

Distribution : limited

Original; English

UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

ARID ZONE PROGRAMME

DEVELOPMENT OF THE RAJASTHAN DESERT, INDIA

The Director-General has received the information in this paper pertaining to the development of the Rajasthan desert area from the Ministry of Education, India. The paper is divided into two parts; Part I gives information on the Rajasthan Underground Water Board, on the University of Rajputana at Jaipur and on the Jaswant College at Jodhpur; Part II gives information on two proposed projects for the development of underground water resources in the Rajasthan desert area.

PART I

The first session of the Advisory Committee on Arid Zone Research held at Algiers between 5th to 7th April, 1951, heard Shri Khosla's report reviewing the needs and possibilities for the development of the Rajasthan desert area. In their recommendation No. 7, the Committee asked that information be made available concerning the details of the present and proposed research programme in the draft questionnaire (UNESCO/NS/AZ/19/13951).

Replies to the questionnaire will be as under :-

1. NAMES OF INSTITUTIONS

- (i) The Rajasthan Underground Water Board
- (ii) The University of Rajputana at Jaipur
- (iii) The affiliated College at Jodhpur known as the Jaswant College.

2. LOCATION OF THE INSTITUTIONS

- (a) Address: (i) and (ii) are at Jaipur and (iii) is at Jodhpur.

	<u>(i) and (ii) Jaipur</u>	<u>(iii) Jodhpur</u>
(b) Latitude	26°55' N	26°18' N
Longitude	75°52' E	73° 4' E
Altitude above mean sea level	1131 ft.	736 ft.
(c) Climate	: Desert climate	
(d) Accessibility	: Both the places are accessible by rail as well as by air.	

3. AIMS

- (i) The aims of the Rajasthan Underground Water Board are promotion and conduct of operations for exploring the underground resources of Rajasthan; preliminary utilization of water resources discovered for demonstrating their irrigational possibilities for the region covered by each series of borings; and undertaking preliminary exploration of all resources of this area.
- (ii) The University of Rajputana serves the educational needs of the area.
- (iii) The Jaswant College at Jodhpur provides higher education for the local area.

4. NATURE

- (i) The Rajasthan Underground Waterboard is Governmental in nature and is based on the mutual co-operation of the Central and State Governments.
- (ii) The University of Rajputana is an autonomous body having been set up by an Act of Legislature.
- (iii) The Jaswant College is maintained and financed by the State Government.

5. MEMBER BODIES

Does not arise.

6. GOVERNING BODIES

- (i) The constitution of the Board is indicated in Schedule A.
- (ii) Governing bodies of the University are the Senate, the syndicate and the Academic Council.
- (iii) The Jaswant College is under the Education Department of the Rajasthan State.

7. FACILITIES

- (a) Laboratory space :- There are laboratories attached to the Jaswant College at Jodhpur. At present these cover an area of 11,508 sq.ft. This can be extended as necessary. A Civil Engineering College has been started at Jodhpur and it will have its own laboratories in course of time.
- (b) Experimental areas :- For demonstrating the irrigational possibilities of water discovered, the Board persuades the local cultivators to start agriculture on a co-operative basis. In addition, it runs an experimental farm of 10 acres. There are at present no experimental areas attached to the University at Jaipur. But with the recent introduction of the faculty of Agriculture a provision of experimental areas has been made. Small garden areas of 26,400 sq.ft. and 29,400 sq.ft. are attached to the Jaswant College. An area of 75,000 sq.ft. can be further developed for experimental purposes in the Umaid Park. Extensive areas near about Jodhpur can be utilized with financial aid for experimental and research purposes to cover the needs of research for arid zones.

- (c) Office space:- Office space is at present fully occupied but extensions can be provided as necessary.
- (d) Provision for higher degrees:- There are 7 faculties at the University including those of Science and Engineering. The faculty of Science includes the subjects of Physics, Chemistry, Botany, Zoology, Geology, Agriculture and Geography, all of which have a vital bearing on the problems of the arid zones. There is provision for Master's and Doctorate degrees in Science at present.

There are post-graduate classes in Botany and Zoology in the Jaswant College at Jodhpur.

8. BASIC EQUIPMENT

- (a) Electricity :- Electricity is available in Jodhpur. Available power is 3640 K.W. and type of current is A.C.
- (b) Water, gas and compressed air:- Water to the Jodhpur College is supplied by the Jodhpur Water Works and gas from a gas plant in the College. Compressed air is not available at present but this can easily be made available, if necessary.
- (c) Special experimental equipment:- The Rajasthan Underground Waterboard has one rotary rig and 2 percussion rigs and other equipment listed in Schedule B. It is proposed to purchase 2 Failings deep bore rigs and other geophysical equipment, etc.
- (d) Workshop :- There is a State workshop at Jodhpur. In addition, the College has got a small workshop for the Science departments.
- (e) Library :- There are libraries both in the University at Jaipur and the Jaswant College at Jodhpur. Additions to the libraries are made under annual grants ear-marked for this specific purpose. In the University as a whole about 10,000 scientific and technical books were added during the year 1949-50 alone. New books worth Rs.14,000 were purchased during 1948-49 for the Jaswant College Library at Jodhpur. The College Library contains more than 18,000 books on various subjects.

9. STAFF

- (a) Scientific and Technical Staff:- List of members of the Rajasthan Under-ground Water Board is appended at Schedule A. In addition, there is a Junior Engineer attached to the Board. The appointment of a Geologist is under consideration.

There are 122 Teachers in the Colleges of the University to teach Science subjects, 14 to teach Engineering and 11 for Agriculture. The number of scientific staff in the Jodhpur College is 28.
- (b) Service Staff:- 3, in the Rajasthan Underground Water Board, and 30 in the Jodhpur College.
- (c) Administrative Staff:- There is one Secretary who is the Administrative Officer for the Rajasthan Underground Water Board assisted by two clerks. The number of administrative staff in the Jodhpur College is 9.
- (d) Fellowships:- None.

- (e) Housing facilities for visitors;- Residential facilities exist in the Colleges affiliated to the University. There are hostels attached to the Colleges where accommodation can be provided to visiting scientists, and fellowship holders. In addition provision for the visitors can be made at a number of other lodges at Jodhpur and Jaipur.

10. FINANCE

- (a) Endowment ;- The University is maintained on the basis of grants from the State Government and its own revenues. Endowments are earmarked for specific purposes like prizes for scholarships and do not constitute a large proportion of the income of the University. The position is much the same with the College at Jodhpur.
- (b) Yearly operating budget;- The Rajasthan Underground Waterboard gets a block grant of 1½ lakh of rupees (nearly \$30,000) from the Central Government. A summary of the budget of the University for the years 1947-1951 is indicated in Schedule C.

The total budgeted amount for 1950-51 for the Jaswant College at Jodhpur was Rs. 4,91,000 (nearly 100,000 dollars) out of which Rs.80,000 (nearly 16,000 dollars) is meant for the Science Departments.

- (c) Work done on a contractual basis;- Till now there has been no work done on a contractual basis in any of the three organizations mentioned above.

11. PROGRAMME

- (a) Present orientation of work and future projects;- The Rajasthan Underground Waterboard at present locates sites and guides various boring operations. Since the inception of the Board and up to December, 1950, 16 bores and one open well were dug. The work is being continued. The water thus far discovered has been utilized for augmenting rural water supply in certain localities and also for demonstrating future irrigational possibilities. It is proposed to develop this work into a coordinated and comprehensive scheme on ground water prospecting involving aerial reconnaissance, geophysical survey by seismic methods and further field and Laboratory studies. Some soil analysis is being done for the Agricultural Department at Jodhpur while the Geological Survey of India has been doing considerable amount of work in and around Jodhpur. It is proposed to coordinate all this work done by different agencies through a Central Institution, a Development and Research Centre, which would systematize and enlarge the scope of the present activities. The University at Jaipur and the College at Jodhpur do not at present undertake any work on problems relating to arid and semi-arid areas but it is proposed to arrange for certain basic theoretical studies to be undertaken at these institutions.
- (b) Periodicals in which results are usually published ;- None at present.

12. RELATIONS WITH OTHER INSTITUTIONS OR ORGANIZATIONS

The Rajasthan Underground Waterboard is set up by the Government of India to which it is directly responsible. The University is an autonomous body set up by an Act of Legislature in the year 1946 and is an affiliating and examining University. The College at Jodhpur, which is affiliated to the University, is maintained and financed by the State Government.

13. SHORT HISTORY

The Board was constituted by a resolution of the Government of India dated the 6th December 1949 and has representatives of the Central and State Governments on it. The life of the board at present has been extended up to the end of 1951-52 though no definite limit is set for the continuation of its operations.

The University of Rajputana was founded in the year 1946. Its jurisdiction extends throughout those States of Rajputana which contain colleges or High Schools recognized by the University. There are 40 colleges affiliated to the University, including the proposed College of Civil Engineering to be started at Jodhpur from this year. It has faculties in Arts, Science, Commerce, Law, Engineering, Medicine and Agriculture. There is a provision for Master's and Doctorate degree in Science and Bachelor's degrees in Mechanical and Electrical Engineering.

The Jaswant College at Jodhpur is a much older institution than the University. There is a provision for the Master's degree in Botany and Zoology. Given facilities and the necessary finance new courses can easily be started in the college which will have a bearing on the problems of arid and semi-arid areas in and around Jodhpur.

14. OTHER INFORMATION

The Professor of Botany in the Jodhpur College and his colleagues are working on a (Botanical) scheme for the development of the arid regions and considerable help and initiative would be forthcoming from this Department as also from the Chemistry, Physics and Zoology Departments of the College. Important work having a vital bearing on the development of this arid area, like geological investigations, ground water explorations, soil analysis etc. is already under way. The nucleus for the building up of a Research Centre exists in the form of the "Rajasthan Underground Water Board". In fact the Board was already entrusted with the responsibility of "undertaking preliminary exploration of all the resources of Rajasthan", and the intention was that the Board should "ultimately link up with the proposed International Organization". It is now proposed to coordinate the various phases of the work, centralize their direction, operation and superintendence by setting up a full-fledged research centre which will be one in the chain of several such centres situated in or near the arid zones of the world.

The Central and State Governments have been spending a good deal of money on borings and other activities briefly detailed above. The continuation of these multifarious activities is largely dependent upon prospects of international financial assistance. It is estimated that the scheme would entail an annual expenditure of about 270,000 dollars on an average, half of which could be met by internal finance. It may be mentioned here that international financial assistance to cover the remainder of the contemplated amount would go a long way in extending the scope of work so as to make it a first class international research centre. Arid zone research falls under the head "Improvement of living conditions of mankind" and as such UNESCO could render substantial assistance by itself and in cooperation with other specialised agencies of U.N.

SCHEDULE "A"

CONSTITUTION OF THE RAJASTHAN UNDERGROUND
WATER BOARD

1. The Minister for Agriculture of the Central Government Ex-officio Chairman
2. Shri C.S. Venkatachar I.C.S., Regional Commissioner and Advisor, Rajasthan Vico-Chairman
3. The Minister for Food and Agriculture, Rajasthan.
4. Chief Secretary, Government of Rajasthan.
5. Dr, B. Vishwanath, Regional Agr. Production Commissioner, Government of India.
6. Shri Paniwala Maharaj.
7. Professor K.N. Kaul.
8. Shri Padamabhan, Chief Electrical Engineer, Rajasthan.
9. The Director of Agriculture, Rajasthan.
10. Thakur Bhawani Singh Pokaran.
11. Shri Kishori Lal, Chief Engineer, P.W.D., Government of Rajasthan.
12. Representative of the Finance Department of the Government of Rajasthan.
13. An Administrative Officer and Secretary nominated by the Central Government.
14. The Board may invite representatives of the Ministries concerned of the Government of India and the Government of Rajasthan to attend the meetings of the Board whenever necessary.

SCHEDULE "B"LIST OF EQUIPMENT TRANSFERRED TO RAJASTHAN
UNDERGROUND WATER BOARD

1. Rotary Rig (complete with tools and equipment)	1.
2. Percussion Rigs (complete with fishing and drilling tools set)	2.
3. Jaigar Pumps	5.
4. Automisor testing pump	1.
5. Ford Truck	1.
6. G.M.C. Trucks	2.
7. Ford Jeeps	2.
8. Welding set	1.
9. 750 gallons water tank	3.
10. Canvas water tank with cover	1.
11. Hydraulic Lifting Jacks	2.
12. Officer's tents	4.
13. Shouldaries	12.
14. Tarpaulines	11.
15. Air Compressor Helmen's	1.
16. 15" size casing pipes	187'-3"
17. 12" - do -	191'-8 5/8"
18. 10" - do -	414'-5"
19. 6" - do -	500'-3"
20. 6" Slotted tube	260'
21. 6" Socketted Pipe ,	183'-7 1/2"
22. 6" Plain Pipes	206'-7"
23. 8" Agriculture Strainer	100'
24. 6" - do -	10'
25. 4" - do -	114'-4"
26. 1 1/2" G.I. Pipes	403'
27. 12" Housing Pipes	200'
28. 4" Black Pipes with Sockets	211'-3"

SCHEDULE "C"EXTRACT FROM THE BUDGET OF THE UNIVERSITY
OF RAJPUTANA FOR THE YEARS 1947 - 1951.INCOME

Sl. No.	Heads of Income	Actuals for		Revised Estimate for 1950	Estimates for 1951
		1947-48	1949		
		Rs.	Rs.	Rs.	Rs.
1.	Opening balance	...	3,05,584	3,19,919	2,77,183
2.	Examination Fees	4,39,924	3,45,807	3,93,710	4,32,100
3.	Other Fees	49,080	25,784	26,670	30,600
4.	Income from publications	1,062	1,644	650	700
5.	States grant for general maintenance	3,17,500	2,30,000	2,62,000	2,72,000
6.	Endowments for prizes, medals, scholarships etc.	...	...	2,577	...
7.	Donations	...	3,000	...	...
8.	University Departments	...	5,345	76,535	68,650
9.	Miscellaneous receipts including fee for duplicate certificates & diplomas, copy of Enrolment Register etc.	243	2,559	2,000	2,000
10.	Provident Fund	5,683	2,957	...	...
11.	Refunds	...	2,868	7,600	...
12.	Advances for T.A. to Inspectors (Affiliation or Recognition fee)	11,874	18,049	15,000	5,000
13.	U. T. C.	5,946	875	...	...
14.	Investments	...	...	1,10,000	...
15.	Interest on Securities and other Deposits	762	887	7,880	8,045
	Total ...	8,32,074	9,45,359	12,24,541	10,96,278

SCHEDULE "C" (contd.)EXTRACT FROM THE BUDGET OF THE UNIVERSITY OF
RAJPUTANA FOR THE YEARS 1947-1951EXPENDITURE

Sl. No.	Heads of Expenditure	Actuals for		Estimates for 1951	
		1947-48	1949	Rs.	Rs.
		Rs.	Rs.	Rs.	Rs.
1.	Establishment Charges	1,02,343	86,937	1,01,260	1,10,310
2.	Examination Charges	2,00,224	2,27,584	3,08,000	3,34,000
3.	Travelling allowances	41,579	90,047	1,04,000	92,000
4.	Printing, Stationery and Postage	47,558	29,569	42,100	40,100
5.	University Library	...	7,996	27,120	39,300
6.	Physical Culture	15,530	9,405	19,300	12,550
7.	University Publications and Grants for publications	331	3,050	6,000	20,000
8.	University Garden	623	516	670	680
9.	Rents and Taxes	15,660	14,200	15,000	15,000
10.	Provident Fund	2,896	11,795	5,050	6,900
11.	University Teaching Departments	...	5,345	1,07,105	1,09,811
12.	University Extension Lectures	...	1,097	5,000	5,000
13.	Miscellaneous	11,274	9,660	13,700	12,300
14.	Capital Expenditure	22,604	3,862	5,000	4,000
15.	Scholarships and Medals	2,524	9,109	25,000	25,000
16.	Contribution to other bodies	2,000	1,000	2,180	2,180
17.	Refund of fees etc.	76	7,887	10,000	10,000
18.	Audit fees	...	900	900	1,000
19.	Advances	1,122	6,128	900	...
20.	Investments	60,146	99,353	1,49,073	...
	Total	5,26,490	6,25,440	9,47,358	8,39,131

PART IIPROJECT "A"

Recommendation 13 of the first session of the Advisory Committee relates to research projects put up for consideration under UNESCO Arid Zone Programme for support from other sources. Item (iii) of Recommendation 13 is "a programme of prospecting the ground water of arid and semi-arid countries to be carried out by a team of technicians equipped with drilling machinery and, where necessary, with geophysical apparatus. The drilling programme should be planned by geologists, hydrologists and agriculturists and other necessary specialists who know the region with the assistance of experts from outside the region if requested by the country concerned". Under Recommendation 13(a) the Committee has asked for the details of the project to be submitted to the Secretariat in time for consideration by the Committee at its second session.

The information is given below as required in UNESCO/NS/AZ/25 dated 8th May, 1951 :-

I. Description of the Project1. Items

Hydrogeological surveys including exploratory borings.

(1) Particulars

- (a) Hydrogeological survey on a regional basis involving a study of the structure and stratigraphy of the Rajasthan region with the object of locating artesian and sub-artesian belts if any, and indicating the stability of areas for deep or shallow wells or tube wells.
- (b) Exploratory borings up to a depth of 1000 feet or more along ground water arteries that might be located as a result of the geophysical surveys to be carried out as explained in item No.2 below.

2. Geophysical surveys.

A geophysical survey by seismic methods involving traverses tentatively fixed as under :

(1) Latitudinal

- a. latitude $25^{\circ}40'$ from the Siwana Hills to Marwar Junction.
- b. latitude $26^{\circ}24'$ from near Vinjorai to Kolladu and eastward to longitude 74° .
- c. latitude $26^{\circ}36'$ from just south of Jaisalmer to Merta Road.
- d. latitude $27^{\circ}10'$ from north of Jaisalmer to Phaledi and Naur.

(ii) Longitudinal

- a. longitude $71^{\circ}10'$ from the Siwana hills to the northern edge of the Jaisalmer outcrop
- b. longitude 72° from the Sukri river to latitude 28° .
- c. longitude 73° from near Erinpura Road to latitude 28° . The objective is to locate buried valleys of former topography which must act as arteries for subsurface drainage. An index map showing the traverses is enclosed herewith.

3. Field and Laboratory studies

Determination of porosities and specific yields of different kinds of rocks and the safe yield of different aquifers by laboratory experiments.
Pumping and recuperation tests in the field for a determination of maximum yields of wells and the safe yields of successive aquifers by sealing earlier water bearing strata.

II. Personnel to be assigned to Projects

(1) Chief ; For overall direction and superintendence.

(2) Hydrogeological Surveys ;

(a) Personnel from India ; Two Geologists.
Five Assistant Geologists.

(b) Personnel from
outside India ;

Dr. G.C. Taylor of the U.S. Geological Survey has already started work in this area under point 4 programme. No more experts will be needed from outside for carrying out this work.

(3) Geophysical Surveys ;

(a) Personnel from India ; Two Superintending Geologists.
Two Geophysicists
Five Assistant Geophysicists
Seven Geophysical Assistants
Five Geophysical Surveyors.

(b) Personnel from
outside India ;

NIL.

(4) Laboratory and Field Studies

(a) Personnel from India: One Senior Research Officer
Two Research Officers
Nine Assistant Research Officers
Nine Research Assistants
Twenty Supervisors.

(b) Personnel from
outside India ; NIL.

III. Equipment and Supplies required

- (1) Hydrogeological Surveys : Two Failings deep bore rigs and two jeeps.
 (2) Geophysical Surveys : Seismic Refractor equipment, one truck and one jeep.
 (3) Laboratory and Field Studies ; Laboratory equipment for determination of porosities, specific yields etc. and pumping equipment.

IV. Itemized budget for Project

(1) Hydrogeological Surveys ;	Rs 8,00,000
(2) Geophysical Surveys ;	Rs 5,60,000
(3) Laboratory and Field Studies ;	Rs 2,62,000
Total	Rs 16,22,000

V. Itemized estimate of funds required from outside sources specifying currencies

(1) Hydrogeological Surveys ;	Rs 4,00,000
(2) Geophysical Surveys ;	Rs 2,80,000
(3) Laboratory and Field Studies ;	Rs 1,31,000
Total	Rs 8,11,000

VI. Estimated starting date ; Beginning of 1952.

VII. Estimated completion date; End of 1953.

PROJECT "B"

The Committee, under recommendation 13(b) has asked the Member States if they wish to submit any other research projects for consideration under the Arid Zone Programme. In addition to the project outlined above, it is also proposed to take up the following items of work, the details of which are given below in the form required by UNESCO/NS/AZ/25 dated 8th May, 1951.

I. Description of the project

<u>A. Items</u>	<u>Particulars</u>
1. Hydrogeological Surveys ;	An aerial reconnaissance of the Rajasthan area to determine the regional structural features and their likely influence on subsoil flow and to observe varying degrees of vegetational densities and like features so that appropriate conclusions may be drawn as a guide to detailed field operations; and (b) a systematic and scientific delineation of the ground water provinces on a regional basis.
2. Hydrological Surveys ;	(a) Water table studies such as the installation of automatic water level recorders in a sufficient number of wells and preparation of maps indicating the levels of water table in different seasons and the nature of fluctuations due to varying climatic cycles and pumping rates; (b) Chemical and bacteriological analysis of water samples to indicate their suitability for different industrial, agricultural and domestic purposes; (c) An examination of the possibility of conserving surface waters by tanks etc. both for direct exploitation as well as for replenishment of the ground water reservoir; and the effect thereof on the regime of the rivers downstream and on the salinity of the region.
3. Land use and management ;	Agriculture and soil surveys and examination of the existing agriculture practices.
4. Meteorological observations and installations ;	Arrangements for making radiation observations and measurements of other meteorological elements of the area like rainfall, temperature etc.

II. Personnel to be assigned to the Project

1. Chief ;	For overall direction and Superintendence, same as in 13(a).
2. Hydrogeological Surveys ;	No personnel in addition to those indicated in reply to recommendation 13(a) are needed.
3. Hydrological surveys ;	No personnel in addition to those intended for laboratory and field studies under recommendation 13(a) are needed.
4. Land use and management ;	
(a) Personnel from India ;	Two Agricultural Officers and Five Assistant Agricultural Officers.
(b) Personnel from outside India ;	NIL.

5. Meteorological observations and installations :

(a) Personnel from India : Two Meteorologists
Two Assistant Meteorologists
Two Professional Assistants
Four Scientific Assistants
Eight Senior Observers
Eight Observatory Attendants

(b) Personnel from
outside India ; NIL.

III. Equipment and supplies required

1. Hydrogeological Surveys ; No equipment required in addition to that indicated in reply to recommendation 13(a).
2. Hydrological Surveys ; Laboratory equipment for water and soil analysis and equipment for observing well levels, gauges, etc.
3. Land use and management ; Necessary agricultural implements.
4. Meteorological observations and installations ; Radiation observation equipment, rain-gauges, etc.

IV. Itemized budget for Project

1. Hydrogeological Surveys ;	Rs 1,31,000
2. Hydrological Surveys ;	Rs 2,62,000
3. Land use and management	Rs 2,46,000
4. Meteorological Observations and Installations ;	Rs 4,09,000
Total	Rs 10,48,000

V. Itemized estimate of funds required from outside sources specifying currencies

1. Hydrogeological Surveys ;	Rs 66,000
2. Hydrological Surveys ;	Rs 1,31,000
3. Land use and Management ;	Rs 1,23,000
4. Meteorological Observations and Installations ;	Rs 2,04,000
Total	Rs 5,24,000

VI. Estimated starting date ; Beginning of 1952

VII. Estimated completion date ; End of 1953.

Compliance with the criteria laid down in
Recommendation 11 of the First Session of
the Advisory Committee and in UNESCO/NS/AZ/25 dated 8.5.51

(i) The programme outlined in reply to recommendation 13 primarily pertains to the arid area of Rajasthan. But the results obtained will be extended to Pakistan if and when considered necessary.

(ii) At present, the UNESCO has taken two specific aspects of arid zone research, namely hydrology and ecology. The suggested programme is in the nature of hydrological and hydrogeological investigations and therefore comes well within the scope of their programme.

(iii) The contemplated exploratory and analytical work is capable of being completed within a couple of years.

(iv) Though not in a very comprehensive and co-ordinated way, some of the aspects of the work outlined in Recommendation 13 are already underway. A description of the work being done at present by different agencies, Central and State, is given in reply to the draft questionnaire. The continuance of the present work is to a large extent dependent upon prospects of international financial assistance from agencies like Unesco.

(v) The results of the research projects can be freely made available to the public according to set procedure.

(vi) Financial assistance will not be utilized to defray the salaries of permanent staff or the purchase of permanent equipment, buildings or land. It may be utilized towards the salaries of experts employed for specific work, either from India or outside or for special equipment acquired specifically for the project outlined.

Recommendation 13(c)

Under this recommendation, the Committee has asked for information concerning the principal research projects that are being carried out relating to the UNESCO Arid Zone Programme. These are already contained in the replies to the questionnaire given under recommendation 7(a).