

PROGRAMA DE LAS NACIONES UNIDAS  
PARA EL DESARROLLO EN BOLIVIA

UNITED NATIONS



UNITED NATIONS  
DEVELOPMENT PROGRAMME  
NATIONS UNIES

4752

TELÉF. 52448 - 23279 - 23403 - 50415

REFERENCIA: PRO 303/OTC/1455 *KORN*

RECEIVED IN RECORDS CONTROL

19 FEB NACIONES UNIDAS

CASILLA 686

AV. ARCE No. 2419

LA PAZ-BOLIVIA

CHA/ppr.

CABLES: "UNDEVPRO" LA PAZ

Nos. "TELEX"

ALL AMERICA (ITT): 3560030

WEST COAST: BX5246

5 February 1974

Dear Carmen,

Subject: BOLIVIA - UN Regular Programme

In reviewing our files, we can find only very scanty information on the UN Regular Programme in Bolivia. As a matter of fact the only mention of an approved project is Miss Henderson's letter of 20 November 1970 informing the Resident Representative of the approval of two twelve-month missions in public administration. There is no indication that this assistance was ever provided. A similar programme of assistance was, however, later carried out under project BOL/69/008.

In a letter dated 12 April 1971, Mr. Stig Anderson informed us of changes in the orientation of the UN Regular Programme and stated that no new requests would be entertained for assistance from Bolivia for 1972 onwards.

I would appreciate any information which you could provide on the programme prior to 1972.

Yours sincerely,

Juan Pascoe S.  
Resident Representative

Mrs. Carmen F. Korn, Chief  
Section for Human Resources  
Branch for Europe, Latin America and  
Interregional Projects,  
Office of Technical Co-operation  
United Nations,  
NEW YORK, N.Y.

RECEIVED

FEB 19 1974

SHR/ELAIP/OTC

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FEB 20 1974  
OTC/ELAIP/SHR



*Miss Allap*

*Con atentos saludos del Representante Residente*

RECEIVED

AUG 7 1970

SHR/ELAIP/OTC

RECORDS CONTROL

AUG 28 1970

Mrs. Carmen F. Korn  
Head, Human Resources Section  
Europe, Latin America and Inter-  
Regional Projects (OTC)  
United Nations  
New York, N.Y.

A large, stylized handwritten signature in blue ink.

Programa de las NACIONES UNIDAS para el Desarrollo

CASILLA 686 - TELEFONOS: 52448 - 23279 - 50415

LA PAZ - BOLIVIA





TP/ccc.

BK 3/2.4 BOL/2459

3 August 1973

TE 311/1 BOLIVIA

Dear Mr. Casati,

Subject: Bolivia - Integrated Rural  
Development Project Identification

In the absence on home leave of Mr. Jan van Scoij, I have pleasure in replying to your letter of 2 July. As I indicated in my cable No. MISC660 of 2 August, the ideas expressed in your letter are most interesting and opportune. Unfortunately, over the last few weeks, the Ministers of Planning and of Agriculture have both been absent abroad. In view of the considerable importance of the proposals in your letter, I would rather discuss it with either or both of the Ministers in person; I hope to be able to do this during the course of next week.

I do not expect to encounter any objections to the idea of an identification mission and, if the only time this year when such a mission can be organized from your end is October, then I strongly recommend that you commence arrangements. Should any unforeseen difficulties occur at this end, I shall inform you in the fairly near future.

Meanwhile, your letter has aroused considerable interest both here in the office and with the experts of two or three related projects with whom I have discussed it. As you probably know, for the last four years or so, UNDP has been providing assistance to the Government in two related projects in the Altiplano area: BOL/68/521, Improvement of Agricultural Production in the Altiplano, (FAO-executed), and BOL/68/514, Development of Groundwater on the Altiplano, (UN-executed).

These projects are now in their final stages; BOL/68/514 is now compiling the project final report, which it is confidently expected will identify interesting possibilities for

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Mr. H. Casati  
Chief, Service I  
FAO/IBRD Cooperative Programme  
FAO Headquarters  
Rome, Italy



..... the use of groundwater for irrigation purposes, as well as for domestic use in the area. A copy of a recent related memorandum elaborated by the Project Manager is enclosed. By October, the report will be virtually complete.

..... BOL/68/521 was scheduled to end in August; it has accumulated invaluable experience in "grass-roots" agricultural development on the Altiplano, and one of its interesting features (almost unique in UNDP projects) has been the creation of a revolving fund to supply inputs to the campesinos at cost on a supervised credit basis. After a very slow start in the first two years of the project, this scheme is now working well (within the limitations imposed by local conditions) and the project is in the process of being extended until the end of the year, precisely with a view to working out methods of continuing the programme of work after the end of UNDP assistance; a copy of the revision document is enclosed. I also attach a copy of a proposal prepared last year by the staff of BOL/68/521 for integrated agricultural development in the Altiplano, and a copy of a memorandum prepared by the Project Manager with reference to your letter.

The third element locally in UNDP assistance related to your letter is a Regional Planning project (BOL/71/010 and BOL/73/007). The present project is comprised of one adviser in regional development; however, the follow-up project will be a rather larger-scale operation. One of the experts to be provided is expected to be an Agricultural Planner for the Altiplano region (Oruro-La Paz). Its main function will be to coordinate all types of agricultural developmental activities, carried out by national, bilateral and multilateral organizations in the Altiplano and as such keep bolster up considerably the institutional aspect which as you correctly point is quite ineffective. (A copy of the draft project document BOL/73/007 was sent to Mr. Olcese under cover of our letter 2008 of 29 June. We hope to have this project approved by September.

In a meeting last week, the two Project Managers, the Regional Planning adviser and staff of this office had a very useful exchange of views concerning your letter. As a consequence, it has been agreed that we can probably come up with joint proposals for a programme on the Altiplano in connection with a possible ISRD credit. Without underestimating the

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difficulties of rural credit in Bolivia (with which several of the experts here are well acquainted, it is felt that we can produce recommendations for concrete action, -at least in this area-, without going through the study phase which seems to be implied in the proposals of DESEC as described in your letter.

I expect to have another meeting in the next few days, to discuss specific ideas, including at least preliminary guesses at the inputs required and useable, both in terms of credit and of any related technical assistance, as well as possible institutional arrangements. I will keep you informed of developments; meanwhile I would be grateful for any comments you may have on this letter.

Yours sincerely,

Timothy Painter  
Resident Representative a.i.

cc: Mr. Valdés, UNDP NY  
Mr. J. van Heerden, OTC, UN NY  
Mrs. C. Korn, OTC, UN NY  
Mr. Pichel, FAO Rome  
Mr. Samper, FAO Santiago

Ing. Chueca, BOL/68/521  
Dr. Groot, BOL/68/514  
Mr. Legna,  
Mr. van Rooij, SAA/CR



FOOD AND AGRICULTURE ORGANIZATION  
OF THE UNITED NATIONS

12/2 H77

Via delle Terme di Caracalla, 00100-ROME

Cables: FOODAGRI ROME

Telex: 61181 FOODAGRI

Telephone: 5797

Ref. BK 3/2.4 BOL

JUL. 2 1973

Dear Mr. Van Rooij,

BOLIVIA - Integrated Rural Development Project Identification

The latest IBRD report on economic position and prospects of Bolivia (November 1972) indicates the need for further investigation of and investment in the agricultural sector with particular regard to the traditional sector, especially in the Altiplano.

You are certainly aware of the importance the World Bank is giving to the development of the poorest strata of the agricultural sector and the trend of increasingly using IDA funds on projects of high social impact.

We have been requested by the World Bank to assist the Government in the identification and possibly preparation of integrated rural development projects which could be considered for financing by this Organization.

We have already received interesting documentation and views from Mr. J. Demeure, Director of DESEC and have read with interest the report issued by CONEPLAN on the International Meeting for Coordination of Technical Cooperation with Bolivia (February 1973).

X The identification of a rural development project will not be an easy undertaking. The organization of such a project will probably face serious difficulties because of the weakness of the public institutions in charge of agricultural development, the lack of coordination among them and the weakness of public finance. However, the establishment of CONEPLAN has been an important measure towards improvement of the organization and coordination of public sector investment and the preparation of a sound public sector investment programme and financing plan.

Mr. J. Van Rooij  
SAA/FAO Country Representative  
c/o UNDP - Casilla 686  
La Paz  
Bolivia

Copy for information to:

Dr. A. Samper Gnecco, ADG, Regional Representative for Latin America, Santiago



There are several different strategies that might be used to promote rural development. One of them, which we feel could prove the most appropriate is to identify specific regions where rural poverty is widespread (e.g. Altiplano), and then to prepare a comprehensive programme of assistance with emphasis on the resident or groups of residents of the regions rather than on specific commodities as is the case with the particular agricultural commodity approach, whereby credit lines are opened for selected crops which are predominantly grown by small farmers.

For your information and according to Mr. Demeure the following alternatives could be taken into consideration:

(a) a global plan elaborated by the Government including various regions and defined lines of development. DESEC would be prepared to participate in both the preparation and implementation of such a plan; and

(b) a plan designed for DESEC's areas and approved by the Government. Four zones would be considered: Alturas, Valle Alto, Chapare and Norte Santa Cruz. Total cost is tentatively estimated at US\$6.0 million equivalent.

We have no special comment to offer to these suggestions, but we would like to emphasize the importance of a criterion that will have to be observed during identification: "the multiplier effect". Every effort should be made to identify projects and programmes that can be implemented within the framework of the existing organizations, conveniently reorganized and strengthened, and that can be repeated on a large scale to progressively reach as many rural families as possible. In addition, sufficient experience has already been gained elsewhere to indicate a clear need for integrated packages of assistance to small farmers (including besides direct development actions, education, health, extension, training, related infrastructures, etc.).

One important factor will be institutional. In effect, without effective coordination at the highest level no successful highly structured rural development programme can be achieved. CONEPLAN could perhaps be the central point to achieve such coordination if conveniently strengthened both financially and in staff to become a sufficiently strong and well financed body capable of planning, assigning responsibilities and supervising the numerous agencies involved in agricultural development.

Our request for your collaboration at this stage is threefold: (a) inform the Government about our proposal to assist them to identify and later on prepare an integrated rural development project suitable for World Bank consideration and seek their agreement; (b) obtain a preliminary indication of Government programmes in this sector and the studies available and the status of actions already implemented (including pilot experience); and (c) your own views and comments concerning possibilities of rural development and the best ways to approach this problem.




X We have tentatively scheduled an identification mission in October with three to four experts for about four weeks. We hope that this timing would be convenient to the Government in the case they agree with our proposal. Please note that it would be difficult for us to assemble a suitable team later on in 1973 and would have to postpone the proposed mission until early 1974.

Finally, we suggest that you contact Mr. Demeure whose experience in rural development will certainly prove very useful.

With many thanks for your appreciated collaboration.

I am looking forward to hearing from you as soon as possible.

  
for H. Casati  
Chief, Service I  
FAO/IBRD Cooperative Programme



Mr. Norbert Falzon, Assistant Director-in-Charge  
of Co-ordination of Operations, RTD

2 August 1973

Attention Mr. Zdenek Lastovka, Chief  
Transport Section, RTD

TE 311/1 BOLIVIA

G. Bernard, Programme and Evaluation Unit Officer  
Europe, Latin America and Interregional Projects Branch  
Office of Technical Cooperation

BOLIVIA - Country Programme (1972-76) Tourism

Please refer to your memorandum of 26 June 1973,  
which among other things proposed a mission by our Special  
Technical Adviser, Mr. Jacques Seletti, to Bolivia with the  
purpose of discussing the proposed project in Tourism.

In this regard, please find attached copy of a letter  
dated 26 July 1973 from the Resident Representative a.i., in  
Bolivia in reply to the points raised in your above mentioned  
memorandum which is self-explanatory.



TELÉF. 52448 - 23279 - 23403 - 50415

REFERENCIA: PNUD.TA 1.6/2347

NACIONES UNIDAS

CASILLA 686

AVANCE No. 2419

LA PAZ-BOLIVIA

TO: Mr. J. Rapoport

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AUG 1- 1973

☐ - Action Completed  
☐ - Acknowledged  
☒ - No Action Required  
INITIALS: W

26 July 1973

W. Bernard MS/emc

CABLES: "UNDEVPRO" LA PAZ

Nos. "TELEX"

ALL AMERICA (ITT): 3560030

WEST COAST: BX5246

Dear Mr. Rapoport,

Please refer to your 6 July 1973 letter forwarding us comments made by Resources and Transport Division with regard to Tourism.

As you correctly point out, no specific project in the field of tourism appears in the Country Programme. This is due to the fact that funds from the IPF were committed mostly to ongoing projects allowing the inclusion of few selected new projects. Additionally, I should add that during the drafting of the Country Programme, the briefs submitted by UNOTC and UNESCO (both containing proposals for tourism-related projects) were forwarded to the Government. The authorities felt that projects for this sector would have to be financed from sources other than the IPF (mainly the IDB, IBRD and OAS).

During the annual Country Programme Review, due next year, I shall inform the Government of UNOTC's services in the Tourism Sector. However, I feel that priority for IPF projects will probably continue to be geared towards sectors such as agriculture, basic infrastructure and natural resources.

Yours sincerely,

Timothy Painter  
Resident Representative a.i.

Mr. Jacques Rapoport  
Deputy Director  
Europe, Latin America and  
Interregional Projects Branch  
Office of Technical Cooperation  
UNITED NATIONS, NEW YORK.-

cc. Mr. Valdés, UNDP

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2 AUG 1973

PRPS/ELAIP/OTC

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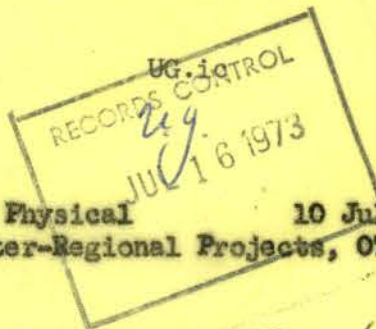
ORIGINAL DIRECT

Mr. Jan van Heerden, Chief, Section for Physical Resources, Europe, Latin America and Inter-Regional Projects, OTC 10 July 1973

Mr. Guy Gresford, Officer-in-Charge Resources and Transport Division

A. Alagappan, Chief  
Water Resources Section, RTD

Mission to Bolivia - U. Golani



...

Please find attached herewith our Technical Adviser, Mr. U.

Golani's mission report to Bolivia.

REPORT ON A MISSION TO BOLIVIA

May - June 1973

by

Uri Golani

Technical Adviser

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I visited Bolivia on two occasions during this mission, the first time, between 15 and 17 May 1973 and the second time, between 31 May and 9 June 1973.

During my first three days in Bolivia I had meetings and long discussion with the project's UN personnel, the Resident Representative, Mr. Juan Rascoe, and his assistants and some of the project counterpart personnel, as well as with Mr. La Moreaux, a Consultant-Hydrogeologist. The main task during this first short visit was to evaluate the state of the project in relation to its scheduled date of termination - 30 June 1973, and to estimate the additional work needed for the completion of the technical report.

As it turned out, the UN experts failed to comply with the Project Manager's instructions to start summarizing their findings and begin writing their reports well in advance. The experts and the Project Manager underestimated the length of time needed for preparing the final technical report. Numerous tables, maps and other graphical illustration which could have been prepared a year or two years ago were left to be drawn up at the last minute when the draftsmen normally are overloaded. As a result the final technical report could not be completed by the end of June 1973, nor were the individual experts' reports available at that time. It was estimated that the individual experts reports would be ready on the following dates:

Water Economy	end June 1973
Hydrometeorology	mid July 1973
Geophysics	end July 1973
Water use	end July 1973
Hydrogeology	end August 1973



It was also learned that the integration of these individual reports into one final technical report would take about three months, and which would be done by the Project Manager and one expert hydrogeologist (to be recruited). We can thus expect to receive draft of technical report by end of November 1973.

Recommendation to extend the project through to November 1973 and extend contracts of experts accordingly has been cabled to Headquarters on May 17, 1973. Preparation of project revision has already begun.

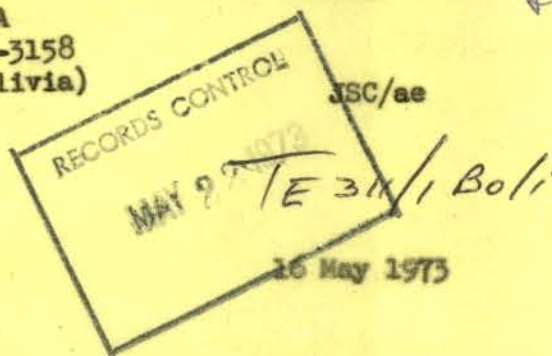
A very thorough assessment of the project has been made by Mr. Philip E. LaMoreaux, a Consultant-Hydrogeologist. A review of the project drilling operations has been carried out by another consultant, Mr. Mario Lafleur. Both consultants have produced reports on findings and conclusions to which I fully support. There is therefore no need here for an additional detailed assessment of the project. However it should be mentioned that, inspite of the many technical and personal problems of the project, the final results which are now becoming evident, are very positive, that is, the quantity and quality of available groundwater in the Northern Altiplano and the economy in its use. In the Northern Altiplano, in the area between La Paz and Lake Titicaca, some 50 million cubic meters of water or more can be extracted annually from wells. The cost of the water is just about the normal cost for groundwater elsewhere and the productions of certain crops increases considerably by applying irrigation.

During my second visit (ten days) to Bolivia I was engaged mainly in the preparation of a project document for a new groundwater project in Cochabamba. The duration of this new project is to be two years starting in January 1974. UNDP contribution is \$411,000 and Government contributions is \$322,800. The project will determine the quantities of available groundwater in four valleys in the Cochabamba province and will deal also with groundwater use and economy.

A draft project document has been submitted to Government during a meeting with Mr. Fernando Paz, Under Secretary, Ministry of Planning.

ORIGINAL DIRECT  
bcc: J. Van Heerden, Room 2410-A  
D.H. Hartzog - UNDP, Rm. A-3158  
Juan Pascoe, Res. Rep. (Bolivia)

cleared: H.C. Brand



Dear Mr. Moini:

..... Enclosed are two documents:

1. A critique of the original request forwarded under an April 1972 dating, a copy of which was given to me in Washington. This note was given to GEOBOL before serious negotiations were started in order to prepare the way for the radical changes believed necessary to develop a sound project.
2. A write-up of what I consider is a reasonably sound project. The format is that which we use for UNDP supported operations. The principal changes in direction are:
  - a) Reduction of the World Bank contribution to \$848,600. There is no guarantee, however, that since I departed from La Paz, greed has not come on stage. Even though the budget was agreed to by GEOBOL, by the time it is officially proposed to you it may have been fattened up.
  - b) Focussing operations upon those mechanisms which prove up new ore reserves. Instead of mapping and other scientific operations which are very interesting but rarely quantitative or qualitative in regard to mineralization, emphasis to be placed upon diamond drilling and exploration by underground headings. Of course, these latter would be preceded by geological analysis, including mapping when utility is evident, mine evaluation work and geophysical surveys where geology and topography suggest they could be useful. No consideration was given to the normally useful tool, geochemistry, because the environs of small mines would tend to be too highly contaminated.
  - c) Inclusion of a small internationally recruited group to fill gaps in national technical competence.

The document when submitted to the Bank will be far more impressive, at least, in terms of bulk. GEOBOL had prepared several very detailed papers dealing with such things as the organization of Phase 1, a pre-project

Mr. A.W. Moini  
Division Argentina-Bolivia  
International Bank for Reconstruction  
and Development  
1818 H Street NW  
Washington, D.C. 20433

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fact finding survey, and description of GEBOBOL's history, statutes, etc. On the basis that several busy people at the Bank would have to get a general rather than detailed knowledge of what the proposed project is all about, it was suggested that such papers among other things should be annexed rather than incorporated into the main body of the request.

Before leaving La Paz I had full agreement of all of the people concerned in GEBOBOL and Planificacion. Being old, cynical, scarred and bloodied, I will be incapable of surprise should the official version depart greatly from the enclosed draft text. But also, having a far from modest appreciation of my abilities in regard to how mineral exploration should be planned and organized, it is suggested that if changes are sweeping, the end product will not represent an improvement.

Yours sincerely,

J.S. Garman  
Technical Adviser  
Geology and Mining Section  
Resources and Transport Division

## PROYECTO

### Inventariación de Recursos Naturales Minería Chica

#### General Note

Appraisal of potential of the small mining industry of Bolivia, particularly in relation to a programme of relatively large scale mining credits, offers very interesting possibilities. Indeed one can go further and say that success is bound to be achieved if the project is well planned and executed. The existence of about 3000 mines working sporadically on a small scale in a highly mineralized country offers firm guarantees that among this large group there are bound to be some medium sized and even large mines. To outline these however, will require initially a level of technical expertise far above that which the mine owners can apply and subsequently mining credits to achieve expansion and in almost all cases a far greater degree of mechanization.

#### The Proposed Project

The project document formulated under the date of April 1972 would require radical change to be effective. It could not achieve the primary objective of the proposed inventory of small mines; namely, the measurement of mineral reserves, in a considerable number of more interesting mining properties to be selected for detailed sampling. Wholly inadequate sampling procedures are being proposed.

1. In regard to underground examinations, apparently all that is proposed is the taking of channel or chip sampling. Unfortunately, the approach applies only to mineral which is a la vista. And in the small, greatly under-capitalized mines survival usually involves extracting of the highest grade material usually over very narrow mining widths which wander haphazardly following the richer veins. So what should be sought is evidence of extension both latterly and in the vertical plane. Frequently, indeed usually, lower grade disseminated mineral is not extracted because the primitive methods and lack of scale do not permit economic operations. Yet it is



with such mineralized zones that the chances exist for proving up relatively large tonnages. Instead of mining, for example, 2% plus Sn over a width of a metre, the principal objective of the inventory should be to detect deposits which could be exploited over twenty metre widths with 0.8% Sn.

2. In modern mineral exploration and exploitation, the most important tool for establishing reserves is the diamond drill. No provision is made in the request for drilling whereas the exploration in this case to be successful should be largely a drilling exercise.
3. Similarly, frequently a great deal can be learned about the reserve picture by driving exploration headings underground such as cross-cuts, chimineas and socavones. Apparently, no consideration has been given to this mechanism.
4. Where known mineralization has been established at relatively shallow depth a very useful tool for determining the probable location of extensions is geophysics, particularly electrical methods. Their use has not been considered.

It is not unexpected that considerable emphasis is placed upon geological mapping, both underground and surface at large scale. At this point, not much will be made of the fact that many of the small mines are virtually unmappable; workings meander in all directions and all inclinations so that without an excessive amount of mine surveying it can be extremely difficult to locate one heading in relation to others. It is, however, proposed that mapping should achieve an important place only after a great deal of prior selection. It is an expensive process, a slow process and quite frequently not of much value in determining where to look for new orebodies.

The proposed project is far too grandiose. An initial budget of the equivalent of US\$3,113,344, involving the employment of about 150 people full time and an equal number for field work is not required to do

Satisfactory job. Instead of costly saturation tactics, a great deal of relatively inexpensive selection should be undertaken.

1. At the very beginning, a sub-contract with a competent firm or university should be undertaken to do a full bibliographic research. Frequently it is found that large quantities of hitherto unknown data can be uncovered, particularly if the researchers do not belong to a particular agency of government. The cost is negligible in the total picture - \$10,000 to \$15,000.
2. From the bibliography, a first selection should be made of, perhaps, a hundred of the most interesting mining properties. This should be followed up by a fairly rapid reconnaissance assisted by one or more experienced consultants with the objective of narrowing down the number of properties requiring further work to not more than 50.
3. At this stage, the government should protect its longer term interest by negotiating convenience of repayment with mine owners. If nothing is found by later exploratory effort, the mine owner is under no obligation. When orebodies are found, the government should share in one manner or another from the (profits made by) exploitation either by royalties, equity or repayment with bonuses.
4. Upon signing of the convenio, the preliminary geological survey team should make a first examination which will normally require two or three weeks.
5. Where this examination indicates that there is potential and that the answers can only be provided by exploration then the diamond drill should be brought in and at times the compressor and rock drill. The latter usually can do a competent sampling job very cheaply by test holing.



Mineral Survey Project in Chile

Beginning in 1967, the United Nations executed a new type of mineral exploration project. Its genesis was the belated realization that in countries with a highly developed mining tradition, any exploration effort which has to avoid properties held under minerals rights concessions is almost certainly doomed to fail. Accordingly, the system described above was pioneered in Chile. Initially about fifty-five target areas were known. A three week, helicopter supported trip to these by a senior consultant and the project manager resulted in the number being reduced by about half. Subsequently a few more were discarded by preliminary examination by a geological team. In the end 23 were worked on sufficiently to result in publishing definitive reports. Eighteen produced negative answers; with two reserves of about 750,000 tons were established; with another two between one and ten million tons; and at the most successful find, initially a raw prospect, almost 400 million tons of 0.9% copper were proved. The record could have interesting parallels here.

## PROJECT

### INVENTORY OF NATURAL RESOURCES SMALL MINING

#### Summary of the Project

The project will be preceded by a first phase to be undertaken entirely by GEBOBOL with its own resources. It will involve detailed research, compilation, analyses and eventual computerization of existing data on the small mining operations of Bolivia and the geology of the country. It is estimated that this work will be completed by the end of 1973. It will be an essential to Phase Two which will be undertaken in part with funds provided by the International Bank for Reconstruction and Development (hereafter referred to as the Banco Mundial).

The objective of Phase Two will be to outline orebodies within the small mines of to-day which will be of sufficient size and tenor to support mining operations on a medium to large scale. The Project will be essentially a winnowing process. In the beginning a comparatively large number of mines which indicate potential will be selected on the basis of data obtained by the pre-project Phase I. Mine examinations becoming progressively more detailed will be designed to reduce the number of properties to about twenty-five which offer prospects sufficiently favourable to justify intensive exploration by diamond drilling, both on surface and from underground, geophysical studies and underground advances such as cross-cuts, drifts and raises.

It is estimated that Phase I will cost ..... and Phase II the equivalent of US\$848,600 to be provided by the Banco Mundial and ..... to be provided by the Government. The estimated duration of Phase II is two years with full scale operations commencing in the first half of 1974.



## BACKGROUND AND JUSTIFIED INFORMATION

### 1. Justification of the Project

Bolivia is a country with a very ancient mining tradition as it lies within what is commonly believed to be the richest metalliferous geological province of the world, the Cordillera. As a direct result there are within the country over 3000 small mines which are worked at least sporadically.

At any given time except in periods of pronounced depression of base metal prices more than a thousand of these will be in operation. Unfortunately almost all produce at such a small scale that their combined contribution to the national economy is insignificant in relation to the potential established by their numbers alone. Beyond question many deposits which could support medium to large scale extraction are being exploited on such a small scale that operations are only economic because of high-grading, thus, there is no doubt that more than a few deposits which could make an important contribution to the industrial development of Bolivia have, are or will be destroyed by this practice.

The basic reason for this waste of resources is almost universal lack of capital and technical expertise in the small mines. Almost all are "pick and shovel" operations employing no technical talent whatsoever.

It is fully realized that without external assistance no improvement can be expected. The mine owners do not have the resources to effect significant change. Thus the project is designed to obtain a strong body of data which will provide a sound base for efficient application later of mining credits for mechanization and technical improvement of those mines in which significant orebodies have been outlined to the proved or at least, probable degrees.

### 2. Institutional Framework

The Counterpart Agency will be the Banco Central which will delegate compilation of data, field work and reporting to the Servicio Geológico de

Bolivia (hereafter referred to as GEOBOL) "Geobol fué creado el 11 de junio de 1965 mediante Decreto Supremo No. 07212 como una entidad descentralizada con autonomía administrativa, cuyo objetivo es 'la investigación irrestricta dentro del campo de la geología y disciplinas afines que contribuyen al conocimiento, desarrollo y conservación de los recursos minerales, incluso metálicos y no metálicos, aguas, hidrocarburos.....' GEOBOL sucedió al Departamento Nacional de Geología que se estableció en 1960 como un Departamento del Ministerio de Minas y, hasta 1965, recibió, por algunos años, apoyo considerable de USAID".

Annex I gives detailed data on the constitution, objectives, organization, finances, etc. of GEOBOL.

### 3. Other related activities

Mineral exploration is essentially an "open ended" activity the scope of which can almost always be increased efficiently. Accordingly the Government does not rule out possibilities of receiving bi-lateral aid from such sources as Canadian Industrial Development Aid, the Alianza para el Progreso, the Bureau de Recherche Geologue et Miniere. While such assistance will, in principle, be welcomed if it can be effectively integrated into existing operations, the Project is so designed as to be viable should no further aid be received.



## OBJECTIVES OF THE PROJECT

### 1. Long-range Objectives

The long-range objective of this Project is to produce the data required to greatly improve the efficiency and scope of operations of what is to-day classified as the small mining industry and in the process measurably increase its contribution to the national economy.

### 2. Immediate Objectives

The immediate objectives of the Project are to:

- a) Gather all existing operational, technical and geological information on the small mines of Bolivia.
- b) Synthesize and analyze these to determine gaps in knowledge and to determine zones and mines which offer the highest potential for improvement and expansion.
- c) Within said zones and mines to undertake preliminary exploration to determine a limited number of properties, about 25, which indicate the highest potential for discoveries of importance.
- d) Within this limited group undertake detailed exploration by mine surveying, mapping, structural and mineralogical analyses, geophysical measurements, diamond drilling, both underground and surface and by underground advances such as cross-cuts, drifts and raises; to prove mineral reserves which can be exploited under present day conditions on a mechanized scale.
- e) Educate mine owners and operators in regard to modern exploration and mining techniques by demonstration and by holding seminars when it can be done at no expense to the basic objectives of the Project.
- f) Coordinar las investigaciones geológicas con otras entidades públicas y privadas del país, a fin de evitar dla duplicidad de esfuerzos.

- g) Contribuir a la investigación geológica del país para el mejor conocimiento, ubicación, desarrollo y utilización de los recursos minerales, sean minerales metálicos o no metálicos.  
(Se requiere un Cronograma para el Plan de Trabajo)

PLAN DE TRABAJO - Fase I

<u>1. Descripción de actividades del Proyecto</u>	<u>Fecha de inicio y duración propuesta</u>
<u>Actividades preliminares al proyecto</u>	
a) Planning and Organization of data compilation programme (see Annex 2)	February - April 1973
b) Recopilación de datos (see Annex 3)	Mayo - Julio 1973
c) Tabulación de datos (see Annex 3)	Agosto - Septiembre 1973
d) Análisis de datos (see Annex 3)	Agosto - Octubre 1973
e) Análisis complementario (see Annex 3)	Septiembre - Noviembre 1973
f) Resúmenes (see Annex 3)	Noviembre 1973
g) Selección de áreas, zonas y regiones (see Annex 3)	Noviembre - Diciembre 1973
h) Selección de programas específicos (see Annex 3)	Noviembre - Diciembre 1973
<u>Actividades del Proyecto - Fase 2</u>	
a) Planning and Organization of field work	First Quarter 1974
b) Commencement of ordering of equipment to be obtained from abroad and arrival of internationally recruited economic geologist	First Quarter 1974
c) Commencement of preliminary geological examination of about one hundred small mines and extensions of the same which were selected under Phase I on the basis of relative indicated potential	First and Second Quarter 1974



- d) Rejection of the 50% considered least interesting Second Quarter 1974
- e) More detailed examination of the remainder leading to a further 50% reduction, using consultants when considered advisable. Second and Third Quarter 1974  
Final selection of the 25 targets for intensive exploration effort.
- f) Arrival internationally recruited geophysicist Third Quarter 1974
- g) Negotiation of convenios with mine owners Third Quarter 1974 and Fourth Quarter 1974  
by the Government which provide for repayment in the form of regalías for production from reserves outlined by Project activities. Negotiation of assistance agreements with mine owners providing where possible on the part of said owners for such things as the provision of water used in drilling, opening up of headings which have caved to a minor degree, provision of lodgings, etc.
- h) Arrival internationally recruited drilling supervisor Fourth Quarter 1974
- i) Detailed exploration of selected mines Fourth Quarter 1974 to First Quarter 1976  
and/or extensions of the same by combinations of the following depending upon the physical and geological characteristics of the mine concerned - geological mapping, both surface and underground, topographic mapping, mine surveying, diamond drilling, geophysical surveys with emphasis upon electro-magnetics and induced polarization for locating sulphides and magnetics for tectonic analyses, underground advances such as cross-cuts, drifts and raises, surface exploratory openings as such as trenches and test pits.

- |  |  |
|--|--|
| j) Technical reporting   | Upon completion of work<br>at any given mine |
| k) Final reporting including preliminary<br>feasibility studies where orebodies<br>are indicated | Second Quarter 1975                          |
| l) Conclusion of Project   | Second Quarter 1976                          |

Description on in-puts to be paid for in  
foreign exchange

1. Asignación del personal internacional

- |  |   |
|--|---|
| a) Economic Geologist -<br>Geologist with extensive experience<br>in Cordilleran environments, in the<br>co-ordinated and effective use of modern<br>exploration tools, mine examination and<br>evaluation. Sound administrative back-<br>ground also required. <del>Fluent</del> Spanish essential. | First Quarter 1974 to<br>First Quarter 1976 |
|--|---|

The Economic Geologist will represent  
the Banco Mundial in technical matters  
and serve the Director of the Project  
as Co-director.

- |  |   |
|--|---|
| b) Geophysicist -<br>A geologist with extensive experience<br>undertaking and interpreting geophysical<br>surveys in Cordilleran environments. A<br>sound practical background in electro-<br>magnetics and induced polarization required<br>Spanish ressential. | Third Quarter 1974 to<br>First Quarter 1976 |
|--|---|

The geophysicist will be responsible for  
training operating crews, for the super-  
vision of all geophysical work and the  
interpretation and reporting on the same.



- c) Diamond drilling supervisor -  
A highly experienced diamond driller  
with ample "wire line" experience.  
Knowledge of the use of drilling mud  
in leached zones essential.  
Training abilities required.  
Spanish essential.  
The drilling supervisor will be  
responsible for supervision of a  
programme which will have as many as  
six drills, both surface and underground,  
in operation simultaneously. He will  
also be responsible for ensuring efficient  
logistics and sound maintenance of  
machines.

Fourth Quarter 1974 to  
Fourth Quarter 1975

- d) Consultants including a specialist in  
porphyry coppers.

As required

2. Equipment

Delivery Date

COST US\$

Diamond drilling

- a) Surface drills (2) with capacity  
of 300 meters complete with  
auxiliaries including "wire line"  
and pumps and spare parts for  
fifteen months.
- b) Air powered drills (4) for under-  
ground use complete with auxiliaries  
and spares for fifteen months.
- c) Diamond drill bits - A to N

Commencing in  
May or  
June 1974

72,000

Commencing in  
May or June  
1974

100,000

As required  
first delivery  
before end of  
June 1974

65,000

Compressors

- Diesel powered portable compressors  
(6) about 360 cfm complete with spares  
for fifteen months.

Commencing in  
May or June  
1974

108,000

	<u>Delivery date</u>	<u>COST US\$</u>
<u>Mining equipment</u>		
a) "Jackleg" rock drills (4) complete with drill steel sharpeners and spares for fifteen months.	May or June 1974	7,000
b) Drill steel (30 sets) 7/8 in. hexagonal x 4 1/4 in shank: 800 mm length x 40 mm. bit (30) 1600 mm length x 39 mm. bit (30) 2400 mm length x 38 mm. bit (30)	As required with first delivery of 10 sets before end of June 1974	3,000
c) Rubber hose - 2 in. (2000 meters)	May or June 1974	23,000
d) Rubber hose - 1 in. (2000 meters)	May or June 1974	15,000
e) Gasolene powered "jackhammer" (2) complete with spares for fifteen months.	May or June 1974	2,600
<u>Vehicles</u>		
Jeep type (10), Power wagon type (2), Water tankers (6), spares	July or August 1974	95,000
<u>Geophysical</u>		
a) Induced polarization instrument complete with spares for fifteen months.	September 1974	15,000
b) Electro-magnetic instrument, Turam type (2) complete with spares for fifteen months.	September 1974	11,000
c) Magnetometers (2) complete with spares for fifteen months.	September 1974	6,000
<u>Field equipment</u> (See Annex 4)	Commencing in April 1974	15,000
<u>Office equipment</u> (See Annex 5)	Commencing in April 1974	12,000
<u>Drafting equipment</u> (See Annex 6)	Commencing in April 1974	8,000



	<u>Delivery date</u>	<u>COST US\$</u>
<u>Laboratory</u>		
a) Atomic absorption photospectrometer complete with lamps.	April 1974	15,000
b) Reagents	Commencing in April 1974	5,000
c) Laboratory consumables	Commencing in April 1974	4,000
d) Laboratory durables	Commencing in April 1974	10,000
<u>Sub-Contract</u>		
a) Check analysis abroad	As required	10,000
b) Metallurgical testing	As required	20,000
c) Computer treatment of data	As required	7,000

Allocation of Foreign Exchange Costs

US Dollars

	Man Months	Total	1974	1975	1976
<b>A. <u>Personal Services</u> <sup>1/</sup></b>					
a) Economic geologist	24	60,000	25,000	30,000	5,000
b) Geophysicist	18	45,000	12,500	30,000	2,500
c) Drilling supervisor	12	30,000	-	27,500	2,500
d) Consultores	6	15,000	-	10,000	5,000
Sub-totals	60	150,000	37,500	97,500	15,000
<b>B. <u>Equipment</u></b>					
a) Diamond drills (6)		172,000	152,000	15,000	5,000
b) Diamond drill bits		65,000	20,000	40,000	5,000
c) Compressors (6)		108,000	108,000	-	-
d) "Jackleg" rock drills (4)		7,000	7,000	-	-
e) Drill steel (30 sets)		3,000	1,000	1,800	200
f) Rubber hose (4000 meters)		38,000	38,000	-	-
g) Jackhammers (2)		2,600	2,600	-	-
h) Vehicles:					
Jeep type (10)		35,000	35,000	-	-
Power wagon type (2)		9,000	9,000	-	-
Water tankers (6)		36,000	36,000	-	-
Spare parts		15,000	2,000	10,000	3,000
i) Induced polarization instrument		15,000	15,000	-	-
j) Electro-magnetic instruments (2)		11,000	11,000	-	-
k) Magnetometers (2)		6,000	6,000	-	-
l) Field equipment (See Anexo 4)		15,000	9,000	5,000	1,000
m) Office equipment (See Anexo 5)		12,000	8,000	3,000	1,000
n) Drafting equipment (See Anexo 6)		8,000	6,000	1,000	1,000
o) Laboratory equipment:					
Atomic absorption photospectrometer		15,000	13,000	1,500	500
Reagents		5,000	3,000	1,500	500
Laboratory consumables		4,000	2,500	1,200	300
Laboratory durables		10,000	6,000	3,000	1,000
Sub-totals		591,600	490,100	83,000	18,500



	Total	1974	1975	1976
<b>C. <u>Sub-contracts</u></b>				
a) Check analyses abroad	10,000	-	8,000	2,000
b) Metallurgical testing	20,000	-	15,000	5,000
c) Computer treatment of data	7,000	-	4,000	3,000
Sub-totals	37,000	-	27,000	10,000
<b>D. <u>Others</u></b>				
a) Miscellaneous	20,000	-	15,000	5,000
b) Contingency	25,000	-	18,000	7,000
c) Escalation	25,000	10,000	12,000	3,000
Sub-totals	70,000	10,000	45,000	15,000
GRAND TOTALS	848,600	537,600	252,500	58,500

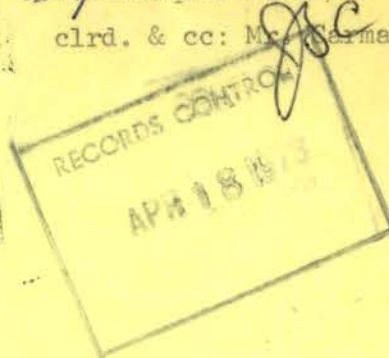
<sup>1/</sup> Manpower costs based on proforma figure of United Nations Development Programme.

ORIGINAL DIRECT



13 April 1973

9-13/4/73  
J. G. Velázquez-Muñoz/sf  
clrd. & cc: Mr. Carman



TE 344/1 BOLI  
EC 132/226/BOLI (18)

3

Dear Mr. Pascoe,

Subject: Mission of Mr. John Carman, Technical  
Adviser in Geology and Mining

Thank you for your cable No. 92 of 10 April 1973 requesting our agreement to extend Mr. Carman's visit to Bolivia connected with the Mutún Mineral Project by an additional week to assist the Government in formulating a draft request for the evaluation of the small mining sector.

We have discussed this matter with Mr. Carman and would like to inform you that due to his work schedule for next month, he would find it extremely difficult to return to Headquarters after 14 May 1973. Nevertheless, he plans to shorten his mission to Argentina by a few days in order to extend his sojourn at La Paz accordingly and render the requested assistance.

Mr. Carman has agreed to cable directly to Mr. Norris his arrival date to Puerto Suárez and contact your office to convey his arrival date to La Paz.

Yours sincerely,

Jan H. van Heerden, Chief  
Physical Resources Projects Section  
Europe, Latin America and  
Interregional Projects Branch, OTC

Mr. Juan Pascoe  
UNDP Resident Representative  
Casilla 686  
La Paz, Bolivia



RECORDS CONTROL

18 APR 1973

04/10/73 1758 EST

420544 UNH UI

UNDEPRO 3560030

cc = Mr. Carman

VM

RECORDS CONTROL

APR 18 7/4/73

INITIALS  
ACTION

TE 311/1 BOLI  
EC 132/226/BOLI(18)  
3

HELEX LAPAZBOLIVIA 10/4/73

9/12/4/73  
REGISTRY  
ROOM 2074

LN/10 (UNOTC) LAPAZ 31 10 2200GMT

UNATIONS

NEWYORK

92 VANHEERDEN PLEASE AUTHORIZE CARMAN EXTEND MISSION BOLIVIA BY  
ONE WEEK TO REVIEW WITH GOVERNMENT DRAFT REQUEST FOR ASSISTANCE  
IN EVALUATION OF SMALL MINING SECTOR. PLEASE CONFIRM

PASCOE

RECEIVED

11 APR 1973

COL 92

PRPS/ELAIP/OTC

UNITED NATIONS  
CABLE OPERATIONS  
1973 APR 10 PM 6:55