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Opportunities for Training in the Field of Science and Technology Research in the European Community

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My intention is to present an outline of the initiatives taken by the Commission of the European Communities (CEC) in the fields of training and research, notably within the Science and Technology for Development (STD) program. My purpose is to try to answer certain questions that were raised and to raise a series of questions myself, the answers to which could help the Commission implement its research and training activities in tropical agriculture.

1. By way of introduction, I would like to underline the fact that training activity at the Community level is closely tied not only to carrying out research projects, but also to the movement and exchange of researchers.

2. My presentation is organized around two general directions:

- the description of two programs for research scholarships which, in the Community jargon, are called:

- sectorial scholarships (related to sectorial programs);

- stimulation scholarships (related to the 1985-1988 stimulation plan for European cooperation and exchange in Science and Technology-ST); and

- the description of the STD program, in particular, its "Training" component.

I - Scholarships

1. Sectorial scholarships

Aims:

- research training through research;
- mobility; and
- participation in carrying out the R&D sectorial programs.

Training: heuristic approach (researchers finding and perfecting a work method themselves by carrying out a project). On-the-job training with good conditions: guidance from an experienced researcher, possibility of following high level courses or seminars, adequate equipment and working means, stimulating scientific environment.

Mobility: *sine qua non* condition for qualification, which implies that the research project is to be carried out in a foreign country.

Participation in the implementation of DG XII/CCR research programs, namely:

- reference and applied technology material
- materials for use at high temperature
- basic technological research
- biotechnology
- raw materials
- advanced materials
- fission energy
- fusion energy
- non-nuclear energy
- science and technology development (STD)
- protection against radiation
- environment, climatology, natural disasters, major technological risks
- future and evaluation of ST
- CCR (remote sensing).

The proposed subject of research must be covered by one of these programs.

Form of the scholarship: direct contract between the Commission and the scholarship holder, financed by the various programs acting as funders, along three categories at a fixed scale:

Category	Month	Amount
10	max. 12	4,750 FF/month
20	max. 36	9,500 FF/month
30	max. 24	11,870 FF/month

Conditions for qualification:

- being a national of one of the member countries;
- carrying out the project in a foreign country;
- the research project must be approved by the recipient laboratory;
- the subject must be covered by one of the programs financing the scholarship.

Implementation:

- no fixed deadlines for submitting applications;
- selection is made two to four times a year;

- work can begin one month after the decision has been made,

- a "Guide to ST sectorial scholarships" and the application forms are available at the following address:

Directorate General for Science, Research and Development (DG XII/CCR)
Division XII H-1 - "Scholarship" Action
 CEC
 200, rue de la Loi,
 B - 1040 BRUSSELS
 Tel: 32/2/235.39.91 or 235.40.67

2. "Stimulation" scholarships

This program shows complementary aspects with regard to the preceding:

- it concerns all the ST fields/branches not covered by the sectorial programs;
- the contracts are executed with the recipient laboratories which must file a request;
- there is no fixed scale, but financing is in general 100% ensured;
- it covers expenses incurred by the recipient laboratories, namely for:
 - short stays (relocation costs) (six months);
 - living and transportation costs for a young post-university level researcher (including a temporary employment contract) who is integrated into or attached to a research team (six months to two years);
 - expenses for detachments and/or exchanges of researchers with employment contracts, from industry to university (long term training) or from university to industry (transfer of know-how or applied research in the field).

1.3. A fusion of the two programs into a single one is considered for the future: it would be a unique system, refined and flexible to respond efficiently to diverse concrete situations.

These two programs are only intended for nationals of EC member countries. On the other hand, in the future STD program, possibilities of such types of training as the ones just presented will also be offered to nationals of developing

countries within the framework of research projects co-financed by the Community.

II - STD program

The first STD program, which expired at the end of 1986 (1983-1986), which covered the fields of agriculture, medicine, health and nutrition in tropical areas.

Aims:

- development of research capacity, oriented namely towards food farming in developing countries;
- valorization and synergy of complementarities between Community research institutes; and
- support of research efforts undertaken by developing countries.

Thematic content:

1) Tropical and subtropical agriculture:

- improvement of agricultural production (food crops and industrial farming, production of animal derived protein, forestry production);
- environmental improvement (resources and use of water, defense, stabilization and restoration of soil, crop protection);
- post-harvest technology (preservation of products, transformation of products); and
- training.

2) Medicine, health and nutrition in tropical and subtropical areas:

Program endowment: 40 M ECU, of which 30 M ECU are for the tropical agriculture item.

Execution: for tropical agriculture, 1,280 proposals have been received, coming from 73 countries of which the ten oldest were member countries; 228 projects have been accepted (about 20%), of which 65 (that is about 30%) were submitted by developing countries. It concerns projects co-financed by the EC (at about 50%) through research contracts with the laboratories.

The new STD program, 1987-1990, based on the achievements of the first (which had an experimental nature) will enlarge the aims, the means and the procedures for implementation.

Among the **new aims**, the following will be emphasized:

- intensification of cooperation and exchange relations between Northern and Southern laboratories;
- promotion of scientific competitiveness of Southern research teams with regard to Northern ones; and
- reinforcement of South-South cooperation.

As for the **means**, they should double to 80 M ECU (requested by the Commission), of which 60 M ECU will be assigned to the subprogram "Tropical Agriculture". The decision is to be made by fall 1987. The call for tenders should appear in the Gazette before the end of 1987.

The new measures will be implemented, either following traditional research contracts, or following other procedures, such as:

- the creation of associative research networks,
- aid for acquiring equipment,
- training and encouraging mobility through scholarships, and
- the promotion of basic research in the South.

Within the new program, a real policy for training and mobility will be instituted. It will be organized around the following general themes:

- intracommunity mobility of researchers, aiming among other things towards building closer relations between laboratories of Mediterranean countries;
- short field trips, notably to ease the transfer of technology to Southern countries;
- movement of young Northern researchers towards the South and conversely in order to increase scientific competitiveness between the laboratories of both regions; and

- movement of scientists native to the South, and working in laboratories of the North, back to their home country, within the framework of a project, in order to counteract the brain drain and lay the foundations of a policy for local training of researchers. In other words, the return to home countries will be encouraged for high level researchers who might be tempted to take up a career in the North with efforts being made to reduce their isolation in the South.

Training and mobility within the future program will be encouraged by the two forms of scholarship contracts that I have already mentioned: a contract with the researcher or a contract with the recipient laboratory.

Priority will be given to contracts with the recipient laboratory within the framework of a research project.

For this purpose, the project proposals submitted to the Commission may plan for possibilities of hosting or exchange of researchers along the four configurations: North-North; North-South; South-North; South-South.

III - Conclusions

What the Commission, in charge of implementing the future STD program, wishes to retain among the conclusions of this seminar, would be an answer to a series of questions, some of which have already had partial responses:

- what training instruments should be privileged?
- what are the priority training levels to support and to aim for: second cycle, third cycle?

- how to meet the training needs?
- through support of national training centers? in Northern countries? in Southern countries?
- through high level training courses, organized under the aegis of the community?
- with scholarships on an individual basis or through contracts with recipient laboratories?
- through support of Southern laboratories? namely by financing the equipment for the implementation of a research project?
- by creating a scientific infrastructure in Southern countries which could offer openings to researchers from these countries?
- through "twinning" of laboratories, especially North-South?

Even partial answers to these questions would greatly help the Commission to determine the priorities and the emphasis to be given to the various items and action procedures of the program, as well as to select future proposals, thereby contributing to greater ability in meeting the more urgent needs of the Southern countries for which the program is intended.

The criteria for the evaluation and selection of projects will indeed be a determining factor in the outline that this action will have once it is implemented.

ICAMAS could, it seems to me, play a rôle as an interface and intermediary between the Southern countries and the Commission in the development of the most appropriate answers for general application in this field.