

MAJOR CHALLENGES FOR INDIVIDUAL RESEARCHERS IN DEVELOPING COUNTRIES



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THIS PRESENTATION

- Major Challenges
 - Latin American Researchers
 - Asian Researchers
 - African Researchers
- Women Reasearchers
- IFS and Generic Research Challenges
- IFS- Identifying strategic opportunities- new emerging views
- Conclusions



HDI-LATIN AMERICA- KEY CHALLENGE

Brazil, Argentina, Chile, Mexico, Costa Rica,
Uruguay,

- have organized structures for research support.
- resources are available or becoming increasingly so
- key challenges for young researchers are acquiring solid training, at home or abroad for entering the research circuit where funding is available.



HDI-LATIN AMERICAN INSTITUTES

- Research institutes usually face challenge of maintaining equipment once it is acquired.
- Grants for equipment are more readily available than those for maintenance



MEDIUM HDI-LA KEY CHALLENGES

Peru, Ecuador, Honduras, Nicaragua

- reduced system for S&T.
- Not enough slots for researchers into the research system, even if training is adequate.
- brain drain and a vicious circle even if the country invests in training



MEDIUM HDI- LA INSTITUTES CHALLENGES

- Inadequate facilities
- equipment,
- unreliable electricity, water, communications systems,
- insufficient maintenance funds



LATIN AMERICA

- Typical in all LA countries is low participation of the private sector in RD investment, a political issue, no doubt, where Brazil seems to be the exception.



ASIA- INDIVIDUAL CHALLENGES

- equipment, technicians, spare parts, journals,
- research grants,
- lack of interaction with eminent experts
- low salaries



ASIA -INSTITUTIONAL CHALLENGES

- Lack of creative faculty,
- Lack of proper infrastructure, equipment, books/journals, stable electricity, internet), funding



AFRICA

- primary and secondary education have been at the focus of donor community for decades
- higher education and research have been viewed as essential for development only recently



RECOGNITION OF THE ROLE OF SCIENCE

At international level.

- Intense focus on MDGs (UNDP, WHO, World Bank)
- G8 (Gleneagles Summit in 2005)
- Among aid agencies.
 - Scandinavian aid agencies targeting funds for LDCs, especially in sub-Saharan Africa,



RECOGNITION OF THE ROLE OF SCIENCE

- By foundations.
- Among developing countries.
 - Brazil's cooperation with Portuguese-speaking countries in Africa
 - China's Development Fund for Africa



RECOGNITION IN AFRICA ITSELF.

- Publication of Africa's S&T Consolidated Plan of Action (2006)
- African Union Summit dedicated to STI (2007)
- 'Science With Africa' Conference in Addis Ababa, Ethiopia (March 2008)
- 2009 science week in several African countries



AFRICAN COUNTRIES HAVE SUBSTANTIALLY INCREASED INVESTMENT IN S&T

- Ghana
- Kenya
- Nigeria
- Rwanda
- South Africa
- Tanzania
- Uganda
- Zambia



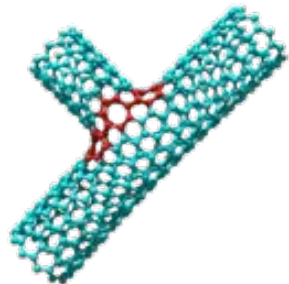
FOCUSING ON SPECIFIC AREAS

- **Malawi:** Raising agricultural productivity
- **Niger, Togo, Zanzibar:** Controlling malaria
- **Zambia:** Broadening access to basic rural health services
- **Niger:** Reforestation
- **Senegal, Uganda:** Increasing access to safe drinking water and sanitation



SEVERAL AFRICAN COUNTRIES ARE INVESTING IN CUTTING-EDGE SCIENCE

- **ICTs:** Nigeria, Rwanda
- **Biotech:** South Africa, Uganda
- **Space S&T:** Nigeria
- **Nanotech:** South Africa



MAJOR CHALLENGES-FUNDING

- Nationally-sourced funds are to staff salaries.
- External funds usually support research project
- External assistance come in various forms from many sources
 - too many diversions and often many of the scientists are pulled in different directions by partners and donors whose interests often wither away too soon



MAJOR CHALLENGES-FUNDING



- Scholars who acquire critical capacity are often drawn away from local needs towards global issues
- Lack of funding commitment to sustain the initiative over the long term, beyond the threshold
- Funding is often not reliable nor programmed for long term support, researchers easily become isolated



MAJOR CHALLENGES-FUNDING



- Financial support from donors did not usually anticipate the requirements for institutionalization of project outcomes nor
- did it provide specifically for project outreach that will multiply the effects of capacity strengthening



MAJOR CHALLENGES-ABSENCE OF SCIENCE BASED CULTURE



- Low public awareness of the need and importance of scientific and technological capacity.
- Poor recognition and reward for achievement in science.
- Promotion policies & rewards more favorable to administrative and managerial functions than to research and scientific achievements.
 - high rates of turnover in research staff.
 - undermines efforts to develop a cadre of skilled and experienced researchers



MAJOR CHALLENGES-

- European tradition- academic culture that promotes scholarly research and publication but not geared towards business development or industrial applications
- Final product is a report or journal publication - no link to end users



MAJOR CHALLENGES-RESEARCH INFRASTRUCTURE

- Laboratories, equipment, physical plants etc.- stagnated, degraded or obsolete or not used
- Lack of access to current literature, compatible teaching and administrative load, no cooperation of their institutions
- Lack of adequate number of technicians, specialists & qualified managers to support the desirable level of research



WOMEN REASEARCHERS

- The proportion of women scientist is still significantly smaller to the number of men
- Latin America and the Caribbean, 43% of researchers are women.
- In Asia, women constitute only 17% of researchers
- In Africa, it is estimated that about 31% of researchers are women.
- The professional "science" culture is male dominated and women face different challenges than their men counterpart



WHAT DOES IFS EXPECT FROM YOUNG RESEARCHERS?

- Relevant research.....
 - Understanding of the value chain, stakeholder consultation,
- Knowledge generation?
 - Research should lead to innovation
- A focus not just on science but people also
- Multidisciplinary approach
- To write good proposals
- Logical conclusion: publishing, meaningful use, maybe commercial, of research results



IFS AND THE GENERIC CHALLENGES-

- Lack of research support
- Academic isolation
- Lack of rapid access to scientific media
- Networking with peers
- Disseminating research results



IFS AND THE GENERIC CHALLENGES-

- Research support: Research grants
 - Focus is on the individual
 - Many grants focus on priority areas, but ...
 - IFS is not prescriptive....
 - Restricted projects
- Capacity enhancement
 - Mentorship, travel grants, workshops etc
 - Making the "playing field level" – e.g. project proposal writing courses



IFS AND THE GENERIC CHALLENGES-

- Overcoming Academic isolation
 - Mentoring
 - Travel grants
 - Workshops
 - Networking
 - - IFS Website
 - Facilitates networking
 - Special groups
- Lack of rapid access to scientific media
 - INASP: 10,000 journal titles



IFS AND THE GENERIC CHALLENGES-

- Infrastructure

- Research grants

- Capacity enhancement

- Mentorship, travel grants, workshops etc



DISSEMINATING RESEARCH RESULTS

- Scientific paper writing workshops (IFS and AWARD) – includes scientific popularisation



IFS- IDENTIFYING STRATEGIC OPPORTUNITIES- NEW EMERGING VIEWS

- Product commercialisation-entrepreneurship
(under discussion)
- Develop capacities to transform ideas into business proposals as well as actual products and services for local and international markets
 - Individual researchers at the centre of development process
 - research
 - become a valuable resource for business, industry and society
 - contribute to economic revival and high technological growth in their region



IFS- IDENTIFYING STRATEGIC OPPORTUNITIES- NEW EMERGING VIEWS

- ❑ Implementation workshops (under discussion)
 - Bring grantees together to look at the next steps
 - Scientific experts to advise on research orientation and next steps
 - e.g. , Agriculture, Biodiversity etc
 - Representatives of extension services/relevant NGOs.
 - Research/commercial sector liaison representatives
 - Small business advisor



IFS- IDENTIFYING STRATEGIC OPPORTUNITIES- NEW EMERGING VIEWS

- High quality research - continuation should be facilitated as much as possible
 - Research grants
 - Mentorship/networking
 - Alumni groups
- Failed pre-proposals – but with promise.....?
 - Project conceptualisation workshops
- Research dissemination
 - Scientific paper writing workshops/mentorship
- Where could this research go? Near- and long-term?
 - Bring experts at workshops to advise on next steps



CONCLUSIONS

- Developing country scientists should be engaged as key players in finding solutions to the problems of the region/country
- Challenges faced by individual researchers are complex, blanket prescriptions and approaches to individual capacity building are destined to fail.
- A more country-grounded approach to analysis of major challenges and strategically focused interventions is needed.
- Beyond generic principles, there are no developing country applicable approaches or solutions there is no one fit solution to all
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CONCLUSIONS

- Among Africa's, Asia and Latin America, most underutilized resources are the brains and skills of its women.
- The more that a national, regional or continent-wide strategy for science and technology can tap these resources, the more it is likely to succeed.

○ **THANK YOU FOR YOUR ATTENTION**

