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EXAMPLES OF CO-OPERATION OUTSIDE AFRICA

(Note by the secretariat)

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Document E/CN.14/EP/14 describes a number of examples of co-operation between African countries with a view to the utilization of electric power resources. It was thought desirable to cite, for purposes of information, two cases illustrating such co-operation under the auspices of the United Nations, one in Europe and the other in Asia.

In some cases, the means of producing electric energy can be developed only through a measure of international co-operation.

(a) Disequilibrium in the long-term power balance of two adjacent regions

Such a state of affairs occurs where a country's electric potential, seen in the light of the energy resources at its disposal, greatly exceeds its present demand and the demand foreseeable for a long period ahead. If the country in question should develop its resources in keeping with its own demand only, there would remain, principally in the case of water resources, an unused potential output of electric energy which could be exported to neighbouring countries or, as has been done in the past, which could be used locally by industries producing goods for export. However, the investments necessary for the construction of such installations and the shortage of capital in the developing countries usually make it impossible for these countries to undertake the accelerated development of their resources for export purposes. Outside participation is therefore necessary. In this connexion, Yougelexport will be taken as an example.

It is one of the concerns of the Committee on Electric Power of the United Nations Economic Commission for Europe to promote and facilitate transfers of electric power across the frontiers of the various European countries. A study on this subject was published by the secretariat, the conclusions of which were adopted by the Committee.

This study in particular drew the attention of European countries to the magnitude of the natural resources of Yugoslavia, whose economically harnessable hydro-electric potential is estimated at about 66,000 million kWh, of which only 5 per cent are harnessed, and whose sub-soil, in addition, contains by no means insignificant quantities of solid fuels.

Now some neighbouring countries, such as Italy, or areas, such as Bavaria, have already harnessed the great part of their own resources. Having regard to the rate at which electric power consumption is expanding and to the fact that in no country does it as yet show any sign of reaching saturation, these neighbouring areas or countries will be obliged in the fairly near future to supplement their supplies by importing power.

The secretariat's study therefore recommended that a detailed examination be undertaken of the prospects of installing in Yugoslavia certain hydro-electric power plants the output from which would be intended for neighbouring countries.

Following informal meetings between representatives of the countries which had expressed interest in such a scheme, a group was set up which in turn established an inter-governmental body known as "Yougelexport" to carry out the detailed study. Yougelexport ultimately comprised four quadripartite committees, each consisting of one expert and one alternate appointed by each of the following countries: Austria, the Federal Republic of Germany, Italy and Yugoslavia. The Committee on economic questions was presided over by the expert from the Federal Republic of Germany, that on technical questions by the Yugoslav expert, that on financial questions by the Austrian expert, and that on legal questions by the Italian expert, the meeting place of each committee being, in principle, the country of its chairman. The four chairmen of these committees constituted a Co-ordination Committee, which met under the chairmanship of a member of the Secretariat of the Economic Commission for Europe.

The various committees of Yougelexport together worked unremittingly on the problem at the thirty-two meetings which they held during 1953 and 1954. Their members also visited the main sites proposed for the projected works. In addition, four experts appointed by the United Nations Technical Assistance Administration studied the technical features of the scheme, and gave valuable advice to the Technical Committee. As a result of the work of this body, it was possible to:

- ascertain the potential market, i.e. determine the quantities of power which might be imported by the neighbouring countries concerned;
- select and define the characteristics of four of the seventeen preliminary projects proposed by Yugoslavia;
- plan the distribution of the power produced on the basis of the six stages in which the work was to be carried out;
- define the characteristics of the transmission network to be constructed for the export of this power;
- determine the cost of the power at the place of delivery;
- suggest methods of financing;
- propose a legal basis for the contracts to be used.

The total capacity of the planned installations was ultimately 2,000 Mw, corresponding to a production of 4,400 million kWh, mainly during the winter, and requiring investments of $310 million in respect of the producing installations and $70 million in respect of the transmission network in Yugoslav territory.

After it had been studied by Yougelexport at the government level, the project was taken over by enterprises, and the planned power plants are under construction, although the financing methods initially proposed were subsequently modified in certain respects.

(b) Watercourses of common interest

Another case is that of the development of a watercourse of common interest, and in this connexion the Mekong will be taken as an example.

The Mekong rises at an altitude of 5,000 metres, in the snow-covered mountains of Tibet, and flows southward, passing through or skirting China, Burma, Laos, Thailand, Cambodia and Viet-Nam. The section between the Burmese frontier and the sea (with a total length of 2,436 km), which is generally known as the Lower Mekong, has a total drainage area of 609,000 km^2, extending over the territories of the other four riparian countries. Fed by melting snow, the Mekong has a number

of tributaries in its lower reaches; it never dries up, and the devastating floods it causes aggravate the damage wrought by the heavy monsoon rains throughout its lower valley.

The systematic study of the economic and technical possibilities of the Mekong valley was begun in 1951, when the United Nations Economic Commission for Asia and the Far East (ECAFE) decided to investigate the technical problems raised by international rivers. In May 1952, the Secretariat submitted to the Commission a preliminary report on the technical problems relating to flood control and to the development of the water resources of the Mekong.

Subsequently, in 1955-1956, the United States Bureau of Reclamation carried out a reconnaissance of the possibilities of developing the valley (under a Special Project Agreement signed in November 1955 by the four riparian countries, namely, Cambodia, Laos, Thailand and Viet-Nam, and by the United States). The report drawn up as a result of this reconnaissance indicated the possibilities in various fields, such as navigation, irrigation, flood control, fisheries and power production.

In 1956, ECAFE organized an on-the-spot survey, with the co-operation and assistance of the Governments of the four riparian countries. The work involved was carried out by a team of staff members of the ECAFE Secretariat with the assistance of four special consultants.

The report prepared as a result of this mission contained specific suggestions concerning the choice of projects "recommended for detailed investigation". In addition, it mentioned the need for international co-operation, on the ground that, for the purpose of deriving the maximum benefit from the river's possibilities and of the general development of its water resources, a comprehensive programme would have to be undertaken, transcending political frontiers.

At its thirteenth session (1957), the Commission unanimously approved that report, and on the same occasion the delegations of the four riparian countries presented a joint statement in which they expressed the wish "that such studies be continued jointly with the four countries concerned". In pursuance of this statement, the four Governments established, in 1957, the body known today as "The Committee for Co-ordination of Investigations of the Lower Mekong Basin", on which each of them is represented by a member with full powers. Later, owing to the steadily increasing volume of work, it was considered necessary to appoint a full-time official - the Executive Agent - empowered to take decisions in cases of urgency on behalf of the Committee, and to provide him with competent staff.

As a result of a request submitted by the four riparian countries in 1957, the United Nations Technical Assistance Administration sent out a special technical mission which, in January 1959, submitted a most valuable report. While emphasizing the need for reliable data, this report outlined a vast research programme and indicated the approximate cost involved. It estimated that about five years would be necessary to carry out the research work required and that total expenditure would amount to about $9.2 million.

It was obvious that the four riparian countries could not provide the funds required for gathering these data and undertaking the other research work necessary; international reaction was reassuring, however. From various countries and United Nations specialized agencies, the Committee received offers of financing or offers to carry out the work mentioned in the report. By the end of 1961, twelve countries and eleven United Nations specialized agencies had pledged, in cash or in kind, contributions amounting to $14 million; this sum was regarded as sufficient to embark on all data collection programmes and to finance the planning of at least some of the proposed projects.

The development of the Mekong, so far as can be judged at the present time, will comprise five projects along the principal river and twelve projects on the tributaries. The following figures, although not detailed, give an idea of the magnitude of the total scheme:

Installed capacity (Mw)	4,480
Firm power production (in million kWh/year)	27,430
Irrigated area (km^2)	27,560
Development of navigation (miles)	525

The two cases described above were cited for purposes of illustration only, since each particular case calls for its own specific approach (as in the development of the Senegal River, for example, a survey of which is at present in progress under United Nations auspices). However, they show the part which the regional commissions of the United Nations can play as catalysts in the realization of projects the study and implementation of which required international co-operation.