the organisation's first fiscal year covers the period 28

November 2002 – 31 December 2003.

Financial Result

The Board of Trustees and Director recommend that the deficit for the year, SEK 1 273 268 (EUR 140 000) be offset against the accumulated surplus of SEK 5 668 281 (EUR 623 000), and that the resulting surplus, SEK 4 395 013 (EUR 483 000), be carried-forward to the following year.

All amounts in the Audited Financial Statement are shown in Swedish Crowns (SEK) unless otherwise noted.

STATEMENT OF INCOME AND EXPENSE

28 November 2002 - 31 December 2003

(Amounts shown in thousands Swedish Crowns, SEK.
SEK 1 = EUR 0.11)

Programme Revenue	
Core Contributions	27 462
Donor Restricted Contributions	11 764
Grants Withdrawn	1 331
Other Programme Revenue	34
Total Programme Revenue	<u>40 591</u>
Programme Expense	
Programme Services	37 146
Fundraising and Partnership Building	2 063
Management and General	3 178
Total Programme Expense	<u>42 387</u>
Programme Deficit	<u>-1 796</u>
Interest Income and Expense	
Interest Income	526
Interest Expense	3
Net Interest Income and Expense	<u>523</u>
Net Deficit for the Period	<u><u>-1 273</u></u>

BALANCE SHEET - 31 December 2003

(Amounts shown in thousands Swedish Crowns, SEK.
SEK 1 = EUR 0.11)

Assets	
<i>Fixed Assets</i>	
Tangible Assets	
Furniture and Fixtures	870
Total Fixed Assets	<u>870</u>
<i>Current Assets</i>	
Current Receivables	
Donor Receivables	1 893
Other Receivables - SPP	539
Other Current Receivables	35
Prepaid Expense and Accrued Income	569
Total Current Receivables	<u>3 036</u>
Short-term Investments	21 899
Cash and Bank Balances	3 317
Total Current Assets	<u>28 252</u>
Total Assets	<u><u>29 122</u></u>
Fund Balances and Liabilities	
<i>Fund Balances</i>	
Capital Contribution	5 668
Deficit for the Period	-1 273
Total Fund Balance	<u>4 395</u>
<i>Current Liabilities</i>	
Research Grants Payable	17 937
Deferred Restricted Contributions	3 599
Accounts Payable	1 774
Other Current Liabilities	426
Accrued Expense and Prepaid Income	991
Total Current Liabilities	<u>24 727</u>
Total Fund Balances and Liabilities	<u><u>29 122</u></u>
Pledged Assets	
<i>Liquid Assets</i>	400
<i>Contingent Liabilities</i>	None

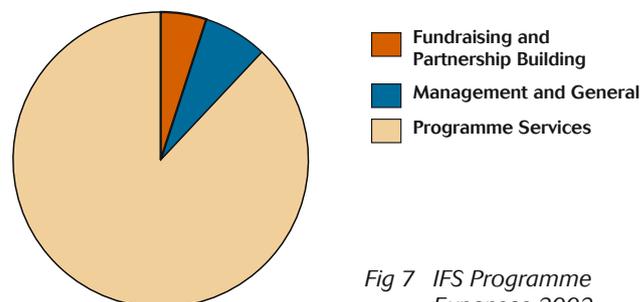


Fig 7 IFS Programme Expenses 2003

Notes to the Audited Financial Statement

Accounting Principles

The evaluations and assessments are in accordance with generally accepted accounting principles in Sweden. The Financial Statement is in conformance with the laws on annual financial reports.

Accounting for Contributions

The IFS programme is funded annually by various donor organisations. Some of the contributions are unrestricted (Core Funds) and some contain restrictions on their use (Donor Restricted Funds).

Core Funds

Core funds are used for all aspects of the on-going operations of IFS. Core funds are recorded at the time of official notification by the Donor.

Donor Restricted Funds

Donor restricted funds are used in accordance with the restrictions placed by the contributor. Donor restricted funds are recorded at the time of official notification by the Donor. Due to their being donations restricted for specific use, they are accounted for as self-balancing funds.

Contributions not received as of 31 December are accounted for as Donor Receivables.

Research Grants

Research grants are recorded as grant expense and as a liability at the time that the grants are approved by the Director.

Receivables

Receivables are recorded according to an assessment of the amounts that are anticipated to be received.

Foreign Currency

Receivables and liabilities in foreign currency are accounted for in Swedish Crowns at the exchange rate on the date of the Balance Sheet.

Leasing Agreements

Leasing agreements, irrespective of whether they are financial or operational, are accounted for as ordinary operational leases therefore the expenses are recorded as they are paid.

Income and Expense, Core and Donor Restricted Funds

(Amounts shown in thousands Swedish Crowns, SEK.
SEK 1 = EUR 0.11)

	Core Funds	Restricted Funds
Programme Revenue		
Contributions	27 462	11 102
Contributions for Overhead		662
Grants Withdrawn	1 331	
Other Programme Revenue	34	
Total Programme Revenue	<u>28 827</u>	<u>11 764</u>
Programme Expense		
Programme Services	26 044	11 102
Fundraising and Partnership Building	2 063	
Management and General	2 516	662
Total Programme Expense	<u>30 623</u>	<u>11 764</u>
Programme Deficit	<u>-1 796</u>	<u>0</u>
Interest Income and Expense		
Interest Income	526	
Interest Expense	3	
Net Interest Income and Expense	<u>523</u>	<u>0</u>
Net Deficit for the Period	<u><u>-1 273</u></u>	<u><u>0</u></u>

Yam mosaic on Dioscorea alata in Côte d'Ivoire



IFS Board of Trustees

Prof Bruno Messerli, Switzerland
Professor Emeritus, Institute of Geography, University of Bern, Switzerland
(Chairman)

Dr Pierre Roger, France
Director of Research (retired), Laboratory of Microbiology, Institut de Recherche pour le Developpement (IRD), University of Provence, France
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Dr Ting-Kueh Soon, Malaysia
President, Malaysian Scientific Association, Malaysia

Ms Wendy White, USA
Director, Board on International Scientific Organizations, The National Academies, USA

Dr Michael Ståhl, Director, IFS (ex-officio)

IFS Staff News

JACQUES GAILLARD LEFT IFS in June. From June 1998, he was seconded to IFS by Institut de Recherche pour le Developpement (IRD), France. Jacques Gaillard served IFS as Deputy Director and Head of International Relations, and was Acting Director for the period January - June 2002. Jacques Gaillard designed and initiated the Monitoring and Evaluation System for Impact Assessment (MESIA) at IFS. He moved to the International Atomic Energy Agency (IAEA) in Vienna, taking up the position as Director of the Division of Planning and Coordination at the Department of Technical Cooperation. IFS and IRD agreed on a new secondment; Dr Jean-Marc Leblanc will join IFS in early 2004.

Richard Hall (Scientific Programme Coordinator for Crop Science) was appointed new Deputy Director for IFS as of April 2003.

Richard Fuchs, Head of Programme at IFS, returned to his home institution, the Natural Resources Institute (NRI) at Greenwich University, UK. Richard Fuchs' secondment to IFS was sponsored by the UK Department for International Development (DFID) as of January 1994 and extended up through January 2003.

Eren Zink (Project Secretary) was appointed Scientific Programme Coordinator for Social Sciences at IFS as of January, 2003.

Per Ekman, Scientific Programme Coordinator for Forestry/Agroforestry left IFS to take up a position at the Swedish Council for the Renewal of Higher Education. Per Ekman came to IFS in April 1999 and was employed under a project funded by the Swedish International Development Cooperation Agency (Sida).

Jenny Lidholm, Purchasing Manager for Food Science and Natural Products, left IFS in September for a position at AMS (Arbetsmarknadsstyrelsen), after four years with IFS.

A researcher from Brazil, Glauter Pinto de Souza from CNPq (the Brazilian S&T Council) spent six months at IFS working on his PhD research. His study concerns the impact of policies established by international organisations associated with ICSU (the International Council for Science) on Brazilian Scientific communities. IFS and TWAS (Third World Academy of Sciences) are included as case studies.

IFS Affiliated Organisations 2003

National Organisations

Argentina

- Academia Nacional de Ciencias Exactas, Físicas y Naturales (ANCEFN)
- Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)

Australia

- Australian Academy of Science (AAS)

Austria

- Fonds zur Förderung der Wissenschaftlichen Forschung (FWF)
- Österreichische Akademie der Wissenschaften (ÖAW)

Bangladesh

- Bangladesh Council of Scientific and Industrial Research (BCSIR)

Belgium

- Académie Royale des Sciences d'Outre-Mer (ARSONM)
- Académie Royale des Sciences des Lettres et des Beaux-Arts de Belgique
- Koninklijke Academie voor Wetenschappen, Letteren en Schone Kunsten van België (KVAB)

Bolivia

- Academia Nacional de Ciencias de Bolivia (ANCB)

Brazil

- Academia Brasileira de Ciências (ABC)
- Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPQ)
- Fundação Oswaldo Cruz (FIOCRUZ)

Burkina Faso

- Ministère des Enseignements Secondaire, Supérieur et de la Recherche Scientifique (MESSER)

Cameroon

- Ministry of Scientific and Technical Research

Central African Republic

- Ministère des Enseignements de la Coordination des Recherches et de la Technologie

Chad

- Direction de la Recherche Scientifique et Technique, MESRS

Chile

- Academia Chilena de Ciencias
- Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)

China

- Chinese Academy of Sciences (CAS)

Colombia

- Academia Colombiana de Ciencias Exactas, Físicas y Naturales (ACCEFYN)
- Centro para la Investigación en Sistemas Sostenibles de Producción Agropecuaria (CIPAV)
- Instituto Colombiano para el Desarrollo de la Ciencia y Tecnología (COLCIENCIAS)

Congo (Brazzaville)

- Direction Générale de la Recherche Scientifique et Technique, MENRST

Costa Rica

- Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICIT)

Côte d'Ivoire

- Fédération des Associations Scientifiques de Côte d'Ivoire (FEDASCI)

Cuba

- Academia de Ciencias de Cuba (ACC)
- Ministry for Foreign Investment and Economic Cooperation

Denmark

- Akademiet for de Tekniske Videnskaber (ATV)
- Det Kongelige Danske Videnskaberne Selskab (RDVS)

Ecuador

- Fundación para la Ciencia y la Tecnología (FUNDACYT)

Egypt

- Academy of Scientific Research and Technology (ASRT)

El Salvador

- Consejo Nacional de Ciencia y Tecnología (CONACYT)

Ethiopia

- Ethiopian Science and Technology Commission (ESTC)

Finland

- Delegation of the Finnish Academies of Science and Letters

France

- Académie des Sciences
- Centre de Coopération Inter-nationale en Recherche Agronomique pour le Développement (CIRAD)
- Institut National de la Recherche Agronomique (INRA)
- Institut de Recherche pour le Développement (IRD, formerly ORSTOM)

Germany

- Deutsche Forschungsgemeinschaft (DFG)

Ghana

- Council for Scientific and Industrial Research (CSIR)

Guinea

- Direction Nationale de la Recherche Scientifique et Technique

Guinea-Bissau

- Instituto Nacional de Estudos e Pesquisa (INEP)

Guyana

- Institute of Applied Science and Technology

Haiti

- Unité de Science et de Technologies Appliquées

Honduras

- Consejo Hondureño de Ciencia y Tecnología (COHCIT)

India

- Indian National Science Academy (INSA)

Indonesia

- Lembaga Ilmu Pengetahuan Indonesia (LIPI)

Israel

- The Israel Academy of Sciences and Humanities

Jamaica

- Scientific Research Council (SRC)

Jordan

- Royal Scientific Society (RSS)

Kenya

- Kenya Agricultural Research Institute (KARI)
- Kenya National Academy of Sciences (KNAS)

Korea DPR (North)

- Academy of Sciences of DPR Korea

Korea R (South)

- National Academy of Sciences (NAS)

Kuwait

- Kuwait Institute for Scientific Research (KISR)

Latvia

- Latvian Academy of Sciences (LAS)

Lesotho

- The National University of Lesotho (NUL)

Liberia

- University of Liberia (UL)

Madagascar

- Académie National Malgache

Malawi

- National Research Council of Malawi (NRCM)

Malaysia

- Malaysian Scientific Association (MSA)
- National Council for Scientific Research and Development (MPKSN)

Mali

- Centre National de la Recherche Scientifique et Technologique (CNRST)
- Comité National de la Recherche Agricole (CNRA)

Mexico

- Consejo Nacional de Ciencia y Tecnología (CONACYT)

Mongolia

- Mongolian Academy of Sciences

Morocco

- Centre National de Coordination et de Planification de la Recherche Scientifique et Technique (CNR)
- Institut Agronomique et Vétérinaire Hassan II

Mozambique

- Universidade Eduardo Mondlane (UEM)
- The Scientific Research Association of Mozambique (AICIMO)

Nepal

- Royal Nepal Academy of Science and Technology (RONAST)

Netherlands

- Koninklijke Nederlandse Akademie van Wetenschappen (KNAW)

Niger

- Université Abdou Moumouni

Nigeria

- Federal Ministry of Science and Technology (FMST)
- The Nigerian Academy of Science (NAS)

Norway

- Det Norske Videnskaps-Akademi (DNVA)

Pakistan

- Pakistan Council for Science and Technology (PCST)

Panama

- Secretaria Nacional de Ciencia y Tecnología e Innovación (SENACYT)
- Universidad de Panamá

Papua New Guinea

- The University of Papua New Guinea

Peru

- Consejo Nacional de Ciencia y Tecnología (CONCYTEC)

Philippines

- National Research Council of the Philippines (NRCP)

Poland

- Polish Academy of Sciences (PAS)

Saudi Arabia

- King Abdulaziz City for Science and Technology (KACST)

Senegal

- Délégation aux Affaires Scientifiques et Techniques, MRST

Seychelles

- Seychelles Bureau of Standards (SBS)

Sierra Leone

- Institute of Agricultural Research (IAR)

South Africa

- National Research Foundation (NRF)

Sri Lanka

- National Science Foundation (NSF)

Sudan

- National Centre for Research (NCR)

Sweden

- Ingenjörsvetenskapsakademien (IVA)
- Kungliga Skogs- och Lantbruksakademien (KSLA)
- Kungliga Vetenskapsakademien (KVA)

Switzerland

- Conference of the Swiss Scientific Academies (CASS)
- Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung (SNF)

Tanzania

- Tanzania Commission for Science and Technology (COSTECH)

Thailand

- National Research Council (NRC)
- The Thailand Research Fund (TRF)

Tunisia

- Direction Générale de la Recherche Scientifique et Technique, MES

Uganda

- National Agricultural Research Organisation (NARO)
- Uganda National Council for Science and Technology (UNCST)

United Kingdom

- The Royal Society
- Natural Resources Institute (NRI)

Uruguay

- Programa de Desarrollo de las Ciencias Básicas (PEDECIBA)

USA

- American Academy of Arts and Sciences (AAAS)
- National Academy of Sciences (NAS)
- New York Academy of Sciences (NYAS)

Venezuela

- Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICIT)

Viet Nam

- Ministry for Science, Technology and Environment (MOSTE)

Zambia

- National Institute for Scientific and Industrial Research (NISIR)

Zimbabwe

- Scientific and Industrial Research and Development Centre (SIRDC)
- University of Zimbabwe

Regional Organisations**Africa**

- Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)
- Association of African Universities (AAU)
- Institut du Sahel (INSAH)
- The African Academy of Sciences (AAS)
- West and Central African Council for Agricultural Research and Development (WECARD/CORAF)

- Western Indian Ocean Marine Science Association (WIOMSA)

Latin America and the Caribbean

- Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)
- The Caribbean Academy of Sciences (CAS)
- Caribbean Agricultural Research and Development Institute (CARDI)

International Organisations

- BioNET-INTERNATIONAL (The Global Network for Taxonomy)
- International Organization for Chemical Sciences in Development (IOCD)
- International Union of Forest Research Organizations (IUFRO)
- Third World Academy of Sciences (TWAS)

Consultative Group on International Agricultural Research (CGIAR):

- CGIAR Secretariat
- Centro Internacional de Agricultura Tropical (CIAT)
- Centre for International Forestry Research (CIFOR)
- International Centre for Agricultural Research in the Dry Areas (ICARDA)
- International Centre for Living Aquatic Resources Management (ICLARM)
- International Centre for Research in Agroforestry (ICRAF)
- International Plant Genetic Resources Institute (IPGRI)
- International Service for National Agricultural Research (ISNAR)
- International Water Management Institute (IWMI)

French Summary

Un regard sur l'année 2003

EN 2003, L'IFS A PORTÉ une attention toute particulière à la situation des jeunes scientifiques de l'Afrique Sub-saharienne. Ce rapport est donc articulé plus particulièrement autour de nos activités dans cette partie du continent. Néanmoins, l'IFS apporte toujours toute son attention aux jeunes chercheurs d'Amérique Latine et d'Asie. Nous avons ainsi planifié cette année le même renforcement des activités de l'IFS vers les pays les plus défavorisés d'Amérique Latine en 2004, puis en 2005, en Asie.

Au cours de l'année 2003, l'IFS a mis en œuvre les modifications nécessaires à la prise en compte prioritaire des jeunes chercheurs des pays qui ont le plus grand besoin de notre support du fait de la vulnérabilité particulière de leurs infrastructures de recherche et de la faiblesse de leurs financements nationaux. Ainsi, les nouveaux critères d'évaluation permettront dorénavant une évaluation plus favorable des propositions qui renforcent plus particulièrement les connaissances scientifiques liées aux besoins nationaux ou locaux. L'âge limite (moins de 40 ans) sera maintenant moins restrictif pour les postulants des pays de l'Afrique sub-saharienne, et tout particulièrement pour les jeunes femmes impliquées dans la recherche, qui ont souvent dû interrompre leur carrière scientifique pour des raisons familiales.

Cette information a été largement diffusée dans ces pays et des membres du secrétariat de l'IFS ont été dans plusieurs universités et centres de recherche africains. De fait, le nombre de propositions issues des pays à faible revenu en général, et de l'Afrique sub-saharienne en particulier, a considérablement augmenté.

239 bourses ont été accordées cette année, ce qui est nettement plus que les deux précédentes années. Leur distribution est significative de notre changement de politique; 57% ont été alloué à des chercheurs des pays aux plus faibles revenus. Bien que le taux de rejet de ces

propositions ait globalement diminué, l'IFS a encore reçu de trop nombreuses propositions de mauvaise qualité auxquelles nous n'avons pu donner suite. C'est pour cela que nous avons accru nos actions en direction des postulants potentiels appartenant à des institutions défavorisées, n'ayant pas de contacts suffisant avec la méthodologie scientifique. Au cours de cette année, l'IFS a ainsi organisé neuf ateliers interactifs au cours desquels les chercheurs ont pu apprendre à concevoir et à présenter leurs propositions de recherche, guidés par des conseillers de l'IFS ou par d'anciens boursiers. La capacité à présenter des projets scientifiques est essentielle pour tous les chercheurs, et l'IFS collabore maintenant étroitement avec d'autres organisations pour offrir cette possibilité à un plus grand nombre de jeunes chercheurs.

Près d'un tiers des bourses de recherche de l'IFS sont attribuées à des jeunes femmes, ce qui est souvent supérieur à leur part relative dans les institutions de recherche. Nous restons convaincu qu'un atout important est gaspillé du fait de la sous représentation des femmes dans les communautés scientifiques et nous avons donc décidé de faire de cette cause une priorité en 2003, en développant des initiatives particulières avec d'autres organisations.

Un nouveau rapport a été publié dans la série des études d'impact de l'IFS. Il concerne les aides de l'IFS au Cameroun. Le principal résultat montre que les 86 boursiers soutenus par l'IFS ont eu une carrière scientifique brillante, avec une production scientifique importante et qu'une forte majorité d'entre eux continue à travailler dans le pays. Ce rapport est maintenant disponible en français et en anglais.

Enfin, le secrétariat de l'IFS a déménagé en octobre pour de nouveaux bureaux. Ils sont aussi spacieux que modernes et nous vous invitons bien volontiers à venir nous y rendre visite.

IFS Mission Statement



The need

Scientific research provides an important input for sustainable management of biological resources. Scientific knowledge is central for rural, urban, industrial, and policy development, which will lead to improvement of people's livelihoods.

The mission

IFS shall contribute towards strengthening the capacity of developing countries to conduct relevant and high quality research on the sustainable management of biological resources. This will involve the study of physical, chemical, and biological processes, as well as relevant social and economic aspects, important in the conservation, production, and renewable utilisation of the natural resources base.

The strategy

IFS shall identify, through a careful selection process, promising young scientists from developing countries with potential to become future lead scientists and science leaders. They will receive support in their early careers to pursue high quality research in developing countries on problems relevant to the mission, which will help them to become established and recognised nationally and internationally. Additional supporting services will be provided to researchers in scientifically weaker institutions and countries.

IFS shall act in collaboration with Affiliated Organisations and other national, regional, and international institutions utilising the complementary strengths of such partnerships.



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SCIENCE**

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