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# International Science Programme Uppsala University

## **Major challenges for donors to promote science and research in developing countries**

**Some reflections based on experiences of the  
International Science Programme**

***Peter Sundin, Head***

***Director of the ISP Chemistry Program (IPICS)***

- ISP philosophy and operation
- The situation in developing countries and major challenges
- ISP supported activities and output recent years
- New challenges...



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## International Science Programme (ISP) at Uppsala University

### Focus:

*To strengthen research and postgraduate education in basic sciences in developing countries*

- International Programme in Physical Science (IPPS) 1961
- International Programme in Chemical Sciences (IPICS) 1970
- International Programme Mathematical Sciences (IPMS) 2001

*ISP philosophy and operation has developed over soon 50 years to meet major challenges*

Presently funded by

- Sida (about 2 M€ 2009)
- Uppsala University (about 0.25 M€ 2009).
- Substantial “*funding in kind*” (not financially accounted for)



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## **ISP philosophy:**

Own competence in basic sciences is crucial to education, applied sciences, engineering, sustainable development, and global trade.

- Assisting developing countries in Africa, Asia, and Latin America to *strengthen their domestic capacity for research and postgraduate education*;
- Focus on *least developed countries*;
- Support *adapted to the needs of the individual group/network*;
- Supporting carefully selected research groups and regional networks, on a *long-term basis*;
- *The work is carried out in cooperation with one or more strong research groups* in Sweden, in the rest of Europe, and in the regions;
- *Ownership* of the scientific activities is with the supported group.



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## **ISP operation:**

Support to selected research groups and to regional cooperation

- *for* equipment, consumables, spare parts
- *for* literature, IT
- *for* collaboration with more advanced research groups
- *for* short-term exchange of staff and students
- *for* postgraduate training of 'sandwich' type
- *for* attending and arranging courses, workshops, conferences
- (not for salaries, vehicles, etc.)
- Applications are reviewed by reference groups and allocations are decided by board
- Regular monitoring of supported activities
- 15 000 – 70 000 € per year
- Exit when group is resourceful, strong, and competitive



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## **The common situation in target countries, major challenges**

- Small departments 10-20, or even less, academic staff;
- in each discipline, 1–2 PhD's per 1 million inhabitants; academic isolation
- Little, or no, contact with scientific community;
- Skewed age profile – few young staff members;
- Low salaries → second job, or leaving the country;
- Limited possibilities for recruitment;
- Small and outdated library;
- Poor internet access;
- High teaching load and large lecture groups;
- Many new universities open → “internal brain drain”;
- Slow administrative processes/bureaucracy.



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## Addressing challenges

- For sustainability, support to start with the actual situation, be in line with applicable strategies, and the supported activities *demand-driven*. Field studies and discussions are crucial before start of support;
- Donor- (and opportunity-) driven activities may not be in the best interest of targeted organisations/researchers; Increased donor coordination.
- In most cases infrastructure for research, and research training is very weak and vulnerable. Support needs to include developing infrastructure;
- Regional networking to create critical mass of staff and students
- Long term engagement – otherwise most effects will probably be lost once the support terminates; Government commitment needed.
- Science will not develop in isolation – international contacts are needed;

Note: In the new *EU-AU Partnership for Africa* the word *Partnership* is essential – the word "donor" is abandoned.

## ISP Support 2007 - 2008

	<b>Number</b>	
	<b>2007</b>	<b>2008</b>
PhD students (~ 30% female)	181	153
MSc/Mphil students (~ 30% female)	332	286
PhD theses	12	39
MSc/Mphil theses	141	103
Publications in international Journals	140	153
Publications in regional/national Journals	56	91
Conference and Workshop reports	256	219





## *ISP outputs*

During the five years period 2003 – 2007 ISP supported

45 – 50 research groups

19 –21 networks.

The total ISP cost for this amounted to about 12 million €.

<b>Output</b>	<b>per yr</b>	<b>per each M€ invested</b>
• 103 PhD theses	> 20	> 8
• 503 MSc theses	> 100	> 40
• 663 publications in refereed international journals	> 130	> 55
• 364 publications in regional/local journals	> 70	> 30
• 1333 conference contributions (40% international)	> 260	>110



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*(New challenges...)*

## WHERE? ISP Direct Support to Research Groups 2007

GNI per Capita USD 2003; World Bank Report 2005

LD as defined in "The Least Developed Countries 2002; UNCTAD/LDS/2002

### AFRICA

#### *Low Income Countries*

LD <b>Burkina Faso</b>	300
Cameroon	640
LD <b>Ethiopia</b>	90
Ghana	320
<b>Kenya</b>	390
LD Malawi	170
LD <b>Mali</b>	290
Nigeria	320
LD Senegal	550
LD <b>Tanzania</b>	290
LD <b>Uganda</b>	240
LD <b>Zambia</b>	380
Zimbabwe	480

### ASIA

#### *Low Income Countries*

LD <b>Bangladesh</b>	400
LD <b>Cambodia</b>	310
LD Lao PDR	320

#### *Lower Middle Income Countries*

Sri Lanka	930
Thailand	2,190

### LATIN AMERICA

#### *Lower Middle Income Countries*

Ecuador	1,790
Peru	2,150

### *Sida Category-1 countries*

#### AFRICA

**Burkina Faso**  
**Ethiopia**  
**Kenya**  
**Mali**  
**Mozambique**  
**Rwanda**  
**Tanzania**  
**Uganda**  
**Zambia**

#### ASIA

**Bangladesh**  
**Cambodia**

#### LATIN AMERICA

**Bolivia**

("bilateral countries" in **blue**)



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## Future ISP support on Sida funding:

- Support to research groups only in Category-1 countries *not having bilateral research program agreements with Sida* (**Kenya, Zambia, Bangladesh, Cambodia**). Support *to be phased out once bilateral programs are established*.
- Networks are not yet affected *but will be evaluated*, important that *Category-1 countries benefit*.
- More ISP involvement (coordination) in Sida bilateral programmes with regard to basic sciences.



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### ***Direct support:***

Sida grant 2007: 2.7 M€

Sida grant 2008: 2.4 M€

Sida grant 2009 2.0 M€

Sida grant 2010 (1.0 M€ until 30 June, subject to new application 1 Mar 2010)



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## **ISP relation to IFS**

- Scientific fields
- IFS Grantees
- IFS Training Workshops