3. Objectives of the Study

The main purposes of the study is to evaluate the project run in the Western Region with the mutual co-operation of H.M.G. of Nepal and the government of Japan through the Japanese Medical Co-operation team under JICA.

3.1. The specific objectives

3.1.1. To study the existing situation of the above mentioned project.

3.1.2. To find out views, attitude and opinion of the authorities concerned in the project.

3.1.3. Make recommendations on the basis of findings for the improvement of the on going project.

4. Methodology

Different sources of informations were used for the study. These sources were constituted of various sources, documents published and unpublished. But most of the informations were collected through interviews with the concerned authorities of both sides - Japanese as well as Nepalese.

5. The Study sites

The project sites e.g. Western Regional Health Laboratory, Pokhara, various health posts built by the grant aid programme of the Government of Japan in the Western Region as well as Dhading, including other health posts of the region when the project is being inplemented, Bhim Hospital, Bhairawa, were choosen for study.

6. Limitation of the study

The study had to be done within very short time and it was limitted to the programmes concerning the record of discussions between the Japanese Implementation Survey Team and the authorities concerned of H.M.G. of Nepal.

7. Observations

7.1. Technology Transfer from Japan

Until 1976, there was not any programme to send experts from Japan for this project. The first expert team arrived in March 1976. The X-ray technician was also included in the expert team group. The major function of the team was said to be technical transfer to the Nepalese technicians from the Japanese experts.

7.2. Laboratory establishment

During the period from the year 1975 to 1976, the Japanese made a laboratory (temporary) in Gandaki Zonal Hospital compound. The first laboratory expert started his work in that temporary lab. in 1976. The proposed plan of the Western Regional Health Laboratory building with all the equipments fitted in it, was actually started in 1977 and completed in March 1980. At the same time, a dormitory was also constructed. The total expenditure for both building constructions was said to be of about 550 million yen.

The first expert of J.M.C.T. was known to have done the laboratory works, supervised upon the sputum smear examinations done by the staffs of T.B.C.P. Two laboratory technicians started working in the Bacteriological section of the Western Regional Health Laboratory in 1977. They are working with the Nepalese Technicians though they were supposed to give training to the Nepalese technicians. In the year 1976, culture and drug sensitivity test for tubercle baccilli in the laboratory was started. (See Table 1.).

Table 1. Rechecking the Smear Slides Prepared in the Field (Syanja, 1976 October - 1977 July)

Total smear examined in the field	Total smear re-checked	Result of umpire examiner		Result of initial exam. (field)	
(?) 2,516	1,071	+ ve	53	+ ve	47
				- ve	6
		- ve	1,018	+ ve	2
				+ ve	2,016

Under-reading;	6/53 = 11.3%
Over-reading;	2/1018 = 0.2%
miss-reading;	(6+2)/1071 = 0.0074696

7.3. Tuberculosis Control Activities:-

In the year 1976, J.M.C.T. with co-operation of the Tuberculosis control Project of Nepal (T.B.C.P.) started mass B.C.G. vaccination compaign, screening of the symptomatics by house to house visits at Syanja district. (See Table 2.) Passive T.B. case finding i.e. from among the symptomatics attending the health institutions, treatment and management of those cases were started in 1980. In the same year, short course chemo-therapy-trial of 6 months duration was started in the western region. (See the Table 4.)

Table 2. Case finding in Syanja District
(1976-Oct. - 1977-July)

	No. contacted	Symptomatics detected	+ ve	- ve
Active * case-finding door-to-door	52,482	2,516	104	2,412
Passive ** case finding (Health Centre)	255		33	222
Total	2,771 (total exam.)		137	2,634

* It took 9 months to cover all over Syanja District by door-to-door visitation method.

** One technician set (SIC) the laboratory in Syanja Health Center once a week every Friday, Total 30 times.

7.4. X-ray units:

The first X-ray machine with accessary arrived from Japan in the month of December 1977 and was assembled at Gandaki Zonal Hospital in the same month. After that M.M.R. Camera and Stand Bucky for chest X-ray were also donated to Gandaki Zonal Hospital in 1977.

In the year 1978, the Japanese survey team visited Butwal and

Bhairawa to do the feasibility surveys for installing X-ray units. The survey team decided to establish one X-ray unit in Dhim Hospital Bhairawa. The X-ray machine for that hospital came in 1980 but it was set up in 1981.

The tomography machine which was donated in 1981 by Japanese government to Gandaki Zonal Hospital, was fitted only in 1984 after the completion of the new Gandaki Zonal Hospital Building.

7.5. Training for Nepalese Technician in Japan

One laboratory technician and one X-ray technician have already received training from Japan. Besides that, some doctors have received training in Japan. Some times, seats were reported to be lapsed.

7.6. Maintainances of Laboratory

The Japanese experts are supporting to maintain the laboratory buildings, equipments etc. uptil now.

7.7. Equipments for Western Region Health Laboratory

The Government of Japan is known donating equipments worth of 340 million yen for the past eleven years.

7.8. Supply for TB Control

BCG vaccine and anti-tuberclulas drugs and vehicles and audio-visual set used for TB control have been donated from Japan since 1975.

7.9. Other equipments

Besides the X-ray machines for Gandaki Zonal Hostpital and Bhim Hospital Bhairawa, other expendable material such as X-ray films, developer, fixer, chemicals and reagents are being donated by the Japanese government every year.

7.10. Health post buildings

Twelve new health posts were established, nine in the western region and three in the central region.

Table 3. Health Posts Constructed by the Government of Japan

	Health posts	District	Regions
1.	Bairani	Dhading	Central
2.	Binighat	"	"
3.	Gajuri	"	"
4.	Tharpa	Tanahun	Western
5.	Dumhibas	Nawalparasi	"
6.	Wawalpur	"	"
7.	Dumkauli	"	"
8.	Pitanjighat	"	"
9.	Waling	Syangja	"
10.	Dhhapiya	Rupendehi	"
11.	Majhgaon	"	"
12.	Semara	"	"

7.11. Short Course chemotherapy trial

The short course chemotherapy trial of 6 months duration was started by J.M.C.T. in the year 1980.

7.11.1. Drugs and dosages being used

Rifampicin	300 mg daily
Pymzinamide	1 gm daily
Ethambutol	500 mg daily
INH	300 mg daily

7.11.2. Duration of treatment

All the above four druge and given for 6 months

7.11.3. Short course chemotherapy trial in Western Region

Table 4. Kaski District

Month Year M	Patients under treatment at beginning of each month	(+) New	(+) Old	Total	Treatment completed	Died	Migrated	Transfered	Defaulted	Total	Patients under treatment at the end of each month
2039											
9	1		2	2							2
10	2	1	1	2		1				1	3
11	3	10	3	13							16
12	16	7	4	11				1		1	26
2040											
1	26	6	5	11			1	1		2	35
2	35	5	6	7					2	2	40
3	40	4		8	2					2	46
2040											
4	46	7	2	9	2					2	53
5	53	3	1	4	12	1				13	44
6	44	6	2	8	15	2				17	35
7	35	6	2	8	6					6	37
8	37	3	4	7	6					6	38
9	38	9	6	15	8					8	45
10	45	5	6	11	5					5	51
11	51	5	9	14	5					5	60
12	60	9	9	18	7	1				8	70
2041											
1	70	8	7	15	8					8	77
2	77	12	3	15	11					11	81
3	81	17	7	24	13	2			1	16	99
Total	-	123	79	202	100	7	1	2	3	113	-

2041 : 1984.

Field Trial of Short Course Chemotherapy in Western region

Table 5. TANAHU

Year Month		(+) New	(+) Old	Total	Completed	Died	Migrated	Transfered	Defaulted	Total	
2040											
8	-		9	9							9
9	9	3	7	10					1	1	18
10	18	3	11	14							32
11	32	3	1	4		1				1	35
12	35	5	8	13							48
2041											
1	48	5	1	6					1	1	53
2	53	4	6	10	9					9	54
3	54	7	1	8	16					16	46
TOTAL		30	44	74	25	1			2	28	

No. of Patienteists started treatment by month and health post

Health posts/Month	2040 8	9	10	11	12	2041 1	2	3	Total
Damauli	4	2	3	1	4	4	6	3	27
Khaireni	4	3	1	2	3		2	1	16
Kattike	1	1						1	3
Purandihi		1	2						3
Tharpu		3	1	1	4			3	12
Caipehipe			2			1			3
Sabung			4		2	1		1	8
Jamruk			1				1		2
	9	10	14	4	13	6	9	9	74

7.11.4. Conversion rate:

* In cases of new patients, 2 out of 122 were found to remain positive even after 6 months treatment i.e. (1.6%)
* In old cases 5 cut of 82 cases treated were found to be not converted (6%)

7.11.5. Criteria of Selection of patients for the trial

i. Patients with sputum positive for AFB in direct smear

ii. Both new and old cases were admitted to the trial

iii. Patients of easily accessible places only are known to have been admitted to the trial.

7.11.6. Assessment of Progress

* Direct sputum smear examination is the method
* First during diagnosis
* Second after 3 months
* Third after 5 months
* Lastly after 6 months

But in Kaski

* First three months - every month sputum check up

* Then after three months only
* Cuture is also done.

Table 6

Short Course chemotherapy trial instituted
Health posts and Hospitals in Western Region

Health posts or Hospital	District	Region
1. Pokhara H.P.	Kaski	Western
2. Sishuwa H.P.	"	"
3. Batulechaur H.P.	"	"
4. Majhithan H.P.	"	"
5. Tharpu H.P.	Tanahun	"
6. Damauli H.P.	"	"
7. Khairanitar H.P.	"	"
8. Bandipur Hospital	"	"
9. Mustang Dist. Hospital	Mustang	"

8. Main findings

On the basis of observations of works, records and documents many of the components were found to be not upto satisfaction and need immediate attention and action for the concerned authorities in order to improve the programme.

8.1. Health posts:

i. The Health posts built by Government of Japan were very nice and comfortable.

However, due to shortages of resources, the health posts established, fall short of the target set e.g. There are shortages of staffs, allotment of drugs and supplies were found to be quite insufficient without medicine, the health workers are discouraged. The public naturally looses interest in the service and utlization of the health post decreases.

ii. In most of the health post, there were problems of water supply.

iii. Lack of supervision from the concerned unit was felt.

Table 7. Health Post Buildings Constructed by the Government of Japan

	Health Post	District	Region
1.	Bairani H.P.	Dhading	Central
2.	Gajuri H.P.	"	"
3.	Tharpu H.P.	Tanahun	Western
4.	Dumkibas H.P.	Nawalparasi	"
5.	Nawalpur H.P.	"	"
6.	Dumkauli H.P.	"	"
7.	Pitanji ghat H.P.	"	"
8.	Waling H.P.	Synagja	"
9.	Chhapiya H.P.	Rupendehi	"
10.	Majhagaon H.P.	"	"
11.	Benighat	Dhading	Central
12.	Semara	Rupendehi	Western

8.2. T.B. Control Activities

Although the purpose of the evaluation team is to observe and study the programme jointly run by the tuberculosis Control Project of H.M.G., Nepal and J.M.C.T. in the western region, the health posts built by the Government of Japan in Dhading district were also inspected on the way to Pokhara.

8.2.1. No anti T.B. medicine was available in the health post of Dhading, although T.B.C.P. had launched case finding programme there and the district was fully integrated one.

8.2.2. In Tanahun and Kaski, there was no shortage of anti T.B. medicine for the last one year. Streptomycin injections were being supplied by J.M.C.T. InH + Thiacitazone combined tablets were being provided by T.B.C.P. But there were shortages of distilled water for injection in the health posts.

8.2.3. Almost all the T.B. patients in the health posts of Tanahun were referred cases from Pokhara specially, the reason being there was no facility of diagnosis of tuberculosis in the district health posts.

8.2.4. There were two kinds of treatment regimens being followed up in the health posts for T.B. patients.

Long course

Streptomycin for 2 months
INH Thiacitazone for 1 year daily

Short course chemotherapy

Rifampicin 300 mg daily - 6 months
Pyrazinamide 500 mg daily - 6 months
Ethambutol 500 - 600 mg daily - 6 months
INH 300 mg daily - 6 months

For the long course - T.B.C.P. is providing medicine through District Public Health office and patients are being followed up by the T.B.C.P. team stationed at Pokhara. The number of defaulters under long term therapy were found to be high - 25 - 30%.

8.2.5. Follow up examination of patients under long term therapy

Sputum examinations of must of the patients under that therapy are not found to be done which is of course very essential to see the progress.

8.2.6. According to T.B.C.P. - only sputum position T.B. patients, were to be provided streptomycin. But the health posts are not following that instruction.

8.2.7. Follow up of the cases under short course chemotherapy was found to be satisfactorily done.

* The conversion rate was more than 95%
* Defaulters: According to the records provided.

In Kaski: - of the 202 patients under short course chemotherapy, 3 cases were found to be drop out.

In Tanahun: - Among 88 cases, 2 patients were found to have defaulted.

8.2.8. Short course chemotherapy trial instituted health posts and hospitals in the western regions:- (See the Table 6.)

8.2.9. The dosage of the regimen being followed up in the trial seemed to be new and no such trial has been known to be published. Hence, it needs to be thoroughly studied with regards to its efficacy, replace rates etc.

8.2.10. The detailed report of the trial should be published.

8.3. Western Regional Health Laboratory

8.3.1. The building construction was very nice, impressive and it has got all the modern facilities for investigations. It has been found properly maintained uptil now. It is acutally a reference laboratory for tuberculosis bacteriological examination and has got all the modern facilities. Besides that, general investigations are also being done.

8.3.2. Staffing:

Staffs of the Zonal hospitals are working in the Western Regional Health Laboratory.

Doctors (Pathologist)	---	1
Laboratory technician	---	4
Lab. assistant	---	2
Lab. boy	---	2
Naib Subba (Adm.)	---	2
Typist	---	1
Driver	---	1
Peons	---	4
Sweeper	---	4
Electrician	---	1
	Total	22

8.3.3. The laboratory seems to be under-utilized from the point of view, (it has been established of reference laboratory for T.B. bacteriology) because of lack of facilities of specimen collection and transportation for patients outside the district.

8.3.4. Training

As per agreement (See the Master Plan in Record of Discussion) training programme for health workers in the health posts to upgrade the capabilities of basic laboratory examinations had to be organized. But it was known that only once, training was given in the beginning. It was also known that no such request was received from H.M.G. side, although there was enough budget set aside for the programme by JMCT.

8.4. X-ray Services

8.4.1. Gandaki Zonal Hospital:

- X-ray machine was provided in 1977
- M.M.R. Camera was provided in 1979
- Tomography machine was provided in 1981 but was fitted in 1984 only.
- Every year X-ray films, developers, fixer, hanger etc. are being provided by J.M.C.T.

8.4.2. Bhim Hospital, Bhairawa:

- X-ray machine was donated and set up in 1981 by J.M.C.T.
- Every year, X-ray films, developer fixer, hamger etc. are being provided by J.M.C.T.
- Protective screens have been provided.

Qualified X-ray technicians are lacking in both of the above mentioned X-ray units.

8.5. Administrative sides of the project

8.5.1. As per agreements the Japanese experts were supposed to give technical guidance and advise to Nepalese authorities and staffs associated with the project pertaining to the project/and the Nepalese authorities concerned would be responsible for the administrative and managerial materials pertaining to the project. But one of the basic objectives of the project ie. transfer of appropriate technology to Nepal side from the Japanese experts have not been satisfactorily carried out.

8.5.2. Appropriate technicians have been felt lacking in the Western Regional Health Laboratory works.

8.5.3. Co-ordinating Committee used to meet even 4 times a year previously but now only once a year for the last 2 years which was felt not enough to fulfill its functions and objectives of the project.

8.5.4. Counterparts:

Services of the Nepalese counterparts had been felt severely lacking. This may hamper in the future of the project if timely measures are not taken.

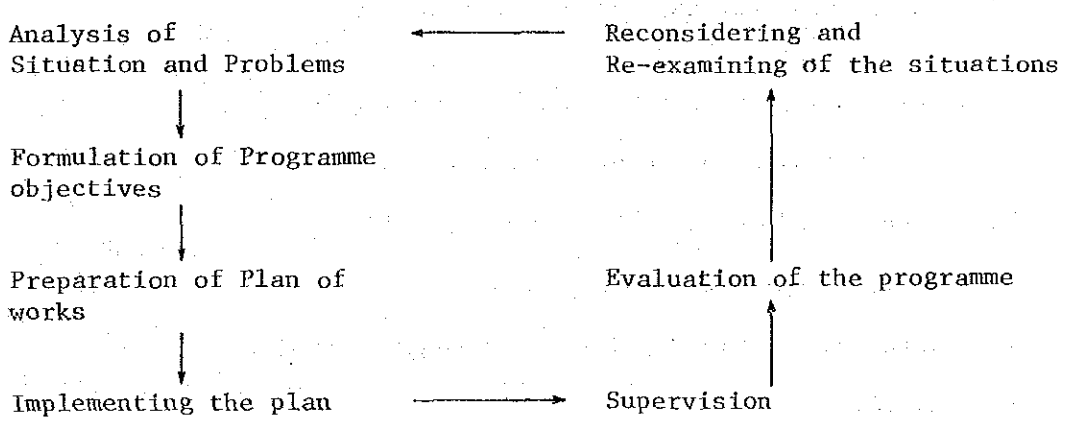
8.6. J.M.C.T. at Present

Doctor	---	1
Lab. technician	---	2 (For the last 3 months only 1)
P.H.N.	---	1 (Left 2 months ago)

9. Recommendation

Programme development is a continuing process proper and definite procedure have to be followed for the planning, implementations and development of the programme or project. There is no short cut to the process.

Schematic Presentation of the Process



The diagnosis indicates that the results of evaluation become the basis for decision planning and action in the programme development process.

The recommendation for the improvement of the programme are based on the observations and main findings discussed above.

9.1. The programme will be mere wishful thinking, unless an attempt is made to strengthen the organizational capabilities. In the present context, it cannot be denied that the proper co-ordination and realization of need of co-operation of all the participating organizations are lacking.

9.2. There should be better communications among the participating units so as to ensure that the programme is geared for the effective realization of the objectives.

9.3. Each participating units responsible for the programme should have appropriate personnels for organizing, co-ordinating and implementing the programme as planned and they should function as a unit whole in the form a committee or subcommittee whatever it may be.

Function of the unit

i. It should be responsible for implementation of the plan

ii. It should advise and guide the workers to lunch the programme

iii. Meetings should be held to discuss the operation of the programme

iv. should organize conference of the workers at least once in a year

v. Progress report should be prepared, discussed and improvement in the programme should be done as whenever and wherever necessary.

vi. Supervisions of the works should be done.

9.4. The participating units for the programme should be

i. Regional directorate of the Western Region

ii. Tuberculosis Control Project of Nepal

iii. Central Health Laboratory

iv. Integrated Community Health Development Project

v. J.M.C.T.

9.5. Integration of Tuberculosis Services into General Health Services

9.5.1. As one of the objectives of this project is to carry out and demonstrate the most effective tuberculosis control programme as part of integrate community health programme, the project should have direct touch with

the Integrated Community Health Development Project of H.M.G. of Nepal.

9.5.2. Considering the huge problems of tuberculosis in the country and shortages of resources, the first thing is to be realistic and analyse the situations and appreciate the methods of Tuberculosis Control that can be applied in the country on nationwide scale.

9.5.3. The present health infrastructures should be reviewed.

9.5.4. Well planned National Tuberculosis Control Programme should be developed according to the needs of the people and in consonance with the socio economic condition of the country. The draft proposal of National Tuberculosis control programme, is known to have been submitted to the Ministry of Health.

9.5.5. Aims of the programme:- Well defined objectives and activities of the programme should be prepared and efforts should be made to bring Tuberculosis under control progressively.

9.5.6. There should a National Tuberculosis Centre at the Central Level: and under that there should be Intermediate (Regional) and Peripheral (District) levels. The functions of all the levels should be well defined:-

Central level

* Planning
* Policy making
* Communication
* Technical guidance
* Budgeting
* Co-ordinating with national and international agencies
* Training
* Collection and analysis of data
* Research
* Publication of programme reports

Intermediate level (Regional level)

* Planning
* Administration

* Technical guidance
* Supplies
* Referral services
* Record Keeping and reporting
* Supervision
* Corrective actions

Peripheral level (District level)

Planning
Supplies
Service delivery through Health posts, Health Centres, Hospitals
Supervision
Record keeping and reporting
Training to the health worker (See Multidisplinary team)

Implementation:

It comprises of:-
- Providing necessary instructions
- Providing supplies, equipments and drugs
- Training to the staffs for case finding and treatment
- Delivery of services through general health institutions
- Maintenance

Supplies:

Should be at desirable level at all levels.

9.5.7. Delivery of the Services

9.5.7.1. The staffs of the health institutions in the district are responsible for delivery of the services.

9.5.7.2. A District Tuberculosis Centre should be established in which there will be a team of job specific multicidiplinary health works

Doctor (Dist. Medical Officer)	---	1
Lab. Technician	---	1
Treatment organiser	---	1
Statistical assistant	---	1
Administrative assistant	---	1

Clerk --- 1

9.5.7.3. Functions of the multidiciplinary team

i. Training of the health personnels of the district to carry out the activities of the T.B. Control Programme.

ii. To integrate T.B. Services into the general health services.

iii. Supervision of the programme in the district

iv. Supply

v. Record keeping and reporting.

9.5.8. The ongoing project can be developed as a model project and as part of the National Tuberculosis Control Programme in consultation with the concerned authorities.

Hence the project should be extended and run under the National Tuberculosis Centre to be established later.

9.5.9 The Nepalese counterparts of the Japanese experts working in the project should devote most of the time together.

9.5.10. Facilities of direct sputum examination for AFB for tuberculosis case finding diagnoses and assessment of progress of the patients undergoing treatment, should be made available in the district hospitals or health posts wherever possible and they should be accessible to the patients in need of these services. For that, training on microscopic examination of sputum for AFB should be imparted to H.P. staffs.

9.5.11. Planning of programmes and research of any kind should be done beforehand in co-ordination with the concerned authorities and get them approved from the concerned offices before implementing them.

9.5.12. Services of experienced bacteriologist and technicians should be made available in the Western Regional Health laboratory to make it a reference lab. for T.B. Bacteriology and for training the required manpower for the purposes.

9.5.13. Arrangement for sputum collection and transport specimens should be made at places so as to make such examinations like sputum culture for

AFB and drug sensitivily tests possible for patients of different parts of the country from the reference laboratory.

9.5.14. There should be co-ordination among the organizations participating in Tuberculosis Control activities.

9.5.15. Non-governmental organizations like the Nepal Anti T.B. Association can play a very important role in educating and motivating the people and the patients. Hence, the officials of the concerning organizations should be consulted to make such programme.

9.5.16. District T.B. Case Index records should be maintained and regularly reported to the concerned offices.

9.5.17. Referral services and systems of tracing treatment defaulters in time should be devevloped.

9.5.18. Orientation and refresher training programmes in the Tuberculosis control activities should be arranged for the health workers which are essential for improvement in the programme being launched.

9.5.19. Detailed working manuals should be prepared for the workers.

9.5.20. For partients with suspected pulumanary tuberculosis, no treatment should be provided unless the sputum has been tested whether to treat of not to the sputum negative patients should be left under the descrimination of the doctor responsible for the patients.

9.5.21. All organizations participating in the tuberculosis control programme should produce annual reports of their works with statistical column.

9.5.22. There should be quarterly meeting in the health posts, district and Regional T.B. centres which would provide an opportunity for discussing and resolving difficulties. Such a meeting should be attended by representatives from the Regional and district T.B. Centres and representative of voluntary bodies.

V　今後の医療協力プロジェクトへの提言

1　地域保健に対する協力について

・WHOは〝Health for all by the year 2000〟を目指して保健医療施策を進める際の基本をPrimary Health Care（PHC）の発展におき、あらゆる疾病対策もこの中に組み入れてゆくことを前提としている。PHCの基礎となるのは、basic health service（BHS）が全国的に組織され、最小限の水と食物がゆきわたり、しかもこれらの実現に住民の側からの発意が反映されるべきであるとされている。

・開発途上国ではPHCの発展が十分でない国が多く、その発展が保健医療施策の基本であるため、これに最重点をおいて発展に努力しており、この事業に協力することは保健医療協力の中で最も大切なこととともいえる。名称は様々であるが本プロジェクトを含めて、PHCの発展に協力するプロジェクトもいくつか実施されている。

・この場合の問題点の1つは、PHCの発展に対する協力、或いはBHSの向上に対する協力、公衆衛生の向上に対する協力という表現の内容に対する理解が、国により、人によってかなり異なるということである。しかも用心をしないと相手も自分と同じように解釈しているという誤解がおこりがちである。日本は予防面と治療面をかなりはっきりと分けるしくみをとっているため、地域保健活動、公衆衛生の向上等という用語を用いた場合に予防面を重点において受けとりがちであるが、途上国では第一線の保健医療活動は両者を含めて行なわれており、PHCの発展、BHSの向上といっても、実際には治療面に重点がおかれていることが多い。PHCの発展、BHSの向上、公衆衛生の向上等に対する協力要請があった場合にはより具体的にどのようなことに対する協力を要請しているのが明らかにした上で協議に入る必要がある。

・BHSの向上ということ1つをとり上げても、国の隅々まですべての人が手近に利用できる施設（Health Post等）を作ることもその中の大切な項目であるが、これを支援するより高いレベルでの病院やHealth Center（日本の保健所とは異なり、治療もする能力を持つ）検査機関の整備、これらすべての施設における診療機能の強化（器材、薬品等の整備）、これらの施設で働らく要員の養成と配置等がすべてBHSの向上という表現の中に含まれる。日本からの協力を考える際に、この中のどれに協力してほしいかということをはっきりさせ協議する必要がある。これらの中で日本が協力しうるものとしては、病院、HC、HP、検査機関等の建設、これらの施設で用いる器材等の供与があるが要員の内第一線で働く者の養成は多くの場合現地語で行なわれるので日本人専門家には困難な場合が多いことが予想される。従ってBHSの向上に対する協力は、無償協力には馴染みやすいが技術協力をできる範囲は比較的限定されるといえよう。

本プロジェクトの場合には無償で建てられたWRHLへの器材供与と技術協力、GZH等

へのX線装置の供与と技術協力が行なわれ、無償で建てられたＨＰに対してはその後の技術協力は結核対策への協力を除いて行なわれていない。

- 供与器材については、いくつかの段階に分けて整備するべき器材を整理し、その規格を統一し、標準化を図る必要がある。施設別に第一線のＨＰ、ＨＣ、地区の病院、郡の病院、県の病院、地域の中央病院、国の中央病院等に分け、電気供給の有無、その安定性によって整備するべき器材を決め、各々の規格を決めておけば、現場にあるものと比べ何を整備するべきか決めやすいと思われる。

2　ネパールへの医療協力

- 保健医療の面で多くの問題を抱えているネパールはその改善のため外国からの援助を強く望んでいる。今回のD.G of Health Services Dr. Regmi との会談においても結核対策への協力の他に、ＰＨＣの拡大と機能の強化への協力の要請があった。また、Bir 病院に対するＣＴの供与の要請もあり，Kanti 小児病院への器材の無償協力は既に調査が行なわれている。
- 結核対策についての協力については先に詳しく提言を述べたが、i) 結核がネパールの重要な保健上の問題の１つであり、ii) これを征圧できる手技がありながらそれがうまく組織されていないため、ださないでよい犠牲をだしており、iii) 日本からの協力を契機にして結核対策の再編成（というよりは本格的な取り組み）がなされるなら、結核征圧への第一歩を踏みだすことが期待できる。本プロジェクトに関係したカウンターパートの研修は必らずしも順調に進められなかったが集団コース等で既に多数の医師、検査技師等が日本での研修を済ませており、国レベルでのプロジェクトが始まった時に直ちにカウンターパートとなりうることも有利な点である。
- ＢＨＳの拡大、強化に対する協力についても先に述べたとおりでネパールのＢＨＳの現状を考えるなら、その拡大強化の必要性は強い。ただし、ＢＨＳのどの部門への協力を望んでいるのか、地域的には全国なのか、西部地域なのか（地域別に援助依頼をする国を決めている）無償協力のみでよいのか、技術協力を併用するべきなのか等についての検討が必要である。
- コンピューター断層（ＣＴ）等最高級の医療装置については、保守・管理（修理）の点においてトリブバン大附属病院が入院患者を収容し始め、供与機器がすべて動き始めた段階で判断を下すことが望ましいと考えられる。大学附属病院の運用体制については電気技師は居るが、エレクトロニクスを担当できる技師（電気（電子）回路を解する技術者）は未だ雇用されておらず、現在までに供与された機器が順調に活用されるか否かは今後の経過を見守る必要がある。従って当面は、最新の機器よりも、Simple な構造をしたものを供与すべきである。

　なお、供与に際しては相手の能力以上の機器をあれもこれもと手広く供与しても効果は一

向に上がらないので、相手の能力（技術）を充分調査のうえ、限定した機種を供与し教育指導をした方が効果的である。また、健康保険制度のないネパールでは、種々の検査を行なう際費用を徴収しており、（例えばX線胸部撮影は1枚35Rp、ポカラでは日本からフィルムが供与されていたため20Rp）、これが検査の普及を阻む一つの要因となっており、CTのような高度な検査機器の場合、装置は無償で供与するとしても維持管理と検査の費用を考えた時に患者から徴収する額はかなりの額になると推定され、その利用度についても疑問があるからである。

- 本プロジェクトの第3次協力期間中、WRHLにおいて中堅技術者養成対策費を以てヘルスセンター等の検査技師を対象とした研修会の実施を企画したが、ネパール側にも研修生の滞在費等につき相当の予算措置が必要であり、講師が確保できなかったこともあるが、結局実現できなかった。

  現在JICAの予算でいくつかのlocal cost事業が実施されているが、ネパール国のようなLLDCに該当する国に対しては実施要綱のより弾力的な運用を図るべきではなかろうか。あるいは各種local cost事業の実施要綱を作成の段階においてLLDCに対しては特別の配慮が必要であると思われる。中堅技術者養成対策事業に言及すれば、研修期間中の研修生の日当、宿泊費の経費負担がLLDC以外でも問題になるところであり、少くともLLDCにおいては日本側負担とすべきであろう。

3 その他

- 本プロジェクトの場合、殆んどのカウンターパートが正規職員でないためカウンターパートの日本における研修というプロジェクト方式技術協力が十分に発揮できなかったことにより、正規職員の配置見直しを十分に事前に確認すると共に配置不可能な場合には臨時職員でも海外研修を可能せしめるようネパール国政府と協議することも必要かと考える。
- 技術協力で一番重要な事は相手（カウンターパート）の反応であろう。即ち相手が心を開いて指導を受けるようになれば、技術指導の成果は飛躍的に向上するものである。それには専門家が現地語を解するのが一番の近道である。派遣前語学研修において現地語研修を充実し、技術協力の成果の向上の手助けをしてもらいたいと思う。
- プロジェクトには調整員の派遣が必要である。特にプロジェクトサイトが首都以外にある場合、また、本プロジェクトのように、協力内容が、結核、検査、放射線と分かれ、しかも、相手機関が夫々異なる場合には、チームリーダーを補佐する業務調整員の存在は不可欠である。

Ⅵ　資　　料

資料 1

EVALUATION OF COOPERATION PROJECT WITH NEPAL FOR THE DEVELOPMENT OF PUBLIC HEALTH IN THE WESTERN REGION

1. Overall Evaluation of the Project.

1.1. A general outline of the project.

This project was initiated by the record of discussions signed in October 1973, and the main objectives were to cooperate with His Majesty's Government of Nepal for 1) the development of basic health services in the Western Region, 2) the implementation of tuberculosis control in the Western Region and 3) the improvement of laboratory examination facilities in the Western Region. HMG of Nepal strongly requested from the beginning and expected the construction of 22 health posts in the Western Region, however, it was impossible to construct buildings inside the framework of the technical cooperation, and the Japanese side suffered seriously how to cope with this request.

A prefabricated ward of laboratory was donated in 1974, however, HMG of Nepal strongly requested again to the JICA team sent out in January 1976 the construction of health posts and the expansion of the laboratory, as the donated prefabricated laboratory is unsuitable for laboratory works due to dusty environment and marked difference in the highest and lowest temperature inside of the laboratory.

The first JMCT (Japanese Medical Cooperation Team) was sent out in March 1976. The team consisted of 3 experts, and started its activities. From October 1976, the team cooperated with the TBCP (Tuberculosis Control Project) for carrying out the mass BCG campaign and door-to-door visit for finding out tuberculosis patients which was started in the Syangya district. From November 1976, laboratory examinations were started in the newly improved prefabricated laboratory.

The survey team organized by JICA was sent out in January 1977, and strongly requested to the Ministry of Health to dispose laboratory technicians to the Western Regional Health Laboratory (WRHL) for the purpose of technical transfer.

The first evaluation team was sent out in February 1978, and the evaluation report is summarized as follows: 1) the project was started in 1973, however, the actual cooperation has been done only in the recent two years, 2) the capacity of WRHL is improved and biochemical and bacteriological examinations including culture and drug sensitivity tests for tubercle bacilli are now feasible, 3) X-ray pictures of good quality are now available in the Gandaki Zonal Hospital (GZH) by using the X-ray apparatus donated from Japan and the training of Nepalese technicians, and 4) various valuable informations on the magnitude of tuberculosis problem and the methods of case-finding were obtained through cooperation with TBCP for the campaign in Syangya district. Problems raised during discussions were 1) the absence of counterpart laboratory technicians in WRHL (1 technician belongs to GZH), and 2) difficulties in raising cost of transportation of donated equipments from the Indian border to Kathmandu, and HMG of Nepal requested JICA to support the cost of transportation. As a result of evaluation, it was agreed 1) to intensify the laboratory capacity of WRHL as the regional laboratory for the Western Region and

as the national reference laboratory for the examinations of tubercle bacilli, 2) to improve the X-ray diagnostic facilities of other hospitals in the Western Region, 3) to continue the cooperation for tuberculosis control in the Western Region, and 4) to extend the project for another 3 years, and both parties signed for the record of discussions.

In August 1978, it was agreed between the two governments to construct 12 health posts and a new building of WRHL by the grant aid from Japan. The request to construct health posts was finally materialized, however, due to technical difficulties, the number of health post to be constructed by the grant aid was reduced to 12 (9 in the Western Region and 3 in the Central Region).

In June 1980, the new building of WRHL was completed, and the laboratory examinations were carried out in this new building. Short-course chemotherapy (SCCT) for tuberculosis of 6 months using four drugs (INH, REP, EMB and PZA) combination was started in health posts in Kaski county.

The second evaluation team was sent out in November 1980. The evaluation report is summarized as follows: 1) 9 laboratory staff were disposed to WRHL and various laboratory examinations are now feasible, and donated instruments are used efficiently, 2) 2 technicians are engaging in radiography in GZH and 1 radiologist was disposed to GZH, hence the X-ray diagnostic facilities are very much improved, 3) SCCT has been tried in Kaski county together with the investigation of how to improve the case-holding activities. As a result of the evaluation, it was agreed 1) to move the cooperation in laboratory and X-ray diagnosis into the follow-up phase, 2) to continue the cooperation in tuberculosis control giving emphasis on the improvement of tuberculosis case-finding and case-holding activities in the integrated health posts, and 3) to extend further the cooperation for another 4 years, and both partieis signed for the record of discussions in January 1981.

Since December 1984, SCCT was expanded to another counties.

In February 1984, the survey team was sent out, and the results of observations are summarized as follows: 1) quality of X-ray pictures taken in GZH is maintained on high level, and one X-ray technician was promoted to a permanent staff and now receiving training in Japan, and a new tomography apparatus donated from Japan will be set in a near future, 2) excellent laboratory facilities are available in WRHL, however, its capacity is underutilized, and 3) passive case-finding and treatment for detected patients are carried out on high level at integrated health posts through the cooperation of TBCP and JMCT. The following points were raised: 1) absence of a radiologist in GZH due to moving out, 2) necessity to develop tuberculosis programmes in hilly areas, and 3) necessity of establishing the national tuberculosis control programme.

By the end of October 1984, the number of tuberculosis patients started SCCT by TBCP in cooperation with JMCT amounted to 276, and those completed treatment reached 125.

1.2. Evaluation of the project.

There was some discrepancy in the understanding of record of discussions signed in 1973. HMG of Nepal requested strongly the construction of health post, but it is outside the framework of the bilateral technical cooperation, and this was finally materialized 5 years later by the grant aid. As the negotiations are done in English, which is a foreign language for both sides,

it is quite understandable that the meaning of the same word might be understood differently by both sides. However, every efforts should be made to avoid or at least minimize such discrepancy.

Comparing the situation of medical care and public health services in the Western Region 12 years ago when the project was started and at present, it showed a marked improvement. The number of hospitals in 1973 was 15, and at present, and GZH which was initially a cottage hospital was reconstructed to 50 beds hospital, and in a near future, another 150 beds will be added. The number of health centres was 7 in 1973, and it is at present, due to changes in the territory of the regions. The number of health posts was increased from 58 in 1973 to at present, and among them 9 were constructed by the grant aid from Japan.

Medical facilities of hospitals in the region were very much improved. Japan contributed to the improvement of X-ray diagnosis facilities by donating X-ray apparatus and tomographic apparatus to GZH, X-ray apparatus to Bhairahawa Hospital and by giving technical guidance to Nepalese X-ray technicians.

Concerning laboratory examinations, simple routine examinations of urine and blood were feasible in a dome laboratory donated from Dooley Foundation in 1973. Prefabricated laboratory was donated from Japan, then a new building of WRHL was constructed by the grant aid from Japan, and laboratory facilities was improved markedly during these 12 years by the donation of equipments, supply of reagents and technical guidance given by JMCT. Several equipments donated from Japan were distributed to district laboratories, hence contributed to the improvement of laboratory facilities in the whole Western Region.

All the above facts indicate that the technical cooperation from Japan together with the grant aid contributed to the improvement in the basic health services, laboratory and X-ray diagnostic facilities in the Western Region of Nepal.

Concerning tuberculosis control programme, the magnitude of tuberculosis problem and the significance of sputum smear examination in tuberculosis case-finding were elucidated through the cooperation of JMCT with TBCP in the mass campaign in the initial phase of cooperation. Recently, JMCT cooperated with TBCP in the implementation of passive case-finding, treatment and case-holding activities in the integrated health posts, and it was found that SCCT was feasible under field conditions existing in Nepal with excellent achievements. These experiences will be used as basic important informations when the national tuberculosis programmes are planned in the future.

As to the technical transfer to the Nepalese counterparts, difficulties existed from the beginning in the disposal of Nepalese permanent staff as a counterpart to the Japanese experts, as this project is a temporary one, and under such a temporary project, it is almost impossible to dispose a permanent staff due to regulations existing in Nepal. This confinement delayed the technical transfer, however, the target was achieved in X-ray techniques in GZH and to a certain extent in the laboratory facilities in WRHL and tuberculosis control activities by TBCP.

Nearly all the equipments and instruments donated from Japan were maintained well, and are being utilized.

It should be appreciated highly that the evaluation of the project was done also by HMG of Nepal. This is indeed a first time in technical cooperations with Nepal, and it has hardly been done in the whole medical cooperation project of JICA.

1.3. Recommendations.

The duration of this project is already 12 years, though no actual cooperation was done in the initial 3 years. Pretty good achievements were obtained in laboratory and X-ray diagnostic facilities as well as in tuberculosis control, and as far as the laboratory examinations in WRHL and X-ray photography in GZH concerned, all the activities can now be done by the Nepalese personnel. Based on the above findings, it is concluded that the project will be terminated by the end of February which was indicated in the record of discussions signed in January 1981.

Concerning the X-ray diagnostic facilities in GZH, the number of X-ray technicians should be increased when the beds in GZH is increased to 200, and the disposition of radiologist to GZH is strongly recommended to use its capacity of X-ray photography most efficiently.

The capacity of WRHL is under-utilized at present, and it is hoped that its capacity will be fully utilized when the number of beds in GZH is increased to 200. it is also hoped that its training facility be used for short-course refresh training of laboratory personnel working in district laboratory, health centres and health posts.

The capacity of WRHL as a national reference laboratory for tuberculosis bacteriology should be maintained. Concerning drug sensitivity tests and identification tests, the problems of transportation of specimens is to be solved in a future. The national policy how to monitor the prevalence of primary and acquired drug resistance should be determined first, and the capacity of WRHL is to be used for this purpose.

Now time has come to establish the National Tuberculosis Centre, which is responsible to plan and implement the national tuberculosis control programme. The bilateral technical cooperation to this National Tuberculosis Centre from Japan is a new project, the feasibility of which should be investigated thoroughly. Tentatively, it is our strong wish that the supervised short-course chemotherapy will be continued in the Western Region under the supervision of doctors of TBCP.

Tuberculosis will remain as one of the important public health problems in Nepal for coming several decades, and many lives are lost at present unnecessarily though we know how to prevent it. If the national tuberculosis control programme is planned and implemented through the technical cooperation from Japan, it is the first step toward the eradication of the problem. One of the advantage for this new cooperation project is the fact that several experts were already trained in Japan who are expected to work as the key-personnel in the future cooperation project.

2. Evaluation of Cooperation in Tuberculosis Control.

2.1. Tuberculosis Control in Nepal.

Tuberculosis Control Project (TBCP) was organized in 1965, and started its activities in tuberculosis control giving emphasis on the mass BCG vaccination. Since 1975, TBCP started the mass direct BCG vaccination for children below 15 and case-finding by door-to-door visit. Treatment of detected patients was done at health post. As an upper organization, Central Chest Clinic (CCC) was set in Kathmandu, and CCC is engaging in ambulatory treatment of tuberculosis.

The first national tuberculosis seminar was held in Kathmandu on February 1978, which was attended by Dr. Bulla (WHO Headquarter), Sir J. Crofteon and Dr. Perera (WHO experts), and representatives of the International Union Against Tuberculosis (IUAT). Drs. Shimao and Iwamura and Dr. Hirota, then leader of JMCT, participated to this seminar. Recommendations for future tuberculosis control programme in Nepal made in this seminar are summarized as follows: 1) Tuberculosis control should be integrated into the general health services in the country, and a medical officer in charge of tuberculosis control should be appointed at the Ministry of Health, 2) Every effort should be made for regular drug supply to the periphery. The method of case-finding should be sputum smear examination for symptomatics, and treatment should be confined to smear positive patients, 3) The national standard regimen of chemotherapy is the combination of INH AND Tb_1 for 12 months with initial 2 month SM if possible, and 4) The most important measure is to prevent defaulting during treatment.

The second national tuberculosis seminar was held in Biratnagar of November 1980, which was attended by Dr. bulla, Sir John Crofton, Dr. Sodhy, Dr.Selvaratunum and Dr. Styblo. Dr. Shimao participated to this seminar. Recommendations for future tuberculosis oontrol in Nepal mede in this seminar is summarized as follows: 1) The Tuberculosis Coordinating Committee chaired by the Minister of Health should be organized. The Committee is responsible for planning the basic principle of the national tuberculosis control programme and its implementation, 2) Chief medical officer in charge of tuberculosis control should be appointed at the Ministry of Health. He should be responsible for all tuberculosis control activities. All the existing organizations relating to tuberculosis such as CCC and TBCP should be reorganized, 3) Top priority should be given to the regular supply of drugs to the periphery. A special team in charge of drug supply should be organized by the chief medical officer in charge of tuberculosis, 4) Tuberculosis control should be integrated into the basic health services of the country, and the chief medical officer in charge of tuberculosis should be responsible to supervise and guide the smooth integration of the programme in the periphery, 5) BCG vaccination programme should be transferred gradually to the Expanded Programme of Immunization (EPI), 6) Case-finding is to be done by sputum smear examination for symptomatics, however, the prerequisite to carry out case-finding is to affirm a regular supply of drugs to all detected patients, 7) Uniform treatment card should be prepared, 8) National standard regimen of chemotherapy is combination of INH and TB_1 with initial SM for 2 months, however, if patients show intolerance to Tb_1, either combined use of INH, SM and PAS or INH and SM twice weekly must be substituted, and 9) Activities of the Nepal Tuberculosis Association should be intensified.

According to this recommendation, the Tuberculosis Coordinating Committee was organized in December 1981, and the Committee is now investigating the future direction of tuberculosis control in the country. Basic principles in establishing the national tuberculosis programmes are 1) the programme should be implemented in the whole country, 2) techniques used in the programme should be inexpensive and simple, and can be applied in any part of the country, and 3) to terminate the case-finding by door-to-door method which is being carried out by TBCP, and convert to the passive case-finding and treatment for detected patients. The idea of establishing the National Tuberculosis Centre by reorganizing the existing CCC and TBCP, the establishment of regional tuberculosis centre in each region and disposition of tuberculosis control officers in each district is now being discussed.

Activities of TBCP has already been converted to passive case-finding, treatment and case-holding activities in the integrated area in cooperation with health post.

2.2. Cooperation of JMCT for Tuberculosis Control in the Western Region.

The first JMCT started a cooperation with TBCP for the mass BCG vaccination and door-to-door visit case-finding of tuberculosis patients from October 1976. TBCP sent 23 staff headed by a health assistant to the Western Region to carry out the BCG vaccination and case-finding in cooperation with JMCT. BCG vaccine, vehicles and some of antituberculous drugs used for treating detected patients were supplied from JMCT.

The whole Syangya district with a population of about 280 000 was covered during the period from October 1976 to July 1977. The number of vaccinated with BCG amounted to 78 010. Altogether 52 482 persons were contacted from door-to-door visit, and 2 516 (4.8%) were found to complain respiratory symptoms. Sputum smear examination was carried out, and 104 were found to be positive for tubercle bacilli. The bacilli positivity was 4.1% to the total number examined, and 0.2% to the total persons contacted. During this period, passive case-finding was also tried in the health posts in the same area, and out of 255 persons visited health post due to respiratory symptoms, 33 (12.9%) were found to be positive for tubercle bacilli.

Double checking of some of sputum specimens were done by a Japanese laboratory expert. Out of 1 071 specimens, 53 were interpreted as positive by Nepalese microscopists, and the remaining 1 018 were negative. Out of 53 positive specimens, 6 (11.3%) were interpreted as negative by the Japanese expert, and only 2 (0.2%) of negative specimens were interpreted as positive. These results indicated that the reliability of microscopic examinations of Nepalese microscopists is high.

Sputum culture was done in parallel to smear examination, and it was found that only 5% of total positive specimens were smear negative but culture positive. The results indicated that sputum smear examination is enough to detect bacillary patients.

JMCT had continued its cooperation further with TBCP for the mass BCG vaccination and door-to-door visit programme, and BCG vaccines and SM were supplied from Japan.

Since 1980, short-course chemotherapy (SCCT) was initiated at Pokhara health post. The regimen of chemotherapy was the four drugs combination of INH, RFP, PZA and EMB for 6 months, and health education was repeatedly done for patients before and during treatment. Encouraged by an excellent result of SCCT, namely nearly 100% negative conversion of bacilli, low defaulter rate and low relapse rate, SCCT was expanded since December 1982 at Kaski district, since December 1983 at Tanahu district for pulmonary tuberculosis patients with sputum smear positive. All the patients in these two districts and patients who can attend regularly to health posts were subjected to SCCT. JMCT team cooperated with staff of health posts and TBCP in supplying drugs and health education to patients.

At the time of diagnosis, sufficient instructions are given to patients about the nature of the disease and method of treatment. Whole one day dose of drugs is packed in one, and in the initial one month, patients are asked to come to health post every week to collect drugs. In the second month, patients are asked to visit health post every two weeks, thereafter every 4 weeks. If a patient fail to come on an appointed day, a home visit or of TBCP will visit patients's house and instruct hime to come regularly.

Up to now, altogether 276 patients were taken in, among them 153 were new cases and 123 were retretment cases. Eight patients (2.9%) died during treatment, 1 (0.4%) moved out, 2 (0.7%) were referred to other health post, 5 (1.8%) defaulted

from treatment, 125 completed 6 month treatment, and the remaining 135 cases are under treatment at present. Among treatment completed cases, the bacilli negative conversion rate is 98% in the original treatment cases and 94% in the treatment cases, and the relapse was none in the original cases and 1 case in the retreatment cases. As the regimen is expensive, it cannot be applied as the national standard regimen, but the method of case-holding used in this programme can be applied in any part of the country.

2.3. Evaluation of Activities of JMCT.

Cooperation to tuberculosis control might be a rather difficult task for JMCT as there was no national tuberculosis programme and no medical officer in the Ministry of Health in charge of tuberculosis control.

The first JMCT was sent out in 1976, when TBCP just started the mass BCG campaign and door-to-door visit case-finding, and actual cooperation was done first in Syangya district with several achievements.

The necessity of converting such a mass campaign to the constantly operating national programme was pointed out in the second tuberculosis seminar held in November 1980, and a cooperation for tuberculosis control faced a difficult situation. The biggest obstacle was the absence of the national tuberculosis programme, though TBCP tried to convert its activity to passive case-finding, treatment and case-holding of detected patients.

The activities of JMCT was changed to a cooperation for a model treatment and case-holding activities in the integrated health posts and SCCT was started at health posts where JMCT participated. The results of SCCT obtained up to now is excellent, with high negative conversion rate and few relapse and low defaulting during treatment. SCCT should be done under the supervision of a doctor, and the cost of drugs is expensive, hence SCCT cannot be applied as a national standard regimen of chemotherapy. However, case-holding activities used in this trial including health education of patients and measures to prevent defaulting can be applied in any part of the country. The manual of treatment can also be applied if the regimen of chemotherapy is changed to the present national standard regimen.

Thoroughout the whole cooperation period, cooperation was done with TBCP. It is our regret that no doctor was stationed as a regular staff in the Western Region who can cooperate with JMCT. The reasons of absence of such a doctor might be 1) shortage of tuberculosis specialist in general, and 2) the project was done in Pokhara, where it is much more difficult to station a permanent staff than in Kathmandu. JMCT requested several times the regular visit of a medical doctor of TBCP to the Western Region, however, it was not finalized.

The overall evaluation of the cooperation of JMCT in tuberculosis control can be evaluated as excellent as in the initial phase of cooperation 1) the magnitude of tuberculosis problem was elucidated, 2) sputum smear examination was found to be an appropriate method of case-finding in Nepal, and 3) reliability of Nepalese microscopist is high, and in the later phase of cooperation 1) practical method of case-holding was tried, and 2) SCCT can be conducted under field conditions in Nepal with excellent results of treatment and very low defaulter rate.

The training of Nepalese counterpart was done to a certain extent but not enough due to 1) absence of doctors stationed in the Western Region and 2) difficulties in employing permanent staff in a project.

2.4. Recommendations for the Future Direction of Cooperation in Tuberculosis Control Based on the Experiences in the Past 12 Years.

Tuberculosis will remain as one of the most important health problems in the coming several decades in Nepal. To cope with this problem, the National Tuberculosis Centre should be established. The main function of the Centre will be following: 1) Planning of the constantly operating national tuberculosis control programme, 2) Its implementation, 3) Conduct of research needed for the implementation and improvement of the programme, 4) Training of man-power engaging in tuberculosis control on various levels, and 5) Collection, tabulation and analysis of informations and statistics on tuberculosis and its control programme. In the implementation of the programme, it should include 1) provision of sufficient budget for the programme, 2) regular and sufficient supply of instruments, drugs and reagents to the periphery, and 3) provision of sufficient number of personnel engaging in tuberculosis control.

It is recommended to establish the regional centre in each region. The main function of the regional centre will be the following: 1) Planning of the programme in the region, 2) Implementation of the programme inside the region including guidance and supervision to the activities in the periphery and regular supply of drugs and reagents, and 3) Training of staff working at health posts.

If the above idea is approved by the Ministry of Health and is enforced, and the cooperation from Japan to the above project is officially requested, the following might be considered from the Japanese side: 1) Construction of the new building of the National Tuberculosis Centre in Kathmandu and its branch in Pokhara by a grant aid, and 2) Technical cooperation to the activities of the Centre and its branch. If the national programme is planned and be implemented through the technical cooperation from Japan on a national level as an adviser and practical field activities in Pokhara, this will no doubt contribute to the development of tuberculosis control in Nepal.

In the Western Region, there is still a stock of anti-tuberculous drugs which can be used for SCCT for about one year. It is strongly recommended that SCCT be continued in the Western Region by TBCP under the supervision of medical officer of TBCP with regular visit to Pokhara.

3. Recommendations for the Technical Cooperation in Health Care in General with Nepal Based on Experiences in the Past 12 Years.

As there are so many problems in health care in Nepal, HMG of Nepal strongly wishes to receive a cooperation from outside to improve its situation. During discussion with Dr. Regmi, the Director General of Health Services, he expressed a desire to receive a cooperation from Japan not only in tuberculosis control but also in the development of primary health care. Through other channel, a request was made to donate a computorized tomography to Bir Hospital, and a preliminary survey was already made about the instruments and equipments which will be donated to Kanti Children's Hospital from Japan.

Regarding the technical cooperation in tuberculosis control, the recommendations were already described in detail. As tuberculosis will remain as one of important health problems for a long future, and many lives are unnecessarily lost because of the lack of the national tuberculosis programme, it is expected that HMG of Nepal steps forward to control the disease by establishing the national programme and starting its operation encouraged by the initiation of the technical cooperation from Japan. Several doctors and laboratory technicians

have already been trained both in the group as well as in the counter-part training programmes in the past, and they will be able to work as a counter-part personnel if the project is started.

There is an urgent need to develop basic health services, however, if the cooperation will be made in the development of basic health services, a request should be mentioned in full detail, for instance, whether in a whole country or in the Western Region, construction of health post or of district hospital, donation of equipments or drugs, a grant aid alone or with technical cooperation, etc.

Concerning the donation of computorized tomography from Japan, it is more desirable to make decision after observing the operation of sophysticated equipments and instruments donated to Tribhuvan University Teaching Hospital. As to the operation of teaching hospital, an electric engineer is avialable, but an electronic engineer is hardly available. We have to observe carefully whether all these apparatus work smoothly or not. Moreover, patients have to share some amount of money when they receive medical examinations, for instance, 35 Rp. for chest X-ray, which prevents the extensive use of various clinical examinations. In the case of computorized tomography, patients most likely have to pay more money to receive such an examination, which is unbearable to most of patients in Nepal.

資料 2　(1) 第 1 次R／D（協力期間：1973年10月28日～1978年10月27日）

Record of Discussions

Between the Authorities Concerned of the Ministry of Health of His Majesty's Government of Nepal and the Japanese Medical Cooperation Survey Team

The Japanese Medical Cooperation Survey Team headed by Dr. Isamu Tagaya visited the Kingdom of Nepal from 14th October 1973 and discussed with the authorities concerned of His Majesty's Government of Nepal on the future medical cooperation plan related to the public health services in Nepal.

The list of the participants for the meetings is attached.

Based on the discussions held in November/December 1972 between the Ministry of Health of His Majesty's Government of Nepal and the Medical Cooperation Survey Team headed by Dr. Seiya Yamaguchi, the Japanese cooperation on the development of basic health services in the Western Region of Nepal, consisting of Gandaki, Lumbini and Dhaulagiri zones, was considered desirable, and projects proposed have been investigated by the authorities concerned of both Governments.

In order to put the projects into operation, the Ministry of Health of His Majesty's Government of Nepal and the present Survey Team have reached the following understanding through their discussions.

1. The Government of Japan will cooperate with His Majesty's Government of Nepal on the development of basic health services in the Western Region of Nepal, which comprises of Gandaki,

Lumbini and Dhaulagiri zones.

2. The Government of Japan will support the development of anti-tuberculosis programme in the region as well as the development of the regional health laboratory.

3. His Majesty's Government of Nepal will set up a base at Pokhara available for this project and the Government of Japan will cooperate with His Majesty's Government of Nepal in constructing the laboratories and the residences for the experts in the base.

4. On request by His Majesty's Government of Nepal, the Government of Japan will send experts concerned through OTCA.

5. Vehicles, equipments and expendables necessary for the operation will be provided by the Government of Japan on request by His Majesty's Government of Nepal.

6. His Majesty's Government will designate a medical officer as an administrative coordinator, who will be responsible for the liaison between His Majesty's Government of Nepal and the Japanese experts concerned.

7. The Government of Japan will accept Nepalese participants for training in Japan.

8. This project will be continued 5 years starting 1973/74.

It was expressed that His Majesty's Government of Nepal would be very much interested in constructing and equipping the health posts in the region with the cooperation of the Government of Japan.

The both parties are pleased to note that the discussions were conducted in constructive and friendly manner and achieved the objectives for which it is made.

The programme of cooperation covered by this Record will be carried out on approval by the respective Governments and implemented within the budgetary appropriations in accordance with the law and regulations in force in the respective countries, and within the framework of Colombo Plan technical cooperation.

Kathmandu, 28th October, 1973

Dr. Isamu Tagaya Head, Japanese Medical Cooperation Survey Team	Dr. H. D. Pradhan International Health and Training Division Directorate of Health Services His Majesty's Government of Nepal

(2) 第２次R／D（協力期間：１９７８年２月２４日～１９８１年２月２３日）

THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE MEDICAL SURVEY TEAM AND THE AUTHORITIES CONCERNED OF HIS MAJESTY'S GOVERNMENT OF NEPAL ON THE JAPANESE TECHNICAL COOPERATION FOR THE MEDICAL COOPERATION PROJECT

The Japanese Medical Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as JICA) and headed by Mr. Tadao SHIMAO, Director, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, visited the Kingdom of Nepal from February 9, 1978 to February 25, 1978 for the purpose of working out the details of the technical cooperation program concerning the Medical Cooperation Project in the Kingdom of Nepal.

During its stay in the Kingdom of Nepal, the team exchanged views and had a series of discussions with His Majesty's Government (hereinafter referred to as H.M.G.) of Nepal authorities concerned in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and H.M.G. of Nepal authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Kathmandu, February 24, 1978

Tadao Shimao

Dr. Tadao Shimao
Head of the Japanese Evaluation Survey Team

H N Upreti

Dr. H.N. Upreti
Senior Public Health Administrator, International Health and Training Division
Department of Health Services
H.M.G.

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and H.M.G. of Nepal will cooperate with each other in implementing the Medical Cooperation Project (hereinafter referred to as "the Project") for the purpose of the development of basic health services in the Western Region of Nepal, consisting of Gandaki, Lumbini and Dhaulagiri zones.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese experts as listed in Annex II through the normal procedures under the Colombo Plan Technical Cooperation Scheme.

2. The Japanese experts referred to in 1 above and their families will be granted in the Kingdom of Nepal the privileges, exemptions and benefits no less favourable than those accorded to experts of third countries working in the Kingdom of Nepal under the Colombo Plan Technical Cooperation Scheme.

III. PROVISION OF MACHINERY AND EQUIPMENT

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such machinery, equipment and other materials necessary for the implementation of the Project as listed in Annex III, through the normal procedures under the Colombo Plan Technical Cooperation Scheme.

2. The articles referred to in 1. above will become the property of H.M.G. of Nepal upon being delivered c.i.f. to the Nepalese authorities concerned at the ports and/or airports of disembarkation, and will be utilized exclusively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.

IV. TRAINING OF NEPALESE PERSONNEL IN JAPAN

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to receive at its own expense the Nepalese personnel listed in Annex IV, connected with the Project, for technical training in Japan through the normal procedures under the Colombo Plan Technical Cooperation Scheme.

2. H.M.G. of Nepal will take necessary measures to ensure that the knowledge and experience acquired by the Nepalese personnel from technical training in Japan will be utilized effectively for the implementation of the Project.

V. MEASURES TO BE TAKEN BY H.M.G. of Nepal

1. In accordance with the laws and regulations in force in the Kingdom of Nepal, H.M.G. of Nepal will take necessary measures to provide at its own expense:

   (1) Services of the Nepalese counterpart personnel as listed in Annex V;

   (2) Supply or replacement of machinery, equipment, instrument, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project, other than those provided through JICA under III above;

2. In accordance with the laws and regulations in force in the Kingdom of Nepal, H.M.G. of Nepal will take necessary measures to meet :

   (1) Expenses necessary for the transportation within the Kingdom of Nepal of the articles referred to in III above as well as for the installation, operation and maintenance thereof;

   (2) Customs duties, internal taxes and any other charges, imposed in the Kingdom of Nepal on the articles referred to in III above;

   (3) All running expenses necessary for the implementation of the Project.

VI. ADMINISTRATION OF THE PROJECT

1. The Japanese experts will give necessary technical guidance and advice to Nepalese staff associated with the Project pertaining to the implementation of the Project, and the Nepalese authorities concerned will be responsible for the administrative and managerial matters pertaining to the Project.

2. For the successful implementation of the Project, the Joint Committee will be established with the members as listed in Annex VI.

   The Committee will meet at regular intervals.

   The functions of the Committee will be as follows :

   (1) To formulate plan of action for this Project;

   (2) To review the Project budget, fellowship and equipment requests ; and

   (3) To advise to the Nepalese authorities concerned about the implementation of the Project at all stages and at all levels.

VII. CLAIMS AGAINST JAPANESE EXPERTS

H.M.G. of Nepal undertakes to bear claims, should it arise, against the Japanese experts engaged in the Project resulting from, occuring in the course of, or otherwise connected with the discharge of their official functions in the Kingdom of Nepal, except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VIII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be 3 years from February 24, 1978.

ANNEX I MASTER PLAN

The Government of Japan will cooperate with H.M.G. of Nepal in carrying out the Medical Cooperation Project through dispatch of Japanese experts, acceptance of Nepalese personnel for technical training in Japan and provision of equipment.

The Project is intended :

(1) to provide the Western Regional Health Laboratory facilities as a reference laboratory in the Western Region and a national reference laboratory in tuberculosis works,

(2) to level-up diagnostic facilities of zonal and some of district hospitals with special emphasis on X-ray and laboratory examinations in the Western Region,

(3) to extend Tuberculosis Control Project in the Western Region, and

(4) to promote the development of basic health services in the Western Region by integrated implementations of above mentioned subjects.

ANNEX II JAPANESE EXPERTS

Experts in laboratory examination, tuberculosis control and X-ray examination.

ANNEX III

PROVISION OF MACHINERY AND EQUIPMENT

1. Equipments for the intensification of facilities of the Western Regional Health Laboratory.

2. X-ray apparatus, microscopes and laboratory equipment to be provided to zonal and some district hospitals.

3. Equipments and supplies used for tuberculosis control in the Western Region.

ANNEX IV TRAINING IN JAPAN

1. Personnel in laboratory work associated or to be associated with the project in the Western Region.

2. Personnel in tuberculosis control in the Western Region.

3. Senior staff of the Health Services of H.M.G. of Nepal.

ANNEX V COUNTERPART PERSONNEL

1. Counterpart personnel in laboratory works in the Western Regional Health Laboratory.

2. Counterpart personnel and field workers in TB control project in the Western Region.

3. Counterpart personnel in X-ray examinations in the Gandaki Zonal Hospital.

ANNEX VI COMPOSITION OF THE JOINT COMMITTEE

Japanese side :

Japanese experts

Nepalese side :

Director General of Department of Health

Senior Public Health Administrator,
International Health and Training Division

Regional Director of the Health Services in
the Western Region

Director, Central Health Laboratory

Project leader, Tuberculosis Control Project

The Supplementary Note to the Record of Discussions between the Japanese Medical Survey Team, signed on February 24, 1978

A. With reference to III. (Provision of machinery & equipment), 2. of the Attached Document to the above-mentioned Record of Discussions, H.M.G. authorities concerned expressed a strong request that the articles referred to in 1 above will become the property of H.M.G. of Nepal upon being delivered c.i.f. to the Nepalese authorities concerned at the border and/or airport disembarkation...

B. In reply to the above request, the Japanese Medical Survey Team promised H.M.G. authorities concerned that their request be conveyed to the authorities concerned of the Government of Japan immediately after the return of the team to Japan.

Tadao Shimao

Dr. Tadao Shimao
Head of the Japanese Evaluation Survey Team

H.N. Upreti

Dr. H.N. Upreti
Senior Public Health Administrator, International Health and Training Division
Department of Health Services
H.M.G.

(3) 第3次R／D（協力期間：1981年2月24日～1985年2月23日）

Ⅶ 討議議事録

THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE IMPLEMENTATION SURVEY TEAM AND THE AUTHORITIES CONCERNED OF HIS MAJESTY'S GOVERNMENT OF NEPAL ON THE JAPANESE TECHNICAL COOPERATION FOR THE DEVELOPMENT OF BASIC HEALTH SERVICE PROJECT

The Japanese Implementation Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as JICA) and headed by Dr. Tadao SHIMAO, Director, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, visited the Kingdom of Nepal from November 22nd, 1980 to December 8th, 1980 for the purpose of working out the details of the technical cooperation program concerning the Development of Basic Health Service Project in the Kingdom of Nepal.

During its stay in the Kingdom of Nepal, the Team exchanged views and had a series of discussions with His Majesty's Government of Nepal authorities concerned in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and His Majesty's Government of Nepal authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Kathmandu, January 20, 1981.

Tadao Shimao

Dr. Tadao Shimao
Head of the Japanese Implementation Survey Team

Dr. H. N. Uprety
Acting Director-General,
Department of Health Services
HMG of Nepal

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and His Majesty's Government (hereinafter referred to as H.M.G.)of Nepal will cooperate with each other in implementing the Development of Basic Health Service Project (hereinafter referred to as "the Project") for the purpose of strengthening the basic health services in the Western Region of Nepal in light of rural health needs with special emphasis on tuberculosis control.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese experts as listed in Annex II through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The Japanese experts referred to in 1 above and their families will be granted in the Kingdom of Nepal the privileges, exemptions and benefits no less favourable than those accorded to experts of third countries working in the Kingdom of Nepal under the Colombo Plan Technical Cooperation Scheme.

III. PROVISION OF MACHINERY AND EQUIPMENT

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such machinery, equipment and other materials necessary for the implementation of the Project as listed in Annex III, through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The articles referred to in 1 above will become the property of the H.M.G. of Nepal upon being delivered c.i.f. to the Nepalese authorities concerned at the airports and/or borders of disembarkation, and will be utilized exlusively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.

IV. TRAINING OF NEPALESE PERSONNEL IN JAPAN

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to receive at its own expense the Nepalese personnel connected with the Project for technical training in Japan through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. H.M.G. of Nepal will take necessary measures to ensure that the knowledge and experience acquired by the Nepalese personnel from technical training in Japan will be utilized effectively for the implementation of the Project.

V. MEASURES TO BE TAKEN BY H.M.G. of Nepal

1. In accordance with the laws and regulations in force in the Kingdom of Nepal, H.M.G. of Nepal will take necessary measures to provide at its own expense:

   (1) Services of the Nepalese counterpart personnel and administrative personnel as listed in Annex IV;

   (2) Land, buildings and facilities currently available as listed in Annex V;

   (3) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than those provided through JICA under III above;

   (4) Transportation facilities and travel allowance for the Japanese experts for the official travel within the Kingdom of Nepal, taking account of local conditions and financial capabilities of the Nepalese authorities concerned;

   (5) Suitably furnished accommodations for the Japanese experts and their families, taking account of local conditions and financial capabilities of the Nepalese authorities concerned.

2. In accordance with the laws and regulations in force in the Kingdom of Nepal, H.M.G. of Nepal will take necessary measures to meet:

   (1) Expenses necessary for the transportation within the Kingdom of Nepal of the articles referred to in III above as well as for the installation, operation and maintenance thereof;

   (2) Customs duties, internal taxes and any other charges, imposed in the Kingdom of Nepal on the articles referred to in III above;

   (3) All running expenses necessary for the implementation of the Project.

VI. ADMINISTRATION OF THE PROJECT

1. The Japanese experts will give necessary technical guidance and advice to the Nepalese authorities and staff associated with the Project pertaining to the implementation of the Project, and the Nepalese authorities concerned will be responsible for the administrative and managerial matters pertaining to the Project.

2. For the successful implementation of the Project, the Coordinating Committee will be established with the members as listed in Annex VI. The Committee will meet at least once a year.

   The functions of the Committee are as follows;

   (1) To formulate the detailed annual plan of works for the Project;

   (2) To review the implementation of the Project;

   (3) To advise the Nepalese authorities concerned about the implementation of the Project at all stages.

VII. CLAIMS AGAINST JAPANESE EXPERTS

H.M.G. of Nepal undertakes to bear claims, if any arises, against the japanese experts engaged in the Project resulting from, occuring in the course of, or otherwise connected with the discharge of their official functions in the Kingdom of Nepal except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VIII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be 4 years from February 24th, 1981.

ANNEX I MASTER PLAN

1. Objective

The Project aims at strengthing the basic health services in the Western Region of Nepal, consisting of Gandaki, Lumbini and Dhaulagiri zones, through the upgrading of the capabilities of the health posts to meet the rural health problems with special emphasis on tuberculosis.

2. Implementation

The Ministry of Health will have overall responsibilities for the implementation of the Project, taking account of the proposal made by the Coordinating Committee for implementing the Project. The Government of Japan will dispatch Japanese experts, accept Nepalese personnel for training in Japan and provide necessary equipment.

3. Activities under the Project

(1) Technical assistance to establish the tuberculosis control program in the Western Region.

(2) To organize the training program for the health workers in the health posts to upgrade the capabilities of basic laboratory examinations.

ANNEX II JAPANESE EXPERTS

Experts

in tuberculosis control

in public health nursing

in laboratory examination

in other fields mutually agreed upon.

ANNEX III LIST OF THE ARTICLES

1. Equipment and supplies for tuberculosis control in the Western Region.
2. Equipment necessary for the training program.
3. Others mutually agreed upon.

ANNEX IV LIST OF NEPALESE STAFF

1. Counterpart personnel in tuberculosis control
2. Counterpart personnel in laboratory works
3. Counterpart personnel in X-ray examinations
4. Clerical and service personnel
5. Other personnel necessary for the Project mutually agreed upon.

ANNEX V LIST OF LAND, BUILDINGS AND FACILITIES

The Nepalese authorities offer land, buildings and facilities necessary to the Project.

ANNEX VI COMPOSITION OF THE COORDINATING COMMITTEE

Chairman: Director General of Department of Health

The Nepalese side	The Japanese side
Senior Public Health Administrator, International Health and Training Division	Experts
Regional Director of the Health Services in the Western Region	The JICA Representative
Director, Central Health Laboratory	
Director, Central Chest Clinic	
Project leader, Tuberculosis Control Project	

Note: An official of the Embassy of Japan may attend the meeting of the Coordinating Committee as an observer.

資料 3.　3次協力期間中の供与機材リスト

(1) 昭和56年度供与機材リスト

番号	品名及び仕様	メーカー名	数　量	単　価	金　額
A	試薬品類				
1	Sodium L-Glutamatemoro 500g		5	1,600	8,000
2	Glycerin 500g		10	800	8,000
3	Potasium Hydroxiden 500g		3	600	1,800
4	T4 Test		2	20,000	40,000
5	Urease Glycerin extract 25mℓ		5	1,500	7,500
6	Urease(sigma type Ⅲ) 50g		1ケース		14,350
	7500ユニット				
7	Picric acid 25g		4	850	3,400
8	EDTA 500g		1		4,000
9	H2O2 500g		2	500	1,000
10	Brilliort cresyl blue 25g		4	2,000	8,000
11	Potacium Ferry Cyanide 25g		2	600	1,200
12	Pregnancy Test Reagent		10セット	12,000	120,000
	持田ゴナピス				
13	Blood grouping serum				
	抗A血清		8セット	3,000	24,000
	〃B 〃		〃	3,000	24,000
	〃C 〃		〃	8,500	68,000
	RH式血液判定用				
14	Light green 25g		4	12,000	48,000
15	Zndur Black B 25g		4	5,000	20,000
B	機械器具				
1	ニクロム線0.5φ5m×1	村中	5	400	2,000
2	Loop（白金線枠）	〃	20	180	3,600
	代用白金線付				
3	駒込ピペット 2mℓ	池本	20	240	4,800
	5mℓ	〃	80	290	23,200
4	試験管立 ステンレス	三和			
	SS18-100 for 100test tube		10	2,600	26,000
	SS18-50 for 50 〃		10	1,700	17,000
	φ 18m/m				

番号	品名及び仕様	メーカー名	数　量	単　価	金　額
5	ディスポ注射器 12 mℓ 針付き	テルモ	100	45	4,500
6	薬匙　三ツ組 ステンレス3本組	村中	10	270	2,700
7	シリコン栓　φ18 m/m	NEG	300	200	60,000
8	試験管 Hbメーター用(303)	エルマ	200	600	120,000
9	滴瓶 茶色　120mℓ	池本	20	900	18,000
10	Rotator VDRL A－1　No 2026	池本	2	138,000	276,000
11	直示天秤　220V CT3－200D	長計	1		500,000
12	Coagulator　220V 2.5 kw 15A C-200	平沢	1		780,000
13	定電圧装置 2KVA　220V 入力出力	東京理工舎	5	158,000	790,000
14	複写機 リコーDT5300 ペーパーインク台付 ペーパーB4B5　5BOX A4　10　〃 トナー　12本 現象液　24本 パーツセットテーブル付		1		1,017,200
15	化学天秤　B2－200 秤量　200 g 読取限度　0.1 mg	長計	2	180,000	360,000
16	電気ふ卵器 1432－B－1	池本	2	220,000	440,000
17	蒸留水製造装置 WS－22	ヤマト	2	274,000	548,000
18	光電比色計　AE－22 スペア電球5ケ付×2	エルマ	2	250,000	500,000
19	恒温水槽　1841	池本	2	112,000	224,000
20	冷蔵庫　R－730M	日立	2	170,000	340,000

番号	品名及び仕様	メーカー名	数　量	単　価	金　額
21	遠心器　KN−70	クボタ	2	180,000	360,000
	予備遠心管付				
22	手動式遠心器	富士平	4	9,000	36,000
	予備遠心管付				
23	ミクロヘマトクリット用遠心器	トミー	2	175,000	350,000
	毛細管2本付				
	HC12−FA				
24	乾熱滅菌器	池　本	2	380,000	760,000
	1630−BS Max 200℃				
	内寸　60×45×45				
25	Blood Mixer　ラック付	萱　垣	4	58,000	232,000
C	結核対策用				
1	ストレプトマイシン		5,000box	750	3,750,000
	1g×10vial /box				
2	Acid Salpharic　500g 特級		40パック	2,200	88,000
D	レントゲン関係				
1	カセッテ　12×15	森　川	2	30,000	60,000
	With intesifying screen				
2	グリッド	〃	1		100,000
	12×15　Vertical				
3	フィルムハンガー	〃	5	1,150	5,750
	12×15				

(2)　昭和57年度供与機材リスト

番号	品名及び仕様	メーカー名	数　量	単　価	金　額
	X線撮影関係				
	X線フィルム	フ　ジ			
1	17×14（半切）100枚入		5箱	43,360	216,800
	14×14（大角）　〃		30〃	35,660	1,069,800
	14×11（大四切）　〃		50〃	28,150	1,407,500
	10×12（四切）　〃		50〃	21,830	1,091,500
	10×　8（六切）　〃		20〃	14,920	298,400
	$8\frac{1}{2}\times6\frac{1}{2}$（八切）　〃		10〃	10,810	108,100

番号	品名及び仕様	メーカー名	数　量	単　価	金　額
	デンタルE（普通）25枚入		20箱	765	15,300
2	フィルムハンガー　14×17″	フジ	10	2,000	20,000
3	フィルムカセッテ　SA	〃	10	16,500	165,000
	〃　14×17（半切）				
9	フィルムマークセット　英字、数字各1組	〃	1式		10,000
10	防護手袋　0.35㎜	〃	1		10,500
11	防護衝立　木製一面衝立1.5㎜	〃	3	53,000	159,000
12	防護エプロン　0.55㎜	〃	1		40,000
13	防護メガネ　プラスチック製	〃	1		1,800
	臨床検査関係				
	（機　器）				
1	a）光電比色計　AE－11型	エルマ	1		140,000
	標準附属品及び予備電球3ヶ付				
	b）光電光度計　ホットユニック5x	アタゴ	2	164,000	328,000
	標準附属品及び予備電球3ヶ付				
2	手廻し遠心器　2本架	池本	1		12,000
3	VDRLローテーター　2026A3	〃	1		228,000
4	a）上皿桿秤　3175.5Kg	〃	1		28,500
	b）直示天秤　3115 SD－200	〃	2	360,000	720,000
5	ラボタイマー　120分	〃	2	15,000	30,000
6	a）分類計算器　2057MDT－120	〃	1		143,000
	b）手持数取器　2055	〃	18	800	14,400
7	ウオーターバス　1841	〃	3	99,600	298,800
	ステンレス水槽付				
8	ヘマトクリット遠心器　H－25	国産	1		170,000
9	尿比重屈折計　ユリコンS	アタゴ	10	14,300	143,000
10	化学天秤　3121 D－4 100g	池本	2	134,860	269,720
11	上皿自動秤　3171 10Kg	池本	3	5,500	16,500

番号	品名及び仕様	メーカー名	数　量
	（消耗品）		
1	ＰＨ試験紙　全域ロール	東　洋	１０
2	メスピペット　0.2 mℓ	シバタ	１５０
3	ゴム製ピペッター　２１１８Ａ	池　本	１００
4	安全ピペッター、標準型２１１６	シバタ	１０
5	駒込ピペット　２ mℓ	〃	２０
6	血球希釈ピペット（ＷＢＣ）ＪＩＳ	池　本	１５０
7	メスピペット先端目盛　1mℓ	〃	１５０
8	メスピペット先端目盛　5mℓ	〃	１００
9	メスピペット先端目盛　10mℓ	〃	１００
10	全量ピペット　２０４０　3mℓ	〃	５０
11	メスシリンダー２３５１　100mℓ	シバタ	６０
12	〃　1ℓ	〃	６０
13	〃　500mℓ	〃	１０
14	ビーカー　500mℓ	タイストン	５０
15	ビーカー　1ℓ	〃	５０
			¥1,043,660
16	エルマ試験管　３０３型用	エルマ	１００
17	滴瓶　８８８６　１２０ mℓ	池　本	１０
18	ビーカー　３００ mℓ	〃	１８
19	メスフラスコ　２３０６　１００ mℓ	シバタ	１００
20	ホーリン・ウー検糖管　２１４１	池　本	１００
21	カバーグラス　１８×１８mm　２００入	マツナミ	２２５
22	スライドグラス　水縁　５０入	〃	６００
23	マーカー用ダイヤチップペン	池　本	１０
24	ポリ瓶　細口　５００ mℓ	〃	５０
25	コニカルビーカー　３００ mℓ	〃	１００
27	ヘマトクリットキャピラリー　１００本入 ドラモンド、プレイン	〃	１０００
28	ヘマトクリットキャピラリー　１００本入 ヘパリン	〃	１０００
29	オリンパスＫＨＳ用予備電球	オリンパス	１０
30	血球測定スタンド　１０本立	池　本	５
			¥1,532,070
31	血沈測定器	〃	１００
32	スパーテル	〃	１０

番号	品名及び仕様	メーカー名	数　量
33	デシケーター　8871　21cm	池　本	2
34	ウイントローブ管	〃	100
35	ピンセット　27A	〃	20
36	メス　27C	〃	20
38	ニクロム線　0.5φ　5m	〃	1
39	白金線挾み	〃	10
40	摩砕フラスコ　100mℓ	〃	50
41	斜位型試験管台　40本立	〃	10
42	ステンレス試験管台　100本立	〃	10
43	〃　50本立	〃	10
44	ディスポシリンジ　12mℓ	〃	100
45	薬匙　ステンレス　3本組	〃	10
46	スポンジ栓　18㎜用	〃	300
			¥458,700
47	ペトリディッシュ　9cm	池　本	40
48	ブンゼンバーナープロパン用	〃	20
49	ビューレットスタンド　2ケ用　挾み付	〃	18
50	遠心チューブ　10mℓ目付	〃	200
51	三角フラスコ　500mℓ	シバタ	10
52	〃　1ℓ	〃	10
53	メスフラスコ　100mℓ	池　本	10
54	〃　1ℓ	〃	10
55	ガラスロート　210φ	〃	10
56	トーマ血球計算盤　並	エルマ	20
57	エルマ血球用カバーグラス　22×24　50入	〃	50
58	ザーリー血色素計	〃	10
59	ザーリー測定管	〃	100
60	アルコールランプ　中	池　本	10
			¥1,088,400
61	マグネット攪拌子　テフロン30㎜L	池　本	10
62	マグネット攪拌子　テフロン50㎜L	〃	10
63	ダイヤモンドスライドマーカー　ダイヤモンドペン　7258	〃	10
64	冷蔵庫　230ℓ　MPR−210　BCG 保存用	サンヨー	2
			¥501,550
		合計	¥4,624,380

番号	品名及び仕様		メーカー名	数　　量
	（薬品類）			
	ルフトゲン	10Tab×20	中外製薬	10
	バリウムサルフェイト	500g入	〃	50
	テレパーク	6Tab×5	日本商事	20
	ナイアシンテストペーパー	20検体	第一化学	20
	PAS	0.25g×1000T	田辺製薬	1,000
	INH　イスコチン	100mg 5000T	第一製薬	60
	BCG	20doses/amp	日本BCG	5,000
	エタンブトール	250mg/tab	科研製薬	120,000

合計　¥10,624,000

（注）　上記に加え抗結核剤（リファンプシン）を10,000カプセルを約500千円にて現地調達（インド製）した。

(8) 昭和５８年度供与機材リスト

品　名　仕　様	数　量
（検査器材）	
1. 喀痰ケース、２５cc、ポリエステル	5,０００ケ
2. 採尿コップ、円筒、口付、硬質ガラス	１００ケ
3. 光電比色計（分光光度計）、１００－１０、日立	１式
波長範囲：２００～９００㎜（紫外可視用）	
バンド巾：７㎜	
波長表示、測光表示：回転ドラム目盛	
測定レンジ：０～１００％Ｔ、 0～1 / 0～2 >Abs	
波長精度：±１.５㎜	
光源：Ｄ２ランプ、Ｗランプ	
測定値表示メーター、標準付属品付	
4. 自動噴霧器　１ℓ	３台
真鍮製、ハンディタイプ	
径約９１㎜×高約２９５㎜	
	小計　８３７,１５０

（車　輛）	
1. ターセル	１台
（Ｘ線関係）	
1. Ｘ線フィルム、１４″×１４″　５０枚入	１０
2. 〃　１２×１５、１００枚入	５
3. 〃　１１×１４、　５０枚入	１２０
4. 〃　１０×１２　〃	１００
5. ８×１０　〃	７０
6. ６½×８½　〃	３０
7. 歯科用　３×４、１００入	３
8. 現像液　１０ℓ用	５０
9. 定着液　１０ℓ用	５０
	小計　３,０６７,８５０

（以上車輛を除く取扱商社風雲堂）

（薬品関係）

1	硫酸ストレプトマイシン　1.０g／v	明治製菓	100,000
2	同上用蒸留水　５mℓ×５０Ａ	扶　桑	400
3	ＩＮＦ錠（イスコチン）　１００mg　５０００Ｔ	第一製薬	400
4	ＰＺＡ散（ピラマイド）　５００g	三　共	50
5	ＥＢ錠（エブトール）　２５０mg／Tab	科研製薬	100,000

番号	品名及び仕様	メーカー名	数　量
1	クレゾール石けん液　１８ℓ入	吉田製薬	10
2	硫酸　１８ℓ一級	和光純薬	10
3	エタノール　１８ℓ	〃	10
5	Ｌグルタミンナトリウム　５００g	〃	5

小計　１５,８８０,０００

（注）　上記に加え、抗結核剤（リファンプシン）を１００,０００カプセルを約5,５００千円にて現地調達（インド製）した。

(4) 昭和５９年度供与機材リスト

番号	品名及び仕様	メーカー名	数　　量
	イスコチン	第　一	１００万錠
	エブトール	科　研	５万
	硫酸ストレプトマイシン	明　治	５万
	テレバーク	日　商	１００
	ルフトゲン	中　外	１０
	ウログラフィン	シェーリング	２０
	ＳＩＭ培地	栄　研	５
	変法ＴＧＣ培地	日　水	２０
	トリプトソーヤ寒天培地	〃	５
	ＧＡＭ寒天培地	〃	１０
	ジフテリア菌分離用培地	〃	５
	ＳＭ培地	〃	５
	ＳＳ寒天培地	〃	１０
	ＰＨＬ寒天培地	栄　研	５
	クリグラー確認培地	〃	１０
	ＴＣＢＳ寒天培地	〃	１０
	スタヒロコッカス培地１１０	〃	１０
	ＸＶディスク用培地	〃	５
	ＸＶマルチディスク	〃	５
	チトクロームディスク	〃	５
	バシトラシン・オプトシン・ディスク	〃	５
	ナイアシンテストペーパー	北　研	２０
	ウサギプラズマ	栄　研	２０
	カルチャー・ボトル	〃	１０
	リン酸一カリウム	関　東	５
	プロピレングリコール	〃	２
	Tween 80	〃	２
	流動パラフィン	〃	２
	バルビタール	〃	５
	バルビタール酸ナトリウム	和　光	５
	ポンソーＲ	関　東	１０
	トリクロロ酢酸	和　光	５
	ピリルビン	〃	２０
	ピクリン酸	関　東	１０
	2.3－ブタンシオン－2.オキシウム	〃	１０
	チオセシカルバジド	〃	１０

番号	品名及び仕様	メーカー名	数　　量
	2,4－ジニトロフェニルヒドラジン	関　東	5
	リン酸二ナトリウム	〃	5
	リン酸カルシウム	〃	5
	4アミノアンチピリン	〃	10
	標準緩衝液ＰＨ　4.01	和　光	5
	〃　ＰＨ　6.86	〃	5
	〃　ＰＨ10.02	〃	5

合計　¥10,238,000

（注）　このほかＲＦＰ30,000カプセル（インド製）を現地調達。

（検査機材）

1	喀痰容器（Sputum Container） ＴＥ 2001　ポリカップ	東京衛生材料研究所	
2	顕　微　鏡 オリンパス　ＨＳＣ－４ＲＥ 標準付属品付（対物レンズ４Ｘ、１０Ｘ、４０Ｘ、１００Ｘ、接眼レンズ１０Ｘ） プラスチック収納箱付 特別付属品、複式メカニカルステージ付	オリンパス	
3	電圧スタビライザー ＴＡ－23130－Ｊ　入力電力230VI20%　出力電力230V 容量　３０ＫＴＡ	松永製作所	
4	発　電　機 ＥＧＫ－２０００Ｔ １１５Ｖ、２３０Ｖ切り換可	ホンダ	
5	レンドゲン用フィルム 17"×14"　50枚入 14"×14"　100 〃 11"×14"　100 〃 10"×12"　100 〃 8"×10"　100 〃 $6\frac{1}{2}\times8\frac{1}{2}$　100 〃 デジタル用（3×4　）100 〃	 富　士 〃 〃 〃 〃 〃 〃	
6	現　像　液　20ℓ入	〃	

小計　¥7,428,950

番号	品名及び仕様	メーカー名	数　量
7	定　着　液　　２０ℓ入	富　士	５０
8	増　感　紙　ＭＳ　１７″×１４″	〃	５
	〃　　〃　１０″×１２″	〃	１０
	〃　　〃　８″×１０″	〃	５
9	紫外線螢光管	池本理化	１０
	細菌灯用１００Ｖ、１５Ｗ　ＧＬ－１５		
	ソケット付		
１０	三角フラスコ　　３００mℓ	パイレックス	２０
	〃　　５００mℓ	〃	２０
１１	シリコンゴムスポイト　２cc	池本理化	１００
	〃　　５cc		５０
１２	アキュペンサー	〃	５
	№２１２４　１　専用ボルト付　１ℓ用		
１３	プラスチックシャーレ		１００
	ディスポーザブル　滅菌済		
	９０ø×１５㎜　１０枚入		
１４	アルミホイル	〃	３０
	料理用　２５cm×８m		
１５	ラボ用メンディングテープ　#８１０　25㎜×30m	スコッチ	１０
	〃　　18㎜×30m	〃	１０

小計　¥７３６,７５０

１６	ラボシーリング　25.4㎜×32.9m	池本理化	
１７	パラフィルム　シール用　４″×１２５Ft	American Con Company	
１８	メスフラスコ　　２００mℓ	シバタ	
	〃　　２５０mℓ	〃	
	〃　　５００mℓ	〃	
	〃　　１０００mℓ	〃	
１９	メスシリンダー　　５０mℓ	〃	
	〃　　２５０mℓ	〃	
２０	マイクロピペット　４７００　２０mℓ	エッペンドルフ	
	〃　　５０mℓ	〃	
	〃　　１００mℓ	〃	
	〃　　５００mℓ	〃	
２１	マイクロピペット用ディスポチップ	池本理化	
	～１００mℓ　１,０００入	〃	
	１００～１０００mℓ　〃	〃	

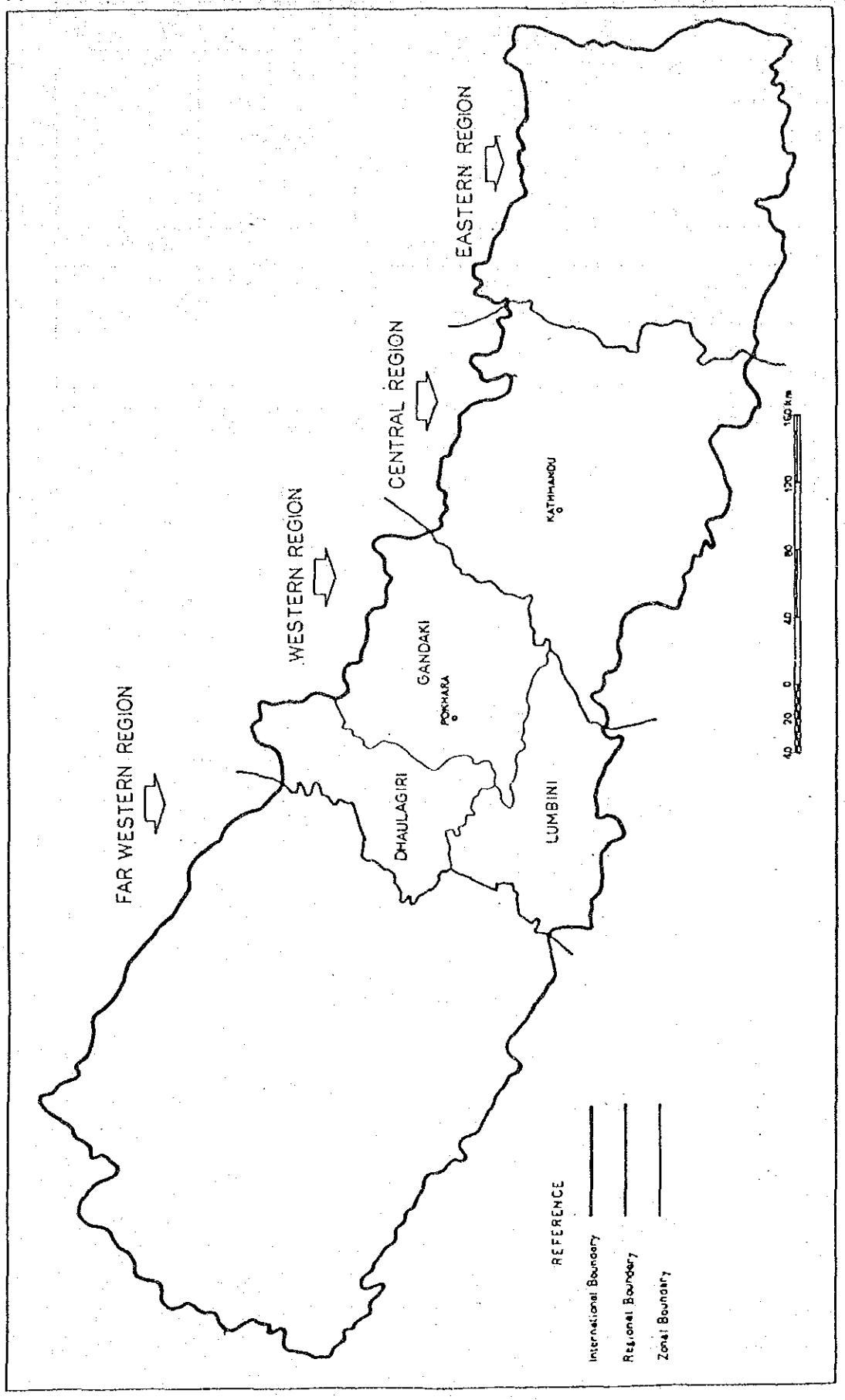
番号	品名及び仕様	メーカー名	数　　量
22	乾　燥　棚　　DS－C	池本理化	1
23	Phメーター　F－8	堀　　場	1
24	セパラックス セルロース　アセテート膜 6×22cm　50枚入	池本理化	2

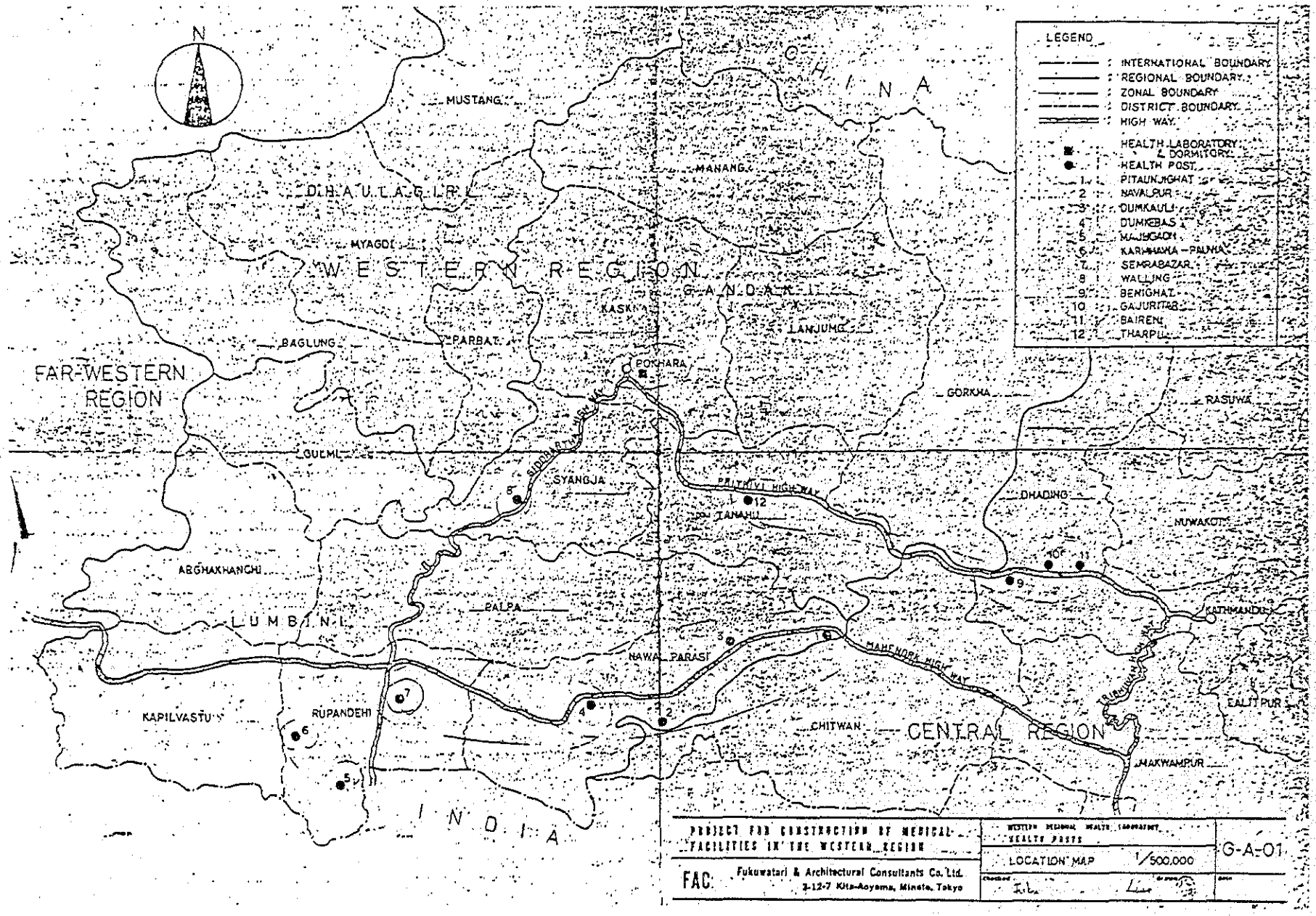
小計　¥1,108,600

25	指導用アタッチメント付顕微鏡 BHS－313　バルブ3ケ付 双眼アタッチメント　BH2－DO－1 バルブ　3ケ	オリンパス	1

小計　¥975,700

資料 4　無償資金協力にて建設された西部地域衛生研究所及びヘルスポストの概要




N
LEGEND
INTERNATIONAL BOUNDARY
REGIONAL BOUNDARY
ZONAL BOUNDARY
DISTRICT BOUNDARY
HIGH WAY
HEALTH LABORATORY & DORMITORY
HEALTH POST
1 PITAUNJIGHAT
2 NAVALPUR
3 DUMKAULI
4 DUMKEBAS
5 MAJIGADHI
6 KARMAWA-PALWA
7 SEMRABAZAR
8 WALLING
9 BENIGHAT
10 GAJURITAR
11 BAIRENI
12 THARPU
CHINA
MUSTANG
MANANG
DHAULAGIRI
MYAGDI
WESTERN REGION
GANDAKI
KASKI
LANJUNG
BAGLUNG
PARBAT
POKHARA
FAR-WESTERN REGION
GORKHA
RASUWA
GULMI
SIDDARTHA HIGH WAY
SYANGJA
PRITHVI HIGH WAY
TANAHU
DHADING
NUWAKOT
ARGHAKHANCHI
LUMBINI
PALPA
KATHMANDU
NAWA PARASI
MAHENDRA HIGH WAY
TRIBHUVAN HIGH WAY
LALITPUR
KAPILVASTU
RUPANDEHI
CHITWAN
CENTRAL REGION
MAKWANPUR
INDIA
PROJECT FOR CONSTRUCTION OF MEDICAL FACILITIES IN THE WESTERN REGION
FAC: Fukuwatari & Architectural Consultants Co. Ltd. 3-12-7 Kita-Aoyama, Minato, Tokyo
WESTERN REGIONAL HEALTH DEPARTMENT
HEALTH POSTS
LOCATION MAP 1/500,000
G-A-01

1. GENERAL

1-1 OUTLINE OF WORK

a) The project covers the following facilities

1) WESTERN REGIONAL HEALTH LABORATORY

i) LABORATORY

ii) DORMITORY

2) HEALTH POSTS

(No.1 ∿ No.12, 3 buildings for each Health Post)

a-1-i) LABORATORY (with a generator cottage)

1 CLASS OF WORK	NEW CONSTRUCTION
2 LOCATION	POKHARA CTY, GANDAKI ZONE, WESTERN REGION, THE KINGDOM OF NEPAL
3 BUILDING AREA	APPROX. 774.50 M^2
4 FLOOR AREA	GROUND FLOOR 581.04 M^2 FIRST FLOOR 563.69 M^2 TOTAL FLOOR AREA 1144.73 M^2
5 STRUCTURE	REINFORCED CONCRETE RIGID FRAME CONSTRUCTION WITH STEEL ROOF TRUSS

a-1-ii) DORMITORY (with a electric cottage)

1 CLASS OF WORK	NEW CONSTRUCTION	
2 LOCATION	POKHARA CTY, GANDAKI ZONE, WESTERN REGION, THE KINGDOM OF NEPAL	
3 BUILDING AREA	APPROX.	412.62 M^2
4 FLOOR AREA	GROUND FLOOR	303.07 M^2
	FIRST FLOOR	285.76 M^2
	TOTAL FLOOR AREA	588.83 M^2
5 STRUCTURE	REINFORCED CONCRETE RIGID FRAME CONSTRUCTION WITH STEEL ROOF TRUSS	

a-2) HEALTH POSTS (No.1~No.12)

1 CLASS OF WORK	NEW CONSTRUCTION		
2 LOCATION	NO	LOCATION	REMARK
	1	PITAUNGE GHAT, NAWAL PARASI, LUMBINI WESTERN REGION	BUILDING TYPE-A
	2	CHORMARA (KALUWA), DITTO	
	3	DUMKAULI, DITTO	
	4	DUMKIBAS DITTO	
	5	MAJGAWA, RUPANDEHI, LUMBINI, WESTERN REGION	
	6	KARMAWA DITTO	
	7	SEMARA DITTO	
	8	WALLING GARUNG, SYANGJA GHYANGLING, GANDAKI WESTERN REGION	BUILDING TYPE-B
	9	BENIGHAT, DHADING, BAGMATI, CENTRAL REGION	
	10	GAJURI TAR DITTO	
	11	BAIRENI DITTO	
	12	THARP, TANAHU, GANDAKI WESTERN REGION	
3 BUILDING AREA	①	H.P.-(AorB)-1	99.96 M^2
	②	H.P.-(AorB)-2	95.12 M^2
	③	H.P.-(AorB)-W.C.	6.30 M^2
	④	TOTAL (1 + 2 + 3)	201.38 M^2
	⑤	GRAND TOTAL (4 x 12)	2,416.56 M^2
4 FLOOR AREA	①	H.P.-(AorB)-1	83.34 M^2
	②	H.P.-(AorB)-2	79.20 M^2
	③	H.P.-(AorB)-W.C.	4.61 M^2
	④	TOTAL (1 + 2 + 3)	167.15 M^2
	⑤	GRAND TOTAL (4 x 12)	2,005.80 M^2
5 STRUCTURE	TYPE-A: BRICK MASONRY CONSTRUCTION		
	TYPE-B: BRICK MASONRY CONSTRUCTION		

APPENDIX-1
H.Pに供与された
機材のリスト

Medical tools and equipments shall be as, or equal to follows.

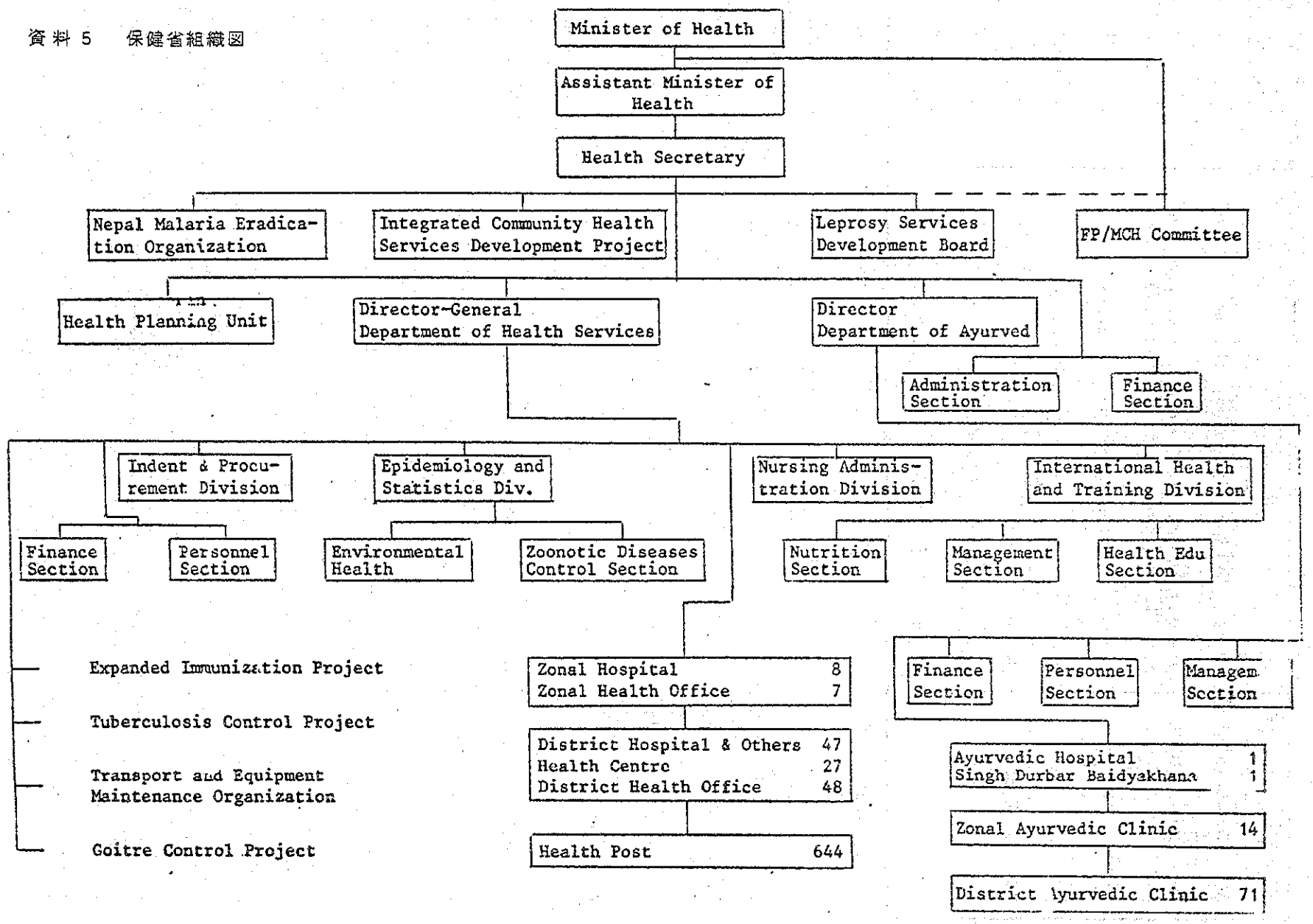
(* The cataloque number of Matsuyoshi & Co., Ltd.)

No.	*Catalogue No.	Description	Quantity
1	MC-2045	One-Basin Stand, 34cm. diameter basin, stainless steel	1 set
2	MC-2180	Sphygmomanometer, mercurial, calibration: 300mm. complete with velcro cuff, bulb and valve, in light metal case. "OKOSE 300"	1 set
3	MC-2855	Instrument Sterilizing Tray, stainless steel, size: 240x180x35mm. "Mysco"	2 sets
4	"	- do. - size: 210x150x35mm. "	2 sets
5	MYSCO No.170	Dressing Jars, Ø12.5x17.5cm. (2 Ls) "	2 sets
6	MC-2258	Hand Lamp, Koike's, speculum, otoscope, tongue blade and holder, transilluminator and extra lamp. "Mysco"	1 set
7	MC-2237	Tongue Depressors, stainless steel "	10 pcs.
8	MC-2236	Percussion Hammer, Ohnuki's with needle and brush. "	1 pce.
9	MC-2231	Stethoscope, double head type "Myscope"	1 set
10	MC-2190	Clinical thermometer, flat type C "TERMO"	10 pcs.
11	MC-2330	Pus Basin Set, stainless steel, set of 3 "Mysco"	2 sets
12	JMC-4-11522	Mouth Gag, Esmarch's "	1 pce.
13	MC-2447	Minor Surgical Operationg Set, in metal case "Mysco"	1 set
14	MC-2878	Surgical Gloves, No.6.5 and No.7.5 "Sanko" box of 20 pairs	2 boxes
15	MC-2108	Healthmeter, 100kgs "KUBOTA DELUX"	1 set
16	MC-2116	Tape Measure, line, with plastic base, graduated in 2m. "Mysco"	3 pcs.
17	MC-2410	Hypodermic Glass Syringes, heat resistant glass, Luer glass center tip, 2cc. "MY"	1 doz.

No.	*Catalogue No.	Description	Quantity
		Hypodermic Glass Syringes, heat resistant glass, Luer glass center tip, 5cc. "MY"	1 doz.
		- do. - 10cc. "	1 doz.
		- do. - 20cc. "	1 doz.
		- do. - 50cc. "	1 doz.
		- do. - 100cc. "	1 doz.
18	MC-2410	Tuberculin Glass Syringes, 2cc. "	1 doz.
19	MC-2433	Intravenous Injection Needle, 1/1, 1/2 and 1/3 "	3 gross
20	MC-2433	Needle for Tuberculin "	2 gross
21	MC-2680	Glycerin Enema Syringe, 50cc. "	2 pcs.
22	MC-2835	Jar for Forceps "	1 pce.
23	MC-2700	Sterilizing Jar Stand, rotable, with 4 glass jars. "Mysco"	1 set
24	JMC-5-18200	Nelaton Urethral Catheter, No.3-12 "HEALTH"	5 doz.
25	MC-2912	Ice Bag, box of 10 pcs. "Apollo"	1 box
26	MC-2920	Hot Water Bottle "Riken"	1 set
27	MIC-2840	Undine Glass, amber color "Mysco"	1 pce.
28	MC-2714	Eye bath basin "	1 pce.
29	MC-2847	Sterilizer Forceps, serrated jaws "	1 pce.
30	MC-2762	Wide Mouth Bottle, white, 250ml. "	5 pcs.
31	MC-2762	Wide Mouth Bottle, brown, 250ml.	5 pcs.
32	MC-2445	Venous Congestion Belt, rubber tube and clip. "	2 sets
33	JMC-5-15870	Siebold Umbilical Scissors, stainless steel, 15cm. long. "Mysco"	1 pce.
34	MC-2845	Instrument Holding Forceps, stainless steel, three-prong "Mysco"	1 pce.
35	JMC-5-15005	Cusco's Vaginal Speculum, large "	1 pce.

No.	*Catalogue No.	Description	Quantity
36	JMC-5-15005	Cusco's Vaginal Speculum, medium "Mysco"	1 pce.
37	JMC-5-10306	Disposable Umbilical Cord Clamp, plastic, sterile and pyrogen-free, box of 50 pcs.	1 box
		Tooth Extracting Forceps, Interior	1 pce.
		- do. - Posterior	1 pce.
38	MC-2285	Dental Mirror	2 pcs.
		Needle Dental, 25Gx1"	1 gross
		Dental Glass Syringe, Luer-Lock, 2cc.	5 pcs.

資料 5　保健省組織図


Minister of Health
Assistant Minister of Health
Health Secretary
Nepal Malaria Eradication Organization
Integrated Community Health Services Development Project
Leprosy Services Development Board
FP/MCH Committee
Health Planning Unit
Director-General Department of Health Services
Director Department of Ayurved
Administration Section
Finance Section
Indent & Procurement Division
Epidemiology and Statistics Div.
Nursing Administration Division
International Health and Training Division
Finance Section
Personnel Section
Environmental Health
Zoonotic Diseases Control Section
Nutrition Section
Management Section
Health Edu Section
Expanded Immunization Project
Tuberculosis Control Project
Transport and Equipment Maintenance Organization
Goitre Control Project
Zonal Hospital 8
Zonal Health Office 7
District Hospital & Others 47
Health Centre 27
District Health Office 48
Health Post 644
Finance Section
Personnel Section
Managem. Section
Ayurvedic Hospital 1
Singh Durbar Baidyakhana 1
Zonal Ayurvedic Clinic 14
District Ayurvedic Clinic 71

資料 6

NEPAL IN FIGURES

1. Total area of the Kingdom ..... 147181 sq kms.
   Population*(1) 1981
   Population 15022839
   Male 7695336
   Female 7327503
   Households 2585154
   Literate 23.3%
   Population growth rate per-annum 2.66%
   Population density per sq Km. 102.1

2. Vital Statistics*(2) 1981/82
   Births per 1000 population 42
   Deaths per 1000 population 19
   Infant mortality per 1000 live birth.....152
   Life expectation at birth years 45
   Male 47.5
   Female 45.5
   Total fertility per woman 6.3

3. Family Planning*(2) .....

	1980/81	1981/82	1982/83
Acceptors of contraceptions (couples)	216	223	185
MCH Services to mothers	57	75	97
" " children	177	223	259
Small pox vaccination	7	-	-
B.C.G. (in times)	33	35	30
D.P.T. (new)	66	45	34

4. Gross Domestic Product*(1)
   (Rs. million)

	1980/81	1981/82+	1982/83++
G.D.P. at current prices	27307	30265	33621
Agriculture	15679	16975	17942
Non-Agriculture	11628	13290	15679
GDP at constant prices (at 1974/75 price)	20158	20926	20642
Agriculture	12066	12492	12175
Non-Agriculture	8092	8434	8467

Note:-+Revised estimate & ++ Provisional estimate.

5. Sector Wise GDP of Nepal .....

(Rs. million)	1980/81	1981/82 Revised estimate
Agriculture	15510	16792
Mining	58	68
Manufacturing	1049	1189
Electricity Gas & Water	67	90
Construction	1974	2537
Trade & Restaurants	953	1070
a) Trade	(832)	(932)
b) Restaurant	(121)	(138)
Transport	1889	1992
Financing	2077	2351
Community & Health Services	1889	2174
Total Factor Cost	25466	28263
Indirect Taxes (net)	1841	2002

a) Agriculture	(169)	(183)
b) Others	(1672)	(1819)
GDP at current market prices	27307	30265

6. Government Budget *(3) Rs.millions

	1980/81 Actual	1081/82 Actual	1982/83 Estimate
Expenditure	4092.3	5361.3	9187.2
Regular	1361.2	1634.4	2228.4
Development	2731.1	3726.9	6958.8
Revenue	2419.2	2679.5	4042.5
Foreign Aid	868.9	993.3	1608.3
Overall Deficit (-)	804.2	1688.5	3536.4

7. Foreign Aid Comt.Rs.millions

	Year	Bilateral	Multilateral	Total
Grants	1980/81	1815.8	449.8	2265.6
	1981/82	1144.7	172.0	1316.7
Loan	1980/81	100.0	1647.0	1747.0
	1981/82	411.3	1158.1	1569.4

8. Production

Agriculture*(5.3)		1980/81	1981/82	1982/83Est.
Food Grants				
1. Paddy	A	1275	1296	1265
	P	2464	2560	1833
2. Maize	A	457	475	511
	P	743	751	718
3. Wheat	A	391	400	484
	P	477	526	657
4. Barley	A	27	27	24
	P	23	23	21
5. Millet	A	122	122	129
	P	121	121	121
Cash Crops				
1. Sugar Cane	A	24	25	25
	P	483	590	617
2. Oil Seed	A	122	114	110
	P	77	79	69
3. Tobacco	A	7	7	10
	P	5	5	7
4. Jute	A	52	35	24
	P	59	43	31
5. Potato	A	50	52	59
	P	275	320	373

A - Area in thousand hectares
P - Production in thousand metric tons.

9. Manufacturing*(14)

	Unit	1980/81	1981/82
Jute Goods	m.t.	16264	15725
Sugar	"	12020	21154
Cigarette	(00,000)	18113	28493
Matches	(000)gross	626	760
Shoes	pairs	81845	61450
Tea	m.t.	535	642
Cement	"	32326	30378
Soap	"	2631	3050
Brick and Tile**	(000)pieces	25642	20900
Plywood	(000)sq.ft.	4149	4647

**Production of Brick and Tile Factory only

10. Irrigation*(8) ..... hectares
At the end of 4th plan 103056
At the end of 5th plan 198481
Additional area convered by irrigation (1980/81) 9375
(1981/82) 14388
(1982/83) 20645

(Under Irrigation Department only)

11. (Education*(9)

Year (September)	No.of School units			No.of Teachers thousands			No.of Students thousands		
	P	L	S	P	L	S	P	L	S
1980 ...	10130	3501	785	28	12	5	1068	391	121
1981 ...	10628	2786	918	29	12	5	1388	170	144
1982 ...	10912	2964	1031	32	11	6	1475	200	170

P - Primary, L - Lower Secondary, S - Secondary

12. No. of Students in Higher Education :

Educational Institute	1980/81	1981/82	1982/83+
Education	2826	3870	4019
Medicine	1293	1163	1053
Forestry	277	412	445
Agriculture	1040	914	1306
Engineering	1504	1491	1314
Science	4043	6903	7917
Humanities & Social Science	15715	26337	20619
Management	9182	15406	12195
Law	2066	3214	2654
Sanskrit	504	586	548

Note :- *In Govt. Campus only.

13. Tourism*(6) thousands

	1980	1981	1982
Incoming Tourists	163	162	175
By Air	139	142	153
	86%	88%	87.5%
By Land	24	20	22
	14%	12%	12.5%
Annual Rate of Change	+0.4%	-0.8%	+8.5%
Gross Foreign Exchange From Tourism (in U.S.$)	44716	51831	38149
Annual Rate of Change	24.5%	18.9%	-19.9%

14. Electricity*(11)(000MWH)

	1980/81	1981/82	1982/83
Production and Imports	229	274	347
Consumption			
Domestic	70	91	119
Industrial	49	68	82
Commercial	20	18	21
Others	8	8	8
Export to India	4	5	6
Power losses	78	84	110

15. Postal Services*(10)

	1980/81	1981/82	1982/83
Total Post Offices	1412	1548	1646
G P O	1	1	1
District Post Offices	74	74	74
Sub - Post Offices	302	319	338
Additional Post Offices	1035	1154	1233

16. Health Services*(13)

	1980/81	1981/82	1982/83
Hospitals	73	73	75
Hospitals Beds	2679	2679	2993
Health Post	583	644	744
Health Centre	27	27	27
Ayurvedic Service Centre	85	95	113
No. of Doctors	562	n.a	678
No. of Nurses	405	n.a	506
No. of A.N.M.	1505	n.a	1550
Population / Bed	5607	5607	5019
Population / Doctor	26727	n.a	22158

Note :- n.a. indicate "not available"

17. Transport *(4)

Km.	Mid July 1980	Mid July 1981	Mid July 1982	Mid July 1983
Total Roads	4940	5021	5270	5452
Black Topped	2044	2167	2322	2482
Gravelled	564	703	719	765
Fair Weather	2332	2151	2229	2205
Population/1Km.of Road	2844	2869	2854	2755

18. Consumer Price Indices *(7)

Base Year 1972/73=100

	1980/81 A	1980/81 B	1981/82 A	1981/82 B	1982/83 X
National	199.9	204.8	221.9	224.0	254.0
Kathmandu	209.5	203.7	231.8	224.9	257.5
Hills	193.9	202.7	214.5	226.5	250.2
Terai	195.3	203.1	218.8	220.7	252.6

A - Food and Beverages. B - Non-food & Services, X-Overall Index.

19. Monetary Survey *(7) Mid July (Rs. million)

	1980	1981	1982	1983
Money Supply	2830.4	3207.8	3611.5	4348.9
Currency	1799.3	2065.7	2436.7	2752.0
Demand Deposit	1031.1	1142.1	1174.8	1596.9

20. Banking *(7)

	Mid July 1980	Mid July 1981	Mid July 1982	Mid July 1983
No. of Commercial Bank Branches (in Unit)	241	263	284	311
Population Per Bank Branches(in thousands)	58	54	53	48
Total Credit and Investment (Rs. million)	3181.2	3935.4	3729.0	4171.8
Total Credit (Excluding) Claims on Govt.)(Rs.million)	2798.0	3603.1	3150.6	3316.7
Total Deposit(Rs. million)	3261.5	3981.5	4729.2	5551.8
Current	875.4	1036.6	1062.0	1333.1
Saving	571.2	716.6	877.4	1000.6
Fixed	1814.9	2228.3	2789.8	3218.1
Per Capita Deposit(Rs.million)	232.8	278.3	314.9	369.6
Per Capita Credit(Rs.in Unit)	227.07	275.09	248.3	277.8

21. Total Foreign Trade Balance of Nepal *(12) (in 000 Rs.)

Fiscal Year	Exports	Imports	Balance (-)
1980-81	1665328	4594140	2928812
1981-82	1473637	4806419	3332782
1982-83 (estimate)	1131040	6106342	4975302

22. Percentage Composition of the Foreign Trade of Nepal *(12,7) (Rs.thousand)

Exports	1980/81	%	1981/82	%	1982/83 estimate	%
India	992390	59.6	994348	67.5	829748	73.4
Overseas	604659	36.3	462307	31.4	289692	25.6
Tibet	68279	4.1	16982	1.1	11600	1.0
Imports						
India	2179047	47.4	2280877	47.4	2519961	41.3
Overseas	2397811	52.2	2516797	52.4	3564086	58.4
Tibet	17282	0.4	8745	0.2	22295	0.3

Note : Revised Trade with Tibet, and autonomus region of China is recorded only through Tatopani Custom Office.

23. Publication data Sources *

1. Central Bureau of Statistics
2. Nepal Family Planning
3. Ministry of Finance
4. Department of Roads
5. Food and Agriculture Marketing Services Department
6. Department of Tourism
7. Nepal Rastra Bank
8. Department of Irrigation and Meteorology
9. Ministry of Education and Culture and T.U.
10. Department of Postal Service
11. Department of Electricity
12. Trade Promotion Centre
13. Department of Health Services
14. Department of Industry

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