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REPORT FROM THE COMMISSION TO THE COUNCIL

CONSERVATION AND UTILIZATION

OF PLANT GENETIC RESOURCES

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I INTRODUCTION

In response to the Council of Agricultural Ministers' raising of the issue of the conservation and utilization of plant genetic resources at its 1394th meeting on 26/27 March 1990, the Commission sets out below a summary of the work undertaken in this field, covering the following:

- 1) reinforced coordination of Member States' activities as regards conservation and utilization of plant genetic resources,
- 2) promotion of research,
- 3) transfer of knowledge and of research results,
- 4) maintenance and utilization of the plant genetic material collected.

Article 5 of Council Regulation (EEC) No 1728/74 of 27 June 1974 (OJ No L 182, 5.7.1974) provides for coordination at Community level of certain national research activities and for the implementation of joint projects.

It is on this basis that the Commission has undertaken the work which is the subject of this report.

II INVENTORY OF WORK CARRIED OUT

- 1) Activities undertaken under the various five-year agricultural research programmes

Reinforced coordination of Member States' activities has been achieved as a result of meetings and exchanges of research workers as part of the agricultural research programmes established by the Council Decisions set out below, covering the following periods:

- 1979-83: Council Decision 78/902/EEC of 30 October 1978, OJ No L 316, 10.11.1978)
- 1984-88: Council Decision 83/641/EEC of 12 December 1983, OJ No L 358 of 22.12.1983)
- 1989-93: Council Decision 90/84/EEC of 26 February 1990, OJ No L 58, 7.3.1990)

Specific coordination activities concentrated on more efficient and rational utilization of gene banks through improved coordination of the work of the scientific managers and standardization of the methods and definitions relating to the material collected. Subsequently, the plant material in the collections was surveyed with a view to finding genes resistant to diseases occurring in commonly grown agricultural crops.

The findings were made known at the time by way of publications and reports.

Promotion of research In this field was achieved by introducing contractual schemes carried out on a cost-sharing basis as part of the five-year agricultural research programmes referred to above. These activities led to the creation of useful and unique collections of plant material. The projects are as follows:

- experimental apple and pear orchard at Dax, France, where the new plant material, obtained through selective breeding, was tested for its resistance to fire blight,
- collection of plant material at Caserta, Italy, as a result of surveys of local populations of apple and pear trees in Greece, Sicily, Spain and Portugal, for resistance to fire blight,
- collection of plant material 15 kilometres north of Montpellier, France, (legumes and forage trees for sheep),
- experimental hazel orchards in Italy, Spain, Greece, Portugal and France, the result of genetic and physiological research and of research into cultivation practices,
- collection of pistachio trees at Capocotta (Rome, Italy), grouping together the principal varieties grown in the world,
- collection of local species of cruciferae in the United Kingdom, the Netherlands, Ireland, Denmark, Germany, Belgium, France and Italy.

Transfer of knowledge and of the results was achieved via the publishing and distribution of works connected with the coordination and contractual activities referred to above.

2) Activities undertaken under other specific Community research programmes

(a) Specific programmes

- The BRIDGE programme (1990-93) in the field of biotechnology has continued the development of molecular and cellular biology techniques with the aim of improving understanding of the mechanisms of reproduction of interest to breeders; cellular regeneration essential to the propagation of genotypes and the physiological ways in which plants express their great diversity.
- In the STD programme (1991-94) (Life Sciences and Technologies for Developing Countries) genetic resources are considered primarily in the framework of projects for improving plants and animals for the development of tropical and sub-tropical agriculture. Research aimed, for instance, at improving banana trees and heveas is based on surveys and live collections.
- The STEP (Science and Technology for Environment Protection, 1989-93) and EPOCH (European Programme on Climatology and Natural Hazards, 1989-93) programmes have made it possible to examine the impact of environmental factors on the conservation of biodiversity.

- The FOREST programme, (1990-92) has made it possible to proceed with the genetic characterization of tree populations (oaks, cedars, etc.) with the aim of developing conservation and reforestation strategies and collecting base material for future selective breeding.
- Under the ECLAIR (European Collaborative Linkage of Agriculture and Industry through Research (1988-93) and FLAIR (Food Linked Agro-Industrial Research Programme, 1989-93) programmes, a number of industry-orientated projects have been financed. These projects have made it possible to take account of genetic/biological diversity.

(b) Other programmes:

- CUBE (Concertation Unit for Biotechnology in Europe) has ensured coordination between the Biotechnology programmes and the other Community programmes and regulations (e.g. rules on Intellectual property) and has also provided information to the public. Community financial contributions have been granted for the development of data bases.

As part of the FAST II programme (Forecasting and Assessment in Science and Technology, 1984-87), an international conference was organized in Dublin in 1987 on the topic "Biological Diversity: a challenge to Science, the Economy and Society".

III SHORTCOMINGS

As the activities referred to under II above progressed, it emerged that certain scientific and financial problems remained to be resolved.

1) Scientific problems

- a) overlapping of work of the institutes concerned;
- b) poor cooperation between governmental organizations and non-governmental organizations, which include universities, botanical gardens, local authorities, specialist associations, etc.;
- c) duplication as regards the plant genotypes kept and evaluated;
- d) lack of information on plant genotypes collected but not yet analysed;
- e) lack of information on plant genotypes still to be collected.

2) Financial problems

- a) The Member States are responsible for the maintenance (i.e. evaluation, regeneration, propagation, etc.) and utilization of the above-mentioned collections. This requires a constant financial effort which some of them cannot guarantee owing to the budgetary restrictions imposed on them, and this means a choice of priorities has to be made. Hence, some collections of plant material could disappear for ever, thereby causing an irreparable loss of genetic material which breeders might need in the context, say, of less intensive, environment-friendly and more diversified agriculture.

- b) It should be pointed out in this connection that Parliament has approved budget heading B2-517 ("Community programme for the conservation of plant genetic resources". This new heading in Section III - COMMISSION - Part B of the budget has a commitment appropriation of ECU 2 million for 1992.

IV MEASURES TO BE TAKEN

The Commission proposes that the following measures be taken by the Community and the Member States.

1. Inventory

The Commission would continue to draw up and update the inventory of the coordination and research activities undertaken in the field of plant genetic resources within the framework of specific Community research programmes and those undertaken at national level in each of the Member States.

2. Coordination activities

For the purpose of reinforcing the coordination of the Member States' activities with regard to the conservation and utilization of plant genetic resources, the following should be undertaken:

- i) the organization of seminars, workshops and scientific conferences,
- ii) the introduction of training and mobility schemes for research workers based principally on a multi-disciplinary approach,
- iii) the promotion and development of "concerted" activities, initiated by the Commission, aimed at rationalizing work and avoiding duplication,
- iv) the transfer of knowledge and of the results of research in this field through the preparation and distribution of scientific reports at Community level.

The above activities would be carried out and financed within the framework of the specific programme of research and technological development and demonstration in the field of agriculture and agro-industry, including fisheries (1990-94).

In order to pursue the activities referred to in i) to iv), the Commission will continue its consultations with the Member States through the intermediary of the Ad Hoc Working Party of the Standing Committee on Agricultural Research (SCAR), consisting of national coordinators of programmes dealing with plant genetic resources.

3. Promotion of research

The promotion of research would continue through the carrying out and financing at Community level of shared-cost research activities. The latter would be developed within the framework of the specific programme of research and technological development and demonstration for the European Economic Community in the field of agriculture and agro-industry, including fisheries (1990-94) and the specific programme on biotechnology (1990-94).

The latter includes a section on the conservation of genetic resources, with the aim of improving understanding of the erosion of genetic resources and residual genetic variability, by means of more systematic application of the techniques of molecular biology.

The research activities would focus primarily on more systematic and efficient evaluation and utilization of material collected, including material and techniques obtained through biotechnology, concentrating efforts on species and varieties originating in Europe and which are important for European agriculture. In order to be eligible, the proposals for research would have to be in line with the objectives and requirements of the common agricultural policy.

4. Maintenance and utilization of the collections

- (a) Although the Member States are responsible for the maintenance and utilization of the collections, in some cases work cannot be pursued for lack of funds. This situation could give rise to an erosion of genetic resources. The Commission therefore proposes that in such cases Community action should supplement that of the Member States.
- (b) In addition, on the basis of the Council's directives for negotiations, the Commission has taken part, on behalf of the Community, in the negotiations for the establishment of an international convention on the conservation of biological diversity.
This convention is due to be signed in connection with the UNEP (United Nations Environment Programme) at the conference in Rio next June. Under this convention the Commission will have to make provision for schemes for the conservation of plant genetic resources, covering not only cultivated species but also wild species which might prove useful in the future.

V CONCLUSIONS

- 1) The Commission will continue with the establishment and updating of the Inventory of the coordination and research activities on plant genetic resources in the Community's specific research programmes.
- 2) The Commission plans to pursue and improve coordination of the activities undertaken in the Member States as regards conservation and utilization of plant genetic resources within the framework of the Community research programme on agriculture and agro-industry, including fisheries (1991-94), laying emphasis on the development of concerted activities.
- 3) The Commission will ensure promotion of research in this area through shared-cost scientific activities, principally within the framework of the specific programmes of research in the field of agriculture and agro-industry, including fisheries, (1990-94) and biotechnology (1990-94).
- 4) In view of the financing difficulties encountered in some Member States in connection with the conservation and utilization of plant genetic resources, the Commission proposes that the gap should be filled by Community action complementary to the Member States.

To sum up, the Commission takes the view that a Community programme in the field of conservation and utilization of genetic resources in agriculture is definitely needed. The Commission intends shortly to submit a proposal on the subject to the Council. The implementation of such a programme will involve specialized personnel and funding to cover the administrative expenditure on the programme. This expenditure will be met from the overall appropriations allocated to the programme.

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