

November 14, 1974

Mr. V. Kandaswamy, Chief
Centre for Housing, Building and Planning
United Nations, New York 10017

Dear Mr. Kandaswamy:

Thank you very much for your letter of 11 November regarding the prospective UNDP mission to Bhutan.

While I am greatly interested, my current commitments prevent me from leaving the U.S. in December. I am President of Sunworks, Inc., a company that has begun to market solar collectors, in addition to my teaching and research responsibilities at Yale.

However, I would like to strongly recommend that you consider a colleague of mine, Donald Watson. Mr. Watson and I have collaborated on a number of solar house designs and on many technical publications on solar heating and energy conservation architecture. He is more familiar than I with methods of local climate analysis and teaches the climate section of the courses that we jointly offer at Yale.

If he were able to go as a team member, I would still hope to be able to contribute by consulting with the team before and after the mission. Mr. Watson is also fluent in French, which may be advantageous for a close working relation with Mr. Bertaud. In addition to his expertise in natural climate control and solar architecture, Mr. Watson has extensive experience in low cost housing, beginning with more than three years in North Africa with the U.S. Peace Corps and subsequently under contract with the Government of Tunisia. Most recently, his research has covered the subject of self-help housing and energy self-sufficiency in dwelling design.

Should you wish to contact Mr. Watson, he can be reached at the Yale School of Architecture or at his professional office, 17 Water Street, Guilford, Conn. With the hope that this is helpful to you,

Sincerely,

Everett M. Barber, Jr.

Everett M. Barber, Jr.
Associate Professor of Environmental Technology

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ACTION TO:
1. Mr. V. Kandaswamy
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cc: B. Akimov
R.K. Dasu
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Same letter to: Dr. George Lof
Professor of Civil Engineering
Colorado State University
Fort Collins
Colorado 11 November 1974

Dear Mr. Barber,

Sub: Assistance to Buntan in the field of low-cost housing

1. We understand informally from the New Delhi Resident Representative of the United Nations Development Programme (UNDP) that the Government of Buntan may request a two-man preparatory assistance mission for three to four weeks to prepare a project document requesting UNDP assistance for a pilot project of low cost housing, using local materials to the best advantage and keeping in view the beauty of native architecture and ecological/environmental considerations, including utilization of wind and solar energy. The mission, if requested by the Government, is likely to be fielded in December this year.

2. One member of the mission will most probably be Mr. A. Bertand, a French architect-planner, who distinguished himself in Yemen Arab Republic as the UN expert who built a low-cost house with local materials and lived in it with his family. Your name has been suggested to us as a possible other member of the mission, in view of your being an engineer who has distinguished himself in the field of utilization of solar energy in homes. We shall be grateful, if you will urgently let us know your interest and availability in regard to this mission. If the mission does materialize, we will ask the U.N. Technical Assistance Recruitment Service (TARS) to contact you formally. In the meanwhile, please treat this letter as an informal inquiry, without any commitment.

..... 3. In any case, please return us duly completed the enclosed two sets of Personal History Statement forms in regard to yourself.

With regards,

Yours sincerely,

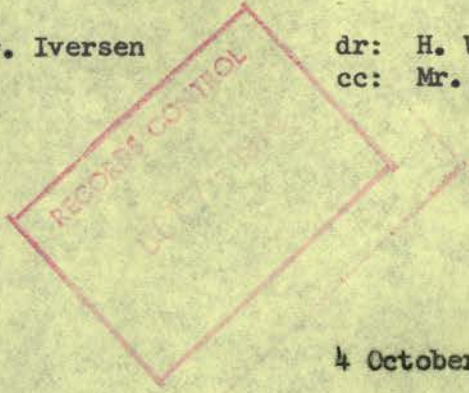
V. Kandaswamy
Chief

Technical Co-operation Section
Asia, Europe and Middle East
Centre for Housing, Building and Planning

Mr. Everett M. Barber, Jr. (Engr.)
Yale University
New Haven, Connecticut

cl: Mr. Iversen

dr: H. Welck/mch
cc: Mr. Brand



TE 311/1 BHUT

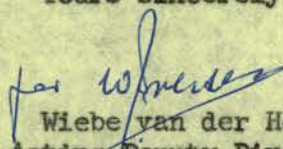
4 October 1974

Dear Mr. Polgar:

SUBJECT: BHU/74/001 - Drill Training and Exploration
Project - Status of Draft Project Document

In response to your letter of 24 September 1974 concerning the status of the above-mentioned draft Project Document, I wish to inform you that we have forwarded to your office six copies of Mr. Robertson's Mission Report under covering letter of 5 September 1974. The report contains the draft Project Document in which we are awaiting the comments of the Government of Bhutan.

Yours sincerely,


Wiebe van der Heide
Acting Deputy Director
Asia and Middle East Branch
Office of Technical Co-operation

Mr. Roger Polgar
UNDP Resident Representative
21 Kasturba Gandhi Marg
New Delhi-1, India

UNITED NATIONS
DEVELOPMENT PROGRAMME



21 KASTURBA GANDHI MARG.
NEW DELHI-110001

TELEX : UNDP - ND - 2611

CABLES : UNDEVPRO - NEW DELHI

TELEPHONES : 40043, 43041, 43628, 44366

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1	MR. R. K. BASU
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24 September 1974	
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Reference

BHU/74/001

TE34/1 BHUT

Dear Mr. Basu,

Re: Drilling project in Bhutan - Mineral
Exploration

May I recall to your attention the visit to Bhutan in April last by Mr. D.P. Robertson, UNOTC Inter-regional Adviser in Geology and Mining with a view to assisting the Government of Bhutan in the formulation of a project request for UNDP assistance in the field of Drilling Techniques for mineral exploration.

Mr. Robertson had furnished us on an informal basis a copy of the note prepared by him on his visit to Bhutan, in which he indicated that a project proposal requiring UNDP inputs to the tune of US \$389,000 is likely to be formulated after his return to New York.

I shall appreciate it if you will advise us about the present status in the matter, at your earliest convenience.

Yours sincerely,

Mir Zekrya

M.A. Zekrya
for Resident Representative

cc: Mr. Brand
while 3/10/74

Mr. R.K. Basu
Chief, Physical Resources Projects Section
United Nations Office of Technical Co-operation
New York

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12 Aug
16 July 1974

TE 311/1 BHUT

Mr. Wibe van der Heide, Acting Deputy Director
Asia and Middle East Branch, OTC

Mr. Norbert Falzon, Assistant Director
in charge of Transport, Tourism and Cartography, RTD, ESA

H.K. Sang, Officer-in-Charge
Transport Section, RTD, ESA

BHUTAN: UNDP Country Programme (1972-1976 approved by
UNDP Council) - Transport Sector

The above programme was approved by the UNDP Council at its
18th session. In the field of transport, the Government of Bhutan
request UNDP assistance in the following projects:

Mechanization of Road Works

Total UNDP Contribution \$782,000

This project is being executed by the United Nations,
Transport Section, RTD.

Technical Assistance to the Automobile Repair Workshop Department

UNDP Contribution \$307,000

Falls within the competence of the ILO.

..... Attached is a copy of the approved projects, for your easy
reference.

ORIGINAL DIRECT



31 July 1974

TO 311/1 BAA NT

Dear Mr. Ahmed,

..... I am attaching a copy of Mr. Harris' comments on WFP request BHUTAN 2117 and should like to inform you that our Transport Section endorses these comments. I am also sending a copy of the report on the UNDP mission which visited Bhutan in March 1973 and in which Mr. Harris participated, together with the Annex containing a draft Project Document for a UNDP project on mechanization of road works.

Yours truly,

W. van der Heide
Senior UN/WFP Liaison Officer
Office of Technical Co-operation

Mr. N. Ahmed, Chief
Asia and the Far East Branch
Project Management Division
World Food Programme
Via delle Terme di Caracalla
Rome, Italy

Mr. W. van der Heide, Acting Deputy Director
Asia and Middle East Branch, OTC

26 July 1974

Mr. Norbert Falzon, Assistant Director
in charge of Transport, Tourism and Cartography, RTD, ESA

H.K. Sang, Officer-in-Charge
Transport Section, RTD, ESA

BHUTAN: Project WFP BHU-2117

18 311/1 BHUT

.....

Please find herewith some substantive comments prepared by
Mr. Harris on project BHU-2117. You may wish to advise WFP
that we endorse Mr. Harris' findings.

.....

Please also find herewith a copy of a report prepared at the
conclusion of Mr. Harris' mission in Bhutan. This copy has been
requested by WFP for information purposes.

ORIGINAL DIRECT

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MAY 1 1974

10 May 1974

Mr. W. van der Heide, Acting Deputy Director
Asia and Middle East Branch, OTC

Mr. Vladimir Baum, Director
Resources and Transport Division

Zdenek Lastovka, Chief
Transport Section, RTD

TE34/1 BHUT

BHUTAN: Country Programme 1972-1976: Transport Sector

We have reviewed the final version of the Country Programme for Bhutan for the period 1972-1976, transmitted under your memorandum of 29 April 1974.

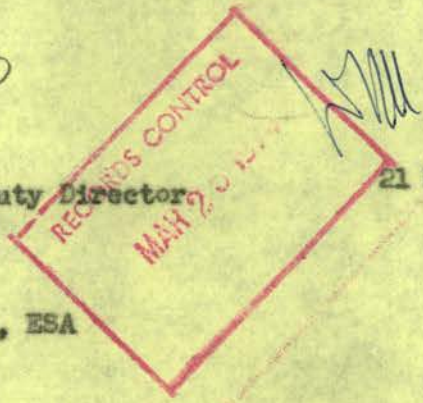
Of the two projects in the field of transport, mentioned on page 7 of the programme, one, Mechanization of Road Works, is already being executed by the United Nations (Transport Section/RTD), while the other, Technical Assistance to the Automobile Repair Shop, falls within the competence of ILO.

cc.: Mr. N. Falzon

o.d. 21/3

INTERNAL DIRECT

077



LZM/ae

21 March 1974

TE 311/1 BHUTAN

Mr. W. van der Heide, Acting Deputy Director
Asia and Middle East Branch, OTC

Vladimir Baum, Director
Resources and Transport Division, ESA

Howard Brand, Chief
Geology and Mining Section, RTD

BHUTAN (BHU/74/001): Assistance to Geological Survey

Further to my memorandum of 20 March 1974, please note that in our opinion the period of three weeks for a visit by Technical Adviser, as suggested by the Resident Representative, is unnecessarily long. The tasks defined in my memorandum can easily be performed in 6 or 7 days.

cc: Mr. J. van Heerden, ELAIPB/OTC

ORIGINAL DIRECTOR
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MAR 21 1974
LZM/ae

Mr. W. van der Heide, Acting Deputy Director
Asia and Middle East Branch, OTC

20 March 1974

Vladimir Baum, Director
Resources and Transport Division, ESA

TE 311/1 BHUTAN

Howard Brand, Chief
Geology and Mining Section, RTD

BHUTAN (JBU/74/001): Assistance to Geological Survey

1. The Resident Representative's suggestion that a Technical Adviser should visit Bhutan is endorsed. His terms of reference would be:

- a) to advise the type of drilling equipment most suitable to local conditions and needs;
- b) to advise on the most effective training programme;
- c) to ascertain other, related needs in the field of mineral exploration; and
- d) to assist the Government in re-formulating the request.

2. The Interregional Adviser, Mr. D.P. Robertson, is at present in Nepal and his name has been submitted to the Government of Bangladesh in connexion with an advisory mission to that country. This offers an opportunity to field the proposed mission to Bhutan in good time and at little additional cost.

3; As Mr. Robertson will only be in Nepal for the next week, we suggest that Mr. McDiarmid be advised by cable of Mr. Robertson's availability in the immediate area so that Mr. Robertson can be diverted to Bhutan.

cc: Mr. J. van Heerden, Chief, ELAIP/PRPS, OTC

ORIGINAL DIRECT

Cleared: Mr. van der Heide *vltt*

T. Shrestha/mm



TE 311/1 BHUTAN

19 March 1974

VIA POUCH

Dear Mr. McDiarmid,

Thank you for your letter of 19 February 1974 forwarding the requests of the Government of Bhutan for assistance to its Geological Survey.

The Government's requests are presently being reviewed and we will soon advise you of our reaction to them. I am sure we will be able to arrange the visit of an Inter-regional Adviser or Technical Adviser to visit Bhutan, if necessary, in order to assess the country's needs in the field of Mineral Exploration and to formulate a project document as appropriate.

Yours sincerely,

Robert J. Crooks
Director
Office of Technical Co-operation

Mr. J. McDiarmid
UNDP Resident Representative
21 Kasturba Gandhi Marg
New Delhi-1, India

Mr. V. Baum, Acting Director
Resources and Transport Division

W. van der Heide, Acting Deputy Director
Asia and Middle East Branch, OTC

BHUTAN - Assistance to Geological Survey

15 March 1974

TE 311/1 BHUTAN

..... Attached please find a copy of the letter from the Resident Representative in India, Mr. McDiarmid, forwarding two requests from the Government of Bhutan for assistance to its Geological Survey.

I would be most grateful if you would review the requests and forward to us your comments and observations in this regard at your earliest convenience. Please note that the Resident Representative would like an adviser to visit Bhutan for a period of three to four weeks to assist the country's needs in the field of mineral exploration.

UNITED NATIONS
DEVELOPMENT PROGRAMME



TELEX : UNDP - ND - 2611
CABLES : UNDEVPRO - NEW DELHI
TELEPHONES : 40043, 43041, 43628, 44368

21, KASTURBA GANDHI MARG,
NEW DELHI-110001

संयुक्त राष्ट्र
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Mr. Kante Kende
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19 February 1974

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TE 311/BHUT

BHU/74/001

Dear Mr. Crooks,

Re: Assistance to the Geological Survey of Bhutan

....

I attach copies of two requests received from the Government of Bhutan for assistance to its Geological Survey. As you will note, these requests are not in the proper form but they convey the substance of the requests sufficiently for at least initial comment.

During the visit of the UNDP Team to Bhutan in March/April 1973, the possibility of some assistance to the Geological Survey of Bhutan was discussed with the Chief of the Survey who is an Indian national on deputation. We had suggested at that time that the best course might be for a staff member of the United Nations or a Regional Adviser to visit Bhutan and to draw up a request taking into consideration the various felt needs of the Survey. We had heard nothing more on this subject until we received the present requests earlier this month.

Although no costs are given, it seems likely that the items and fellowships covered by the requests will not exceed \$100,000 and therefore will be subject to my approval. Personally, I believe that the rock drilling staff may be competent to handle the equipment items requested but I would like to have this checked by someone knowledgeable.

Moreover, the requests need to be reworked into one consolidated request, probably under the title of "Mineral Exploration" for which, I assume, the United Nations would be the Executing Agency. It is also possible that there are other items or areas of assistance which might be included in a reworked request. I would be grateful therefore if you could designate someone to visit Bhutan for three to four weeks - if possible a Regional or Inter-regional Adviser who would not be charged against the IPF - to examine the present requests against the general background of Bhutan's mineral investigation and development programmes and to satisfy himself that the specific assistance sought is feasible and desirable. If you agree to this, we would have to get the Bhutan Government's formal agreement to such a visit.

Mr. R.J. Crooks
Director, UNOTC
United Nations
New York

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- 2 -

Unfortunately, an earlier request from the same Ministry regarding the feasibility of establishing a Cement Plant could not be accepted by UNDP since it did not meet the necessary criteria. I am therefore particularly anxious that we should not again have to disappoint the Ministry with the present requests. Before we send anyone to Bhutan or even propose such a visit to the Government, I want to be completely sure that the assistance as now sought, regardless of any additions which may be suggested later, is agreed to in principle and subject only to verification that the items and training sought are the most suitable to meet the objectives.

I would be most grateful for a quick reply on this matter.

*With kind regards,
and all good wishes in
your new post. We have
a lot of mutual business
going on!
J.*

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'John'.

John McDiarmid
Resident Representative

cc: Mr. R. Coomaraswamy, UNDP/NY - with encl.

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

SPECIAL INDUSTRIAL SERVICES

PROJECT DATA SHEET

1. Reference :

Country : BHUTAN

Project Title

: Aid for training Bhutanese nationals
in drilling.

Date Formal Request

Recorded

Government Department
submitting request

: Ministry of Trade, Industry & Forests

Specific Government
Agency concerned with
the Project

: Ministry of Trade, Industry & Forests

2. Description of the Project : Suitable Bhutanese nationals with qualification and experience in drilling to be sent for advanced training course in drilling technique, particularly with reference to handling Packsack Diamond Drills and X-ray Drills to be procured through UNDP Aid.
3. Background information : A number of Bhutanese nationals have gained qualification and experience in drilling within Bhutan. They have been working with the Geological Survey of India (Bhutan Circle) for a number of years. A few of these trained personnel who have more than 7 years experience as Drillmen may be selected to undergo advanced training in drilling. UNDP may decide on suitable training course taking into account their existing experience and qualification.

4. Relationship with other technical assistance project or

REQUESTS :

This training programme will be tied up with the project for supply of advanced drilling equipments to the Government of Bhutan by UNDP.

Field Activity

Duration

Cost

Does not apply

5. Request approved :

for UNIDO

for UNDP

Date _____

Date _____

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

1. Reference :

Country : BHUTAN

Project Title : Assistance for supply of drilling equipments
for Geological Survey of Bhutan.

Date Formal
Request Recorded

Government Department Ministry of Trade, Industry & Forests
submitting request

Specific Government Ministry of Trade, Industry & Forests
Agency concerned with
the Project

2. Description of the Project : The geological survey of Bhutan is handicapped for want of suitable drills. The request is for the following drills as well as for necessary spare parts for these drills. It is understood that the smallest practical drill equipment for light weight drilling is the Packsack Diamond Drill manufactured by Truco Canada Ltd, P.O. Box 136, North Bay, Ontario. Maximum practical depth is 100-150 feet. All rods are pulled manually or with a winch. The drill is powered by a 10 HP gasoline motor and the small pump similarly powered. Core is 7/8" diameter. Weight including 250' rods and accessories is less than 500 lbs and cost, with accessories around \$ 2,000. This is a two-man drill best adapted for very shallow drilling i.e. 75 feet or less.

The next larger size is the X-ray Drill manufactured by Boyles Drilling Company of Canada, Vancouver, B.C. This machine is useful for depths upto 200 feet. Drill and pump are powered by gasoline motors. Core diameter is 3/4". Weight including 500' rods, half of them steel and half aluminium, would be around 1,000 lbs. Pulling of rods is assisted by a cat-head assembly powered off the drill motor. Cost with accessories : \$ 3,000 - 5,000.

1. Packsack Diamond Drill :

Manufactured by TRUCO
CANADA LTD., complete
with bits, rods, pump
and all other access-
ories.

2 sets

2. X-ray Drill :

Manufactured by Boyles Drilling
Co. of Canada Ltd, complete with
bits, rods, pump and all other
accessories.

2 sets

3. Background information : The Ministry of Trade and Industry is responsible for the over-all development of the mineral resources in the country. So far the general surveys on the mineral deposits have been carried out under the aegis of the Geological Survey of India (Bhutan Circle). The Geological Survey of India is also finding it difficult to carry out detailed investigations of the mineral deposits whenever requests are made by the Government of Bhutan for want of suitable drills. Once the existence of deposits have been tentatively established by the Geological Survey of India, the Government of Bhutan requires detailed investigation by means of drilling to find out the actual quality and quantity of the deposits in order to formulate schemes for industrial exploitation of these minerals. Some of the minerals already established have been Dolomite, Limestone, Gypsum, Graphite, Slate, Lead and Zinc. The equipments will be with the Government of Bhutan who will employ them through suitable agencies for conducting necessary detailed surveys of the mineral deposits. Quite a number of Bhutanese nationals have been trained in drilling and possess practical experience of drilling in Bhutan. Therefore there is no dearth of qualified men who can operate these drills. We are also making a separate proposal to give advanced training to few of them. Once the drills and necessary spare parts are provided, facilities for their maintenance will be available within Bhutan.

4. Relationship with other technical assistance project or REQUESTS

A separate request is being made for training Bhutanese personnel in drilling. The present project will gain the benefits of the training to be imparted to the Bhutanese personnel.

Field of Activity
Does not apply

Duration

Cost

5. Request Approved

_____ for UNIDO

_____ for UNDP

Date _____

Date _____