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COMMITTEE ON INDUSTRY AND NATURAL RESOURCES

PROVISIONAL SUMMARY RECORD OF THE THIRD MEETING

Held at Mar del Plata, Argentina
on Tuesday, 14 May 1963, at 10 a.m.

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- (a) Evaluation of natural resources
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 - (c) Electric power

Note: Delegations wishing to submit corrigenda to their statements in this summary record for inclusion in the final version are requested to make their corrections on a mimeographed copy of the record. The corrected copy should reach Miss Juanita Eyzaguirre (Conference Officer), Room 102, not later than forty-eight hours after distribution.

PRESENT:

<u>Chairman:</u>	Mr. VALDIVIA	(Peru)
<u>Members:</u>	Mr. GRANDI)	Argentina
	Mr. GARCIA)	
	Mr. GANDARILLAS VARGAS	Bolivia
	Mr. BARBOSA DE OLIVEIRA	Brazil
	Mr. SUMMERS	Canada
	Mr. PEÑA	Chile
	Mr. GOMEZ	Colombia
	Mr. GARCIA INCHAUSTEGUI	Cuba
	Mr. PEÑA QUEZADA	El Salvador
	Mr. ABADIE	France
	Mr. CALIX	Honduras
	Mr. CLARKE	Jamaica
	Mr. RADHAKISHUN	Kingdom of the Netherlands
	Mr. DELGADO	Mexico
	Mr. GAITAN	Nicaragua
	Mr. GONZALEZ	Paraguay
	Mr. UGARTECHE	Peru
	Mrs. LOWRY	United Kingdom of Great Britain and Northern Ireland
	Mr. BINGHAM)	United States of America
	Mr. TURNAGE)	
	Mr. GIORGI	Uruguay
	Mr. PEREZ LA SALVIA)	Venezuela
	Mr. EIRIS-VILLEGAS)	

/ALSO PRESENT:

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Observers from States Members
of the United Nations not
members of the Commission:

Mr. SCHWALD	Austria
Mr. PRUES	Belgium
Mr. PIROCH	Czechoslovakia
Mr. BEHMKE	Denmark
Mr. KEPES)	Hungary
Mr. JOZSA)	
Mr. TANI)	Japan
Mr. MITSUOKA)	
Mr. ROMMEL	Poland
Mr. RUICA	Roumania
Mr. BISSOLS	Spain
Mr. MARTENSON	Sweden
Mr. KOSSAREV	Union of Soviet Socialist Republics
Mr. PROTIC	Yugoslavia

Observers from States not
Members of the United Nations:

Mr. MEWES	Federal Republic of Germany
Mr. BERTHOUD	Switzerland

Representatives of
specialized agencies:

Mr. KALKKINEN	Food and Agriculture Organization of the United Nations
Mr. de SILVA	United Nations Educational, Scientific and Cultural Organization
Mr. VARGAS	World Health Organization
	<u>/Representatives of</u>

Representatives of inter-
governmental organizations:

Mr. CARDENAS)	Inter-American Development
Mr. REY ALVAREZ)	Bank
Mr. DELONS	Inter-Governmental Committee for European Migration
Mr. BANZAS	Organization of American States

Representatives of non-
governmental organizations:

<u>Category A:</u> Mr. AGUIRRE	International Confederation of Free Trade Unions
Mr. LANDSBERG	Resources for the Future
<u>Category B:</u> Miss CASSAGNE	International Council of Women
Mrs. MORRISON	International Federation of Women Lawyers

Secretariat:

Mr. DORFMAN	Secretary of the Committee
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NATURAL RESOURCES AND ELECTRIC POWER (continued)

- (a) EVALUATION OF NATURAL RESOURCES
- (b) DEVELOPMENT OF WATER RESOURCES
- (c) ELECTRIC POWER

Mr. GIORGI (Uruguay) said that electric energy was a major concern in his country which had no fuel and forest reserves and therefore had to import the fuel it needed for the generation of electric power. Uruguay was therefore determined to make the most of its water resources and had already set up two hydro-electric plants, one of which had an installed capacity of 230,000 kW and the other of 170,000 kW. It intended to expand its output of electric power and had established a programme covering the period ending 1968. In Uruguay electric power was a State monopoly exercised through an autonomous agency. Individuals wishing to generate electric power could do so for their own use but not for sale to third parties. In addition to its domestic projects, an agreement had been reached between Uruguay and Argentina for the construction of a hydro-electric plant on the Uruguay River. Under the agreement, which had entered into force in 1958, Brazil had been invited to attend a meeting held for the purpose of considering navigational changes on the Uruguay River resulting from the project. A joint declaration had been issued in which Brazil had expressed its approval of the joint project.

Three French engineering firms had been engaged to prepare a technical, economic and financial report on the project, known

/as the

as the Salto Grande project. The report had been submitted in march 1962. The Salto Grande project inter-connected the electric power transmission systems of Argentina and Uruguay. The inter-connection of systems would bring electricity to areas in which it had so far been unavailable.

With respect to the work being done by ECLA in the field of electric power, he suggested that the Commission should recommend to its member States: 1. to develop the broadest possible measure of rural electrification as a means of improving living and working conditions in rural areas; 2. to achieve the integrated development of water resources on the basis of multi-purpose projects such as that jointly undertaken by Argentina and Uruguay; 3. to study the possibility of increased inter-connection of systems between adjacent countries.

Mr. UGARTICHE (Peru) said that Peru had overcome a number of obstacles which had prevented it in the past from ensuring an adequate supply of electric power to meet its requirements. Lima and other major cities no longer suffered from a shortage of electricity. Peru's relatively favourable situation was due to two factors: 1. its abundant natural resources; 2. sound legislation which had created an atmosphere of confidence among private investors; in fact the installed capacity of private utilities had doubled. State support was not very extensive. A fair tariff system, fixed by an autonomous agency, was being applied.

/Peru was

Peru was also looking to the future and had carefully studied its electric power requirements for the next ten years. Planning had been entrusted to two offices, one responsible for the natural resources sector and the other for electric power.

He was gratified to note the valuable work being done by ECLA in the field of electric power, as reflected in the documents before the Commission. An ECLA unit was currently working on natural resources in Peru.

Mr. de SILVA (United Nations Educational, Scientific and Cultural Organization) said that UNESCO's functions in relation to natural resources were basically inter-disciplinary and synthetic. The need for the standardization of modern research methods with respect to natural resources had been recognized among experts. UNESCO was contributing by preparing international scientific maps and engaging in soil biology studies.

UNESCO's work on natural resources in Latin America consisted of maintaining up to date data, which had so far been lacking in comparability, and promoting the use of such data for scientific purposes. It was also preparing geological maps for the area.

A major forthcoming project was the International Hydrological Decade, in which the United Nations, FAO and WMO were co-operating, with UNESCO acting as co-ordinator. UNESCO was also sponsoring a conference on arid soil in Latin America, to be held next September in Buenos Aires.

/While ECLA

While ECLA and UNESCO were maintaining close co-operation, it was important that such co-operation should exist between ECLA's economists and UNESCO's scientists. Moreover, Government executives should seek to keep in close touch with scientists.

Mr. GANDARILLAS VARGAS (Bolivia) said that water was an essential item in Bolivia since most of the population lived and worked in arid and semi-arid areas. The Bolivian Development Corporation had requested ECLA to carry out a preliminary survey of the country's water resources and the use being made thereof. ECLA was being assisted in its work by experts from BTAO and WMO. The ECLA mission had also co-operated in the preparation of Bolivia's National Development Plan. The mission's report had been submitted to the session in document E/CN.12/688. Its recommendations had been carefully considered and action had already been taken on some. Studies of that type contributed to economic development programming in Latin America and should therefore be continued by the Secretariat.

Mr. GRANDI (Argentina) said that ECLA's work in the field of water resources was based on two major premises: 1. the importance of water resources for development programming; 2. the importance of hydro-electric resources and their use in face of the growing demand for electric power. ECLA's work had varied in scope from country to country, with comprehensive national studies for Chile, Ecuador and Venezuela, and a study

of a single region (North Patagonia) in Argentina which, however, was gradually being extended to cover the country as a whole. In Central America, only a hydro-electric survey had been carried out.

ECLA's future work should be based on the following activities: 1. continuation of the study on evaluation and optimum use of water resources; 2. the carrying out of that study as an integral part of an economic and social development programme and in close co-operation with planning or development agencies; 3. continuation of the study on the over-all, multi-purpose development of watersheds, extending it to adjacent areas where necessary; 4. extension of the study to the organization, methodology and co-ordination of basic studies on important international watersheds; 5. analysis of more specific and limited areas of water resources in order to promote and orient projects on the use and control of water; 6. with respect to the preparation of specific plans on the over-all use of water resources, the establishment of joint regional or national groups which would also deal with such other resources as land, forests, etc.

After describing the work being done in Argentina with ECLA's co-operation, the details of which were contained in document E/CN.12/625, he said that it was a striking example of co-operation between international and national agencies which could usefully be followed by other Latin American countries.

/Mr. PEÑA

Mr. PEÑA (Chile) said that between 1940 and 1960 the electrification coefficient in Chile had risen from 29.4 to 38.1 per cent, installed capacity from 487 MW to 1,142 MW, the proportion of hydro plants from 39.6 per cent to 65 per cent, and the public utility output from 180 MW to 600 MW. Chile's hydroelectric potential represented some 24 million kW, of which present use amounted to about 3 per cent. For the central area of the country projections of consumption and generating costs to 1995 had been prepared. The ten-year development plan for 1961-70 had allocated investment to the energy sector representing 12 per cent of the national total, of which about two-thirds was for electricity. Development was financed by reinvestment of revenue, contributions from the development corporation (CORFO), and external loans, mainly from international organizations. Despite the importance of hydroelectric resources, the use of water for sanitation and irrigation was given priority. He gave a brief account of the aerial soil survey being conducted in conjunction with OAS, and of mineral prospecting assisted by the United Nations Special Fund.

Mr. KALKKINEN (Food and Agriculture Organization) said that FAO's activities in the field of natural resources were chiefly centred on the evaluation of forest resources by means of surveys and detailed studies covering broad areas. Such pre-investment studies included standardization of data on resources, which varied from country to country, definition of the type of soil best suited for agriculture, and determination of areas for reforestation programmes.

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There was a close inter-relationship between forest, soil and water. Only when the balance between the three components was upset was sufficient attention given to the conservation of those natural resources. The disappearance of the wood cover in water-collecting areas led to gradual soil erosion until the situation became so acute that no country could afford to spend the funds needed to repair the damage. It was paradoxical for countries to be prepared to go to war over the possession of a few kilometres of arid land along their borders when every year millions of tons of soil were carried away by rivers into the sea with nothing being done about it.

FAO and ECLA were co-operating closely in the field of soil and water resources. The Latin American countries needed experts to administer their forestry programmes. In fact, there were more such experts in a small country like Finland than in the whole of Latin America.

Mr. R. DHAKISHUN (Kingdom of the Netherlands) prefaced his remarks by expressing the hope that in future the valuable documents produced by ECLA would be issued in the three official languages of the Commission. He also wished to point out that in document E/CN.12/670/Add.1 his country, Surinan, appeared under its old name of Dutch Guiana, and hoped that oversight would be corrected. Surinan had realized that orthodox methods of surveying natural resources would involve waiting thirty years or so for geological maps, and had accordingly undertaken, in 1958,

/a plan

a plan to produce such maps within five or ten years by modern survey methods, involving air transport and geophysical surveys from the air. In many cases that meant building the airstrips and organizing the air services needed. The completed topographical map would be deposited with UNESCO's cartographic centre. The whole project, known as "Operation Grasshopper" would cost about 14 million dollars, but the Special Fund had agreed to contribute 750,000 dollars to an electromagnetic survey by air. The first results of the project had been promising, indicating reserves of 300-400 million tons of high grade bauxite. In the light of Surinam's experience, his delegation was pleased to support the draft resolution on natural resources submitted by Argentina.

With respect to water resources, there was large-scale distilling of sea water in the Netherlands Antilles to produce drinking water and power for domestic and industrial use. An agreement had been reached with ALCOA that involved the building of a large hydroelectric plant in Surinam, and plans were under study for additional hydroelectric production.

He referred to the document Latin American Timber Trends and Prospects which, together with the statements made by FAO representatives to the Committee, indicated a bright future for the Latin American forest industries. A survey of 100,000 hectares of forest in Surinam between 1950 and 1962 indicated the need for more rational utilization of forest resources, and the necessary steps were being taken.

/Mr. BINGHAM

Mr. BINGHAM (United States of America) said that Latin America was richly endowed with natural resources, and that developing those resources was very important in terms of increasing exports; that had already been done with some success in exports of iron and fish meal. Document E/CN.12/670 was impressive, and he hoped it would be made available in English. One aspect it referred to, conservation, had long been emphasized in the United States. Some forms of resource development promoted conservation, such as multi-purpose regional development of rivers, but in others conservation safeguards were necessary. The ECLA document had pointed out that during the first five decades of the twentieth century man had consumed more raw materials than during the whole previous course of his history. That pointed to the need for rational programming and limitation of the exploitation of such non-replaceable raw materials as minerals. As the document indicated, Latin American natural reserves of petroleum would only last something like seventeen more years, at the present rate of exploitation. It also showed that for bauxite, for example, Latin American production was high in relation to reserves, compared with the world figures, whereas for copper and iron the reverse was true. He pointed out that the rational development of natural resources in Latin America for the benefit of future generations would depend largely on the human resources available, and that there was an urgent need to train the personnel needed for the task. His delegation has pleasure in supporting the draft resolution on natural resources submitted by Argentina.

/Mr. ABADIE

Mr. BADIE (France) said that the development of natural resources should, of course, be based on a rational and systematic development plan, preceded by a most careful inventory of those resources. Lack of adequate knowledge of resources might well result in a waste of funds. ECLA recommended the preparation of large-scale topographical maps with the help of aerial surveys. Such maps should be made available to those concerned with projects relating to economic development. Geological maps, an essential factor in an inventory of natural resources, had been neglected. While large-scale maps were most suitable, in view of the urgent need for geological maps steps might first be taken to prepare smaller-scale maps of major areas not yet surveyed.

Another factor in making an inventory of natural resources was that undue haste, at the expense of efficiency, should be avoided. On the contrary, the required basic data should be carefully assembled and periodically reviewed.

With respect to research and development of mining resources, ECLA had rightly stressed the need for modernization of legislation governing mining activities. Unsuitable legislation often paralyzed mining research, whether carried out by the State or by private enterprise. Modern prospecting involved teams of scientists, geologists, geophysicists, geochemists and miners working in the field and in laboratories and requiring considerable funds. Public and private enterprises which risked their capital on research should be protected by the law which, at the same time, should prevent some areas from being paralyzed by inactive concessionaires.

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He was pleased to note that French technology had for a number years been associated with the scientific and systematic inventory of the natural resources of Latin America. Some French methods, used successfully in deserts and tropical countries, might be applied to good advantage in Latin America where comparable natural resource problems existed.

Mr. LANDSBERG (Resources for the Future) said that the body he represented was a private non-profit research organization financed by private foundation funds. Its aim was to broaden knowledge of the use and economic management of natural resources and publish the results of its research on the economics of land, water, energy and minerals. The three main groups of problems dealt with related to the economic utilization of the country's resources, the adequacy of resources to the future growth of the United States, and the quality of resources. A long-range study covering the rest of the present century dealt with such matters as water pollution, open spaces for recreation, disfiguring of the landscape by mining and other activities, and similar questions. He was looking forward to co-operation with the Latin American Institute for Economic and Social Planning in that field.

Mr. DELGADO (Mexico) said that the importance of natural resources from the standpoint of Latin American industrialization and regional integration could not be over-estimated. Lack of data on natural resources had been a major obstacle to planning and was the result of the failure of the Latin American countries to carry out a proper inventory. That was all the more urgent

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in view of the loss of vast quantities of non-replaceable natural resources. Such inventories could not be carried out without the assistance of international agencies.

Another important factor was the proper use of natural resources in view of its effect on industrial and economic development programming. That applied particularly to water and electric power. In Mexico, electric power was completely in the hands of the State and a new agency responsible for water resources had been set up, which was giving careful attention to the country's irrigation requirements in view of the vast areas of arid soil still without water.

Mr. GONZALEZ OVIEDO (Paraguay) said that Paraguay was carrying out an electrification project in co-operation with the Inter-American Development Bank. It wished to set up a hydro-electric plant to reduce the cost of electric power now being generated by thermal plants.

He congratulated ECLA on its work in the field of natural resources and thanked it for its assistance in the preparation of an economic development plan now being carried out in Paraguay with the help of an OAS/IDB/ECLA technical assistance group. Since no inventory had ever been taken of Paraguay's natural resources, he hoped that the group would assist in the carrying out of such an inventory.

/Mr. GARCIA

Mr. GARCIA (Argentina) said that his country had attained self-sufficiency in mineral fuels by extensive exploitation of its reserves of petroleum, gas and coal. Petroleum reserves were of the order of 800 million cubic metres. There had been extensive training of the technicians required. The number of wells had risen from 247 in 1952 to 1,427 in 1961, but production per well did not compare favourably with that in other countries. To reduce costs and facilitate distribution large oil and gas pipelines were being built, and prices were being set at levels that would cover amortization and interest payments. International financial assistance would permit the use of improved refining techniques, and a proper development of known petroleum resources that would contribute to the work of economic integration.

Research had shown that the high-grade coals of the large Rio Turbio coalfields could be used in combination with other coals in conventional steel plants, and could thus contribute to the steel industry that was being established. Output was 300,000 tons a year, used alone or in conjunction with petroleum byproducts for industry, transport and domestic use. An annual production of 1 million tons annually would be required to enable Argentina's coal to compete both with imported coal and with domestic hydrocarbons, but the domestic market would have to be expanded to include the supply of fuel to electricity plants, in order to bring production up to the economic level.

/With respect

With respect to electricity, Act No. 15,336 of 1960 had remedied past errors with respect to the rates policy, and opened the way for new investment on the bases of long-term loans at low interest rates. He gave a detailed account of the electricity supply system of Argentina, and future plans for its development. The latter included extensive interconnexions with a view to a connected national system. It was hoped that international financial assistance would be available in support of those plans. If such assistance were provided, the Latin American countries could be counted on to play their part by enacting the necessary legislation, putting their enterprises on a sound economic footing, and producing integrated plans. He hoped that ECLA would pursue its studies in the field, and would convene another conference on electric power, perhaps with a limited agenda dealing with such matters as rural electrification, hydroelectric potential, management of utilities, and efficient use of power.

Mr. LA SALVIA (Venezuela) said that Venezuela was devoting special attention to energy resources, particularly hydroelectric resources. The main source of hydro power was the River Caroní basin, representing 15 million kW. A further 18 million kW was produced by other river systems. In 1963 work would begin on a project on the Upper Caroní that would produce 700,000 kW at the first stage, and eventually 6 million kW. There were eventual plans for the integration of all existing electricity systems. The inclusion of the Caracas system in the national

/system involved

system involved great expense because of the change involved from 50 to 60 cycles, representing a cost of about 10 million dollars for the change of equipment alone. The existence side by side of 50-cycle and 60-cycle systems posed a problem for electricity integration plans that deserved special study by ECLA.

The meeting rose at 1.30 p.m.

