

BRIEF SUMMARY OF THE IFS/AAS CONFERENCE ON “GETTING AND USING EQUIPMENT FOR SCIENTIFIC RESEARCH IN AFRICA”

INTRODUCTION

The two day conference was organised jointly by the International Foundation for Science (IFS) and the African Academy of Sciences (AAS). It took place at the AAS Headquarters in Nairobi, Kenya on the 30th and 31st of May, 2012. It was attended by delegates from the IFS (Sweden), Nigeria, Madagascar, Tanzania, South Africa and Kenya, among others. RISE was invited as an observer and was represented by the following:

NAME	RISE NETWORK	INSTITUTION/COUNTRY
Prof George O Rading	AMSEN	University of Nairobi/Kenya
Prof Kiama Gitahi	RISE-AFNNET	University of Nairobi/Kenya
Dr Quintino Mgani	SABINA	University of Dar-es-salaam/ Tanzania
Ms Faith Mabiki	RISE-AFNNET	Sokoine University of Agriculture/Tanzania

Given below is a brief account of the key presentations/lessons from the conference which could be of interest to the RISE Family.

PRESENTATIONS FROM IFS

The presentations from IFS brought out the following facts which should interest RISE PhD students who are about to graduate:

- IFS offers grants for early career scientists up to \$ 12,000 per person. The research could be by a single applicant or collaborative (3-5 people).
- The age limit for applicants is 35 years for men, and 40 years for women.
- The focus is on high quality, relevant research on **Biological** resources and **Water** resources.
- The grant covers supply of **small** equipment, supplies, literature but does not cover basic research facilities or salaries.
- IFS also offers assistance for innovation start up for those wishing to turn their research findings into commercial products.
- A third activity of IFS concerns support for enhancing capacity (short courses on “funding proposal writing”, “scientific writing”, visits to better equipped laboratories, conference attendance, publication support, assistance with purchase and delivery of equipment, etc.). Indeed at the time of the conference, two simultaneous workshops were going on: One on scientific writing (in collaboration with “AuthorAid”). The other one was on applying for research funding”. The latter was organised in collaboration with IRD (Institute for

research for development). RISE students might wish to note that IRD also offers Fellowships, research support for researchers up to € 50,000, support for North-South collaborative research (up to € 60,000), in service training for researchers in France, etc.

- RISE researchers are encouraged to visit the websites of the relevant organizations for further details: www.ifs.org; www.authoraid.info;

PRESENTATION ON “PRISM”

In addition to the above, IFS also offers one off support for acquisition of equipment (usually in collaboration with other funding agencies). An example given at the conference was the collaboration between the IFS and the MacArthur Foundation for equipment supply to selected institutions in Madagascar and Nigeria. In actuating this project, IFS adopted the “PRISM” concept from which RISE researchers/students could learn a lesson or two. PRISM stands for Procurement, Installation, Service, Maintenance and Use of Scientific equipment in Africa. The aim of the approach is to achieve efficient use of well functioning, high quality equipment by including the following activities during equipment acquisition:

- Participatory real time planning, monitoring and evaluation. This entails involving all parties in identification, procurement, installation and training on use of equipment. That there should be thorough consideration of infrastructure (buildings, electrical supply, water and gas supply, air conditioning, dust proofing, etc.) **before** the equipment is supplied. Where necessary, pre-installation training (both local and at the suppliers’) should be provided.
- Preparing sound operational and financial plans. Thus, when budgeting for equipment it is necessary to consider related costs like freight, insurance, tax and Customs duties, service and maintenance agreements, supplies, spare parts, repair manuals, service tool kits, consumables, decommissioning, etc. Also consider revenue opportunities associated with acquisition e.g. laboratory fees, training courses, cost saving (if the service is currently being outsourced). The IFS estimates that the actual cost of the equipment over its life time could be up to 300 % of the basic equipment cost, and this should be factored in at the planning stage.
- Having the necessary support packages.
- Holding regular partnership meetings.
- Identifying and using preferred equipment suppliers. This was identified as a more cost effective alternative in the long run compared to basing acquisition on the lowest bidder. Choosing the preferred supplier should consider reliability, previous supply record, after sales service, geographic location, operational sustainability, etc.
- Developing partnerships between researchers, technicians, university authorities and equipment suppliers.
- Embracing the concept of outcome mapping whose details are available at www.outcomemapping.ca.

With this approach, and if good laboratory practice, good quality assurance, inter-laboratory tests are embraced, IFS reckons that it should be possible to supply equipment that is of a high standard, quality and reliability. The laboratories supplied should then be in a position to produce research results that meet international standards and that contribute to development. The researchers and technicians will have obtained adequate training and experience in the operation, maintenance and application of the equipment.

It is also worth noting that IFS, like RISE, emphasises the importance of networking and sharing of equipment.

EXPERIENCES OF NIGERIA AND MADAGASCAR

Six institutions from Nigeria and Madagascar that benefitted from the pilot PRISM project gave an account of their experiences in applying the PRISM concept while acquiring equipment. All the institutions that made presentations followed the PRISM procedures. However, the results were mixed. Only two of the institutions (University of Ibadan, Nigeria and IMRA, Madagascar) reported tangible deliverables. The University of Ibadan decided to build a central laboratory which houses all the new equipment. In this way, provision of services like electricity, water, security, air conditioning, became easier. Their central laboratories are run by an independent committee. All the equipment received was properly installed and the requisite trainings provided. More importantly, they were able to show that the equipment is being effectively utilised (users include other universities/colleges in their region), that they had generated additional research funding using the facility as a base, and that the facility was generating income. In the case of IMRA, they had used the IFS funding as a base to repair existing equipment, prepared and utilised an effective operation and financial plan, obtained over € 10,000 in extra funding, screened over 1000 extracts using the equipment they acquired, and obtained one patent registration. They have also published one journal paper and won a best poster award at a conference.

The other four presentations did not reveal much by way of deliverables. Either the equipment had been received but not installed, or when installed, no record of effective utilization was reported. Two key lessons emerged from these: In the case of the University of Antananarivo, the power rating of a piece of equipment did not match the supply in Madagascar. An additional grant had to be procured to buy a transformer before the equipment could work. On the other hand, Bayero University from Nigeria reported the challenges they had to battle with due to bureaucracy: Need to seek regulatory approval from radioactive and electromagnetic radiation protection agencies, National bureau of standards, customs, tax department, etc. Those wishing to procure equipment need to plan for these in advance especially in countries where bureaucracy is firmly entrenched.

PRESENTATION BY BecA-ILRI

A presentation was also given by BecA which is one of 4 networks on biosciences in Africa. BecA is based in Nairobi. They have some very

advanced equipment for biological research that might interest RISE researchers. These include equipment for DNA sequencing, genotyping, as well as a bioinformatics data base. They offer research placement, fellowships training workshops, institutional capacity building, travel grants and also accommodate visiting scientists at their facility. They can also donate used scientific equipment to institutions. Those interested may visit the sites: hub.africabiosciences.org and www.seedingslabs.org.

PRESENTATIONS BY RISE PARTICIPANTS

RISE participants gave two short presentations to the conference. One by Prof Rading was entitled “Perspectives from RISE” and outlined the achievements of RISE since its inception in 2008. It emphasized the network structure adopted by RISE and its advantages in enabling sharing of human and physical (equipment) resources, resulting in better utilization of the same. The second was by Ms Mabiki who gave a highlight of her experience in handling research equipment at Sokoine University. Using the challenges she had when an HPLC was delivered to her laboratory without adequate prior preparation (building to host the equipment, service contract, operator training, etc.) she recounted how she overcame these challenges by adopting a “do it yourself” approach.

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