

## **Resource Assessment 1995 - Summary**

### **The Objective**

In view of the essential need for and additional value of international coordination of research on global change, IGFA has decided to foster research in the framework of the three major internationally coordinated research programmes World Climate Research Programme (WCRP), International Geosphere-Biosphere Programme (IGBP) and the International Human Dimensions Programme on Global Environmental Change (IHDP). These programmes cover the physical climate system, the biogeochemical system, and the human causes of global change and impacts on society including mitigation and adaptation. Given the goals of IGFA, the central question is whether the funding levels are adequate.

### **The Resource Assessment**

IGFA started an investigation into the funding levels of global change research and the funding requirements of the three programmes. This 'Resource Assessment' was aimed at:

- (i) the Resource Allocation: the funding levels in the period 1993-1996, with focus at the year 1995, and the specific relevance of funding for the projects of these programmes ;
- (ii) the Resource Requirements: the funding requirements of the projects of the three programmes in the period 1996-2000 (and beyond).

### **Categories of Research**

Global change research covers a very wide spectrum of issues. Not all research relevant to global change is covered by the three programmes. The programmes aim at specific scientific areas and targets, and coordinate research in such (Core) Projects. Research that is being coordinated in these frameworks is classified as Category I (focused research).

Other research that is contributing to an issue of a (Core) Project is classified as Category II (contributory research). The remaining research is classified as Category III (relevant research).

### **Organization**

The Resource Allocation was coordinated by a working group under the leadership of the German IGFA member and was co-sponsored by NSF (USA). National contact points identified individual research activities at the national level and made a preliminary categorization. The categorization was reviewed by the offices of the international (Core) Projects of the three programmes.

The Resource Requirements were communicated by the executive directors of the three programmes.

### **Funding Levels**

The funding level of all IGFA countries for all three categories together amounts to slightly above US\$ 2 billion in 1995 (US\$ 1995 rate). Over 1993-1996 there is

a slightly rising trend, which is more than counters inflation. However, the trends per country vary. The 1996 figures are in many cases lower, which may be caused by incomplete information about that years funding levels.

### **Allocations**

In 1995, the relative proportion of funding for Category I, II, and III amounted to 24, 41, 35% respectively. There is a tendency that the funding level of Category I is higher in more mature (Core) Projects than in more recently defined projects.

During the last years the relative portion of funded research in Category I and II increased at the expense of Category III; i.e. there is an increased orientation towards the international programmes.

### **Requirements**

Project requirements were estimated by the executive directors of the programmes. The requirement for a 'typical' core project was based on a life time of 15 years; a funding level of US\$ 100 Million during 10 years; resulting in a total funding requirement of over US\$ 1,000 Million over the life time: For the specific (Core) Projects this may vary by plus or minus 50%.

The directors provided profiles of the funding requirements per (Core) Project. The requirements of most of the projects increase in the next five years.

### **Matching funding levels and requirements**

A preliminary remark is that the figures of the funding levels on one hand and of the requirements on the other have been produced in very different ways, which restricts the comparability.

In general the reported funding levels for Category I were at about 50% of the required level. However, the level of funding of Category I and II together exceeds the required level for all (Core) Projects at present and in the near future. The conclusion may be drawn that (i) the 1995 and present funding level is adequate for the near future, but that (ii) the allocation of these funds is less influenced by the international research agenda than by other priorities. In many cases another interpretation is emerging: lack of means to coordinate research (glue money).

### **Bridging the gaps**

Discrepancies between the required and allocated level of funds have many aspects.

A major discrepancy is caused by the differences in the ratio dollar/man-year which differs over the projects and the allocations. On the other hand, in the case of IGBP/GCTE it was made quite clear, that a larger proportion of the Category II research could be incorporated into Core Research (Category I) if more money becomes available for the international coordination. Both aspects lead to recommendations for funding agencies (i) to give priority to internationally

coordinated research and (ii) to provide means for the international coordination of research.

### **Limitations of this resource assessment**

The results of this resource assessment must be used with a good understanding of the limitations. An exercise in 18 “countries” with different funding systems and economic situations can only yield indicative results. A major effort was made to harmonize the data in order to increase comparability in intensive meetings with national contact points and programme (element) directors.

The following are the main limitations:

- the survey concentrated on activities funded by national funding agencies, the EU and national programmes. Other sources (like university base funding) are generally not included;
- figures include any costs that are supported through project funding: personnel, contracted services, equipment, facilities, materials, supplies, travel, publications and indirect cost like heating etc.;
- capital assets like large scale equipment (vessels, satellites) are not included; and
- cost of a full time equivalent differ.

The RA working group has been well aware of these limitations but believes on the basis of its analysis that the results presented in this report give a good indication of trends and of the match between requirement and allocations. The absolute late figures should be taken with care.

### **The Future of the Resource Assessment**

During the course of the assessment exercise several national research projects were identified which were recognized by the International Programmes as valuable contributions to Category II and sometimes even to Category I.

The type of information provided by the resource assessment makes it very attractive for both IGFA members and the international research programmes to develop an openly accessible database of current global change research. The question whether funding agencies match the needs of the international research projects is relevant in the future as well. IGFA will consider how to continue the Resource Assessment.

**IGFA Resource Assessment 1995  
Basic Results**

<b>Total Allocations 1995</b>	<b>2,115 Million US\$</b>
Subtotal, Allocations Focused Studies (Cat. I)	513 Million US\$
Subtotal, Allocations Contributory Studies (Cat. II)	870 Million US\$
Subtotal, Other Global Change (Cat. III)	732 Million US\$
<b>Total Requirements for Focused Research 1998</b>	<b>1,025 Million US\$</b>
Subtotal, Requirements WCRP 1998	500 Million US\$
Subtotal, Requirements IGBP 1998	521 Million US\$
Subtotal, Requirements IHDP 1998 (LUCC under IGBP)	4 Million US\$