

G) Result of the Second Evaluation Workshop

Program of Evaluation Workshop 2 Project: Strengthening of Food Sanitation Activities

9:00 – 16:30, Friday, August 7, 1998 at Room 5015 of DMSc, Nonthaburi

1. Objectives

Through the workshop, the evaluation team, the project staff and other persons concerned will:

- share clear understanding on what to evaluate;
- jointly assess the project's efficiency, effectiveness, impact, relevance and sustainability;
- exchange ideas on means to fully sustain the effects of the project .

2. Expected output documentation

- Format 2: a table of all evaluation items to be examined

3. Participants

14 persons from DMSc

7 persons from FDA

4 persons from Japanese Evaluation Team (excluding the consultant);

4 Japanese experts to the project;

1 person from DTEC as observer;

1 Japanese experts in the Department of Health, Ministry of Public Health as observer.

Moderator: Takako Haraguchi, PCM consultant, Member of the Japanese Evaluation Team

4. Program

- Review of the result of the first workshop
- Group work to discuss the opinions to each evaluation items
- Plenary session to share the result of group work and further discussion

Result of the Second Evaluation Workshop, August 7, 1998. (Second Draft)
Project: Strengthening of Food Sanitation Activities

Format 2. Items to be examined

Grading for each question: A: Good B: Fair C: Poor
 Overall judgement on each of five evaluation criteria: Very High / High / Fair / Low / Very Low

Areas	Items to be examined	Result (Response to each question)	Comments
1. Efficiency 1.1 Degree of achievement of outputs Efficiency: High	1.1.1 To what degree has the output 1 "food control activities are strengthened" been achieved?	B - Small-scale inspection must cover more area and need longer period of time to develop themselves. - Need better planned and continuous activities. - Need long-term evaluation. - Need more method development to cover testing items in food safety control.	Japanese Evaluation Team (the Team) confirmed the result. (Ditto for blank boxes)
	1.1.2 To what degree has the output 2 "hygiene management by food manufacturers become sufficient" been achieved?	B - Should have had more time for developing hygiene management.	The Team graded A with limitation of scopes of area and food type.
	1.1.3 To what degree has the output 3 "consumers' awareness for food sanitation is improved" been achieved?	B+ - Should strengthen Provincial complaint networks, Extend public education through various channels and strengthen campaign in schools.	
1.2. Appropriateness of inputs (Have the timing, quantity and quality of inputs been necessary and sufficient to achieve outputs?)	1.2.1 Was the dispatch of experts timely and appropriate in terms of number of persons and field of specialization? - Long term - Short-term	Average score: B+ + Quantity: A + Quality: B+ - Timing: B- (quality) Sometimes field was different from request. C/P had to adjust what they learned to utilize in the needed field. Experts in requested specific field should be provided. (timing) Short-term expert schedule delayed (timing) At start of the project, arrangement was not smooth: two experts at the same time and could not attend both.	The Team confirmed the result and acknowledged the difficulty in recruiting experts.
	1.2.2 Was the provision of equipment/machinery timely and appropriate in terms of volume, cost and degree of utilization?	A	The Team confirmed that all the equipment fully contributed to technical transfer.

Areas	Items to be examined	Result (Response to each question)	Comments
	1.2.3 Was the counterpart training in Japan timely and appropriate in terms of number of persons and field of specialization?	B+ - Sometimes fields were overlapping in different courses. - Time was too short for middle-level staff. (DMSc) - Program should have been arranged in order to cover all area of interest (FDA).	The Team confirmed that the learned knowledge/ techniques were effectively transferred from the trained counterparts to other concerned staff.
	1.2.4 Was the local cost sharing by Japan appropriate?	DMSc: B+ FDA: B - Period time of budget release was too short (in 1997/98, signing of the Minutes of Meetings was delayed so C/P had to use the budget in three months).	The Team acknowledged the delay and the consequent difficulty in conducting activities.
	1.2.5 Was the assignment of counterpart personnel timely and appropriate in terms of number of persons and field of specialization?	Timing: B Number: A (DMSc), B(FDA) Field: A - Not all assigned counterparts could always attend the experts' activities because of routine and urgent workload. (DMSc)	
	1.2.6 Was the provision of project offices appropriate?	DMSc: A FDA: B (limited area and budget fund) Experts: A	
	1.2.7 Was the project operational cost funded adequately by the Thai side?	A	
1.3 Have the inputs been fully utilized?	1.3.1 Personnel	B+	
	1.3.2 Equipment/ machinery	A	
	1.3.3 Operational cost	A	
1.4 Has the project supporting system functioned well?	1.4.1 Joint Coordinating Committee	B- - Held three times (including Aug. 13, 98)	Appropriateness of JCC and SC must be measured not only by frequency but also by whether they were well proceeded on schedule.
	1.4.2 Steering Committee	B- - Held four times so far.	
	1.4.3 Support from other organizations concerned	A	

Areas	Items to be examined	Result (Response to each question)	Comments
2. Effectiveness 2.1 Degree of achievement of project purpose	2.1.1 To what degree has project purpose "food safety for consumers is ensured" been achieved?	B Positive (+) when compared to the plan Negative (-) when considering the whole country in scope.	
2.2 Contribution of outputs to project purpose achievement	2.2.1 To what extent has output 1 (strengthened food control activities) contributed to food safety?	B+ - Some microbiological analytical methods need more training - Only 70% of transferred methods are in current routine analysis. The rest are used as confirmation methods and some need more validation data. - More primary screening techniques are needed.	
Effectiveness: High or Medium	2.2.2 To what extent has output 2 (improved hygiene management by food manufacturers) contributed to food safety?	B+ - However, degree of contribution is difficult to determine. - Need more time to implement and evaluate.	
2.3 Inhibiting factors	2.2.3 To what extent has output 3 (improved consumers' awareness) contributed to food safety? 2.3.1 In case of non-achievement of project purpose, why not? 2.3.2 In case of non-achievement of project purpose, when is it likely to be achieved?	B+ - Contribution is still limited to certain areas. - Release of local budget is late. - PDM were established after the project had already started. - Experts were not dispatched as planned. Depends on 2.3.1	
3. Impact 3.1 Impact on project purpose level (from technical, institutional, environmental or other viewpoints)	3.1.1 Apart from food safety for consumers, what positive effects/impacts did the project planners intend to produce as a consequence of project outputs? 3.1.2 Is there any unintended positive situation produced by project outputs?	B+ + Surveillance system was strengthened. A + National Food Safety Program was strengthened in more systematic way. B + Increase in consumers awareness: B+ + More specific methods learned + Modified some methods of analysis, which have never been done before.	
Impact: High		B+ + Consumers alert to protect themselves. + Food quality and safety for consumers in foreign countries also ensured. + Thai food obtained good reputation among countries.	

Areas	Items to be examined	Result (Response to each question)	Comments
3-2 Impact on overall goal level (from technical, institutional, environmental or other viewpoints)	3.1.3 Is there any negative situation produced by project outputs? 3.2.1 To what degree has overall goal "illness by harmful food is reduced" been achieved? 3.2.2 Has the project contributed to reduction of food poisoning cases? 3.2.3 Apart from decrease in food poisoning, are there any positive side effects emerging as a consequence of improved food safety?	- Sometimes timetable for experts and counterparts did not meet. C (Not achieved at all as long as food poisoning is considered) - Project contribution is limited in terms of area and food type. - The number of food poisoning cases doesn't properly measure the project impact. - Migration of foreign workers - Increase in non-registered population. - NoI (See 3.2.1) - It takes long time to improve hygiene behavior. + Milk and water factories	The Team regards this idea as a problem in project implementation rather than an impact. The Team considers that the judgement is impossible because figures by cause are not available. The Team considers food poisoning caused by milk and water must be theoretically decreasing.
4. Relevance 4.1 Relevance of overall goal	4.1.1 Is overall goal (reduced illness by harmful food) still consistent with the policy of MPH? 4.1.2 Does overall goal still match the needs of Thai consumers? 4.1.3 Is overall goal consistent with Japan's aid policy? 4.1.4 In case of low relevance, what are the reasons?	A + Thailand is a tropical country and has faced the illness by harmful food for years. A + The problem still exists. A --	
Relevance: Very High	4.2 Relevance of project purpose	A + It is so clear that the project purpose is a direct responsibility of both DMSc and FDA. A + The project purpose meets the basic needs of Thai consumers. A + Well planned. + Appropriate activities.	

Areas	Items to be examined	Result (Response to each question)	Comments
4.3 Relevance of project design	4.2.4 In case of low relevance, what are the reasons? 4.3.1 Were the process and content of project planning appropriate?	--- B + Serves policy of MOPH and also consumers needs. - Should have had PDM before starting the project.	The Team considers that Thailand was the most relevant as counterpart country in Asia because it could spare enough human and material resources for food sanitation improvement. Also, the Team considers that the inclusion of both analytical and administrative organizations as counterparts was a right decision: otherwise, food safety would not have been achieved.
5. Sustainability 5.1 Organizational sustainability Sustainability: High	4.3.2 In case of low relevance, what are the reasons? 5.1.1 Is Thai government likely to continue policy support to FDA and DMSc respectively? 5.1.2 Is administrative and operational system of FDA and DMSc well enough to continue food sanitation activities? 5.1.3 Do FDA and DMSc have managing abilities? 5.1.4 (Question regarding the coordination of FDA and DMSc concerning food sanitation activities) 5.1.5 (Question regarding other relevant organizations)	- PCM was not introduced at project start. A for both FDA & DMSc B+ + Many agencies are involved. B+ for DMSc B for FDA - (DMSc) Transition of privatization (FDA) Provincial Health Offices (decentralized system) - Law enforcement (police, quarantine station, have mandate) B+ - Hot issues occurred without any focal point. - Need center to meet like JCC. B+ + National Food Safety Scheme	

Areas	Items to be examined	Result (Response to each question)	Comments
5.2 Financial sustainability	<p>5.2.1 Is operating expenses securely acquired to continue food sanitation activities in FDA, and what is the revenue source?</p> <p>5.2.2 Is operating expenses securely acquired to continue food sanitation activities in DMSc, and what is the revenue source?</p>	<p>A</p> <p>NGO (Private sector) Annual budget</p> <p>A</p> <p>Same as 5.2.1</p>	<p>The Team considers that financial sustainability should be low as long as JICA is needed as main supporter.</p> <p>However, the Team highly regarded both DMSc's and FDA's effort under the severe budgetary circumstances.</p>
5.3 Material and technical sustainability	5.3.1 Is the transferred technology properly utilized?	<p>B+</p> <ul style="list-style-type: none"> - Need more experience in practical application under consultation. <p>DMSc's vision of future:</p> <ul style="list-style-type: none"> • To expand its role to monitoring. For this, information and techniques on GLP are needed. • To function as a training center in future. For that, more techniques of analysis and management are needed. (e.g., microbiology (PCR), chemical analysis) <p>FDA 's vision of future:</p> <ul style="list-style-type: none"> • FDA has variety of responsibilities and they are under reorganization. • Food Regulation is in the process of amendment with emphasis on applying GMP/ GMPI/ HACCP system (QA system). <p>If the project is extended, FDA needs the followings:</p> <ul style="list-style-type: none"> • To make PDM at first, followed by setting of indicators and yearly follow-ups for the purpose of precise evaluation. • After the final evaluation, should conduct field survey (e.g., how consumers' attitudes have changed) and determine whether JICA budget is necessary. • Need on-schedule release of budget. 	<p>The Team confirmed that SOPs have been prepared for a number of techniques and the conditions for introduction of GLP are being met to certain extent.</p> <p>In addition, The Team considers that the learned techniques will be fully established if there are more opportunities for the counterparts to present and exchange the outputs of their activities, for example through seminars, meetings and publication of papers.</p>
	5.3.2 Are the trained staff members appropriately posted?	<p>B+</p> <ul style="list-style-type: none"> + Mostly appropriate. - Lack of equipment (DMSc) 	
	5.3.3 Are the facilities and equipment well maintained?	<p>B+ for DMSc A for FDA</p> <ul style="list-style-type: none"> - Lack of local technical services. - Lack of accessories 	

Implementation Record of Inputs

Prepared for the Joint Evaluation Study for the Project for Strengthening of Food Sanitation in the Kingdom of Thailand

The record covers the Thai and Japanese inputs implemented from September 1994 to August 1998.

- Inputs Summary Table
- Inputs by the Japanese Side
 1. List of experts dispatched from Japan
 2. List of machinery/ equipment provided by the Japanese Side
 3. List of counterpart personnel trained in Japan
 4. Allocation of expenses on local activities
- Inputs by the Thai Side
 5. Staff / personnel participating in project implementation
 6. Construction record of the new DMSc building
 7. Thai-side budget allocated to the project activities

Inputs Summary Table
(From September 1994 to August 1998)

JAPANESE SIDE

- | | |
|---------------------------------------|---|
| 1. Experts: | Long-term 10 persons
Short-term 24 persons |
| 2. Machinery / equipment: | Total 88,867,742 Baht
(324,358,092 Yen)
*Including requested amount for FY1998/99 |
| 3. Counterpart training in Japan: | Total 15 persons
(4 persons waiting) |
| 4. Cost sharing for local activities: | Total 19,470,000 Baht
(73,960,900 Yen)
*Including planned amount for FY1998/99 |

THAI SIDE

- | | |
|------------------------|--|
| 5. Staff / personnel: | Total 155 persons plus
Administrative staff
Secretaries
Drivers |
| 6. JICA Project Office | DMSc in Yod-se and FDA in Nonthaburi |
| 7. Budget | Total 61,984,891 Baht |

1. List of experts dispatched from Japan

Name of Experts	Field	Period
Long-term		
1. Dr. Shunsaku Minami	Team Leader	Sep/01/94 – Aug/31/96
2. Dr. Teruyuki Ishihara	Team Leader	Aug/18/96 – Aug/18/98
3. Mr. Kohei Nakajima	Coordinator	Aug/25/94 – Aug/24/97
4. Mr. Tetsuro Usui	Coordinator	Aug/14/09 – Mar/31/99
5. Dr. Tsuyoshi Ishimine	Microbiological analysis of food (DMSc)	Jan/10/95 – Jan/09/96
6. Mr. Kenichiro Taga	Microbiological analysis of food (DMSc)	Feb/04/97 – Jun/30/98
7. Mr. Hiroyuki Nagayama	Food sanitation administration (FDA)	Sep/01/95 – Aug/31/97
8. Mr. Makoto Kanie	Food sanitation administration (FDA)	Aug/18/97 – Mar/31/99
9. Mr. Toshiyuki Kawaguchi	Chemical analysis of food (DMSc)	Jan/23/96 – Jan/22/97
10. Ms. Mitsue Ota	Chemical analysis of food (DMSc)	Mar/17/98 – Mar/31/99
Short-term		
1. Dr. Hajimu Ishiwata	Food additives (DMSc)	Nov/16/94 - Feb/15/95
2. Dr. Yoshichika Hirahara	Food additives (DMSc)	Mar/15/95 - Apr/12/95
3. Prof. Dr. Tsutomu Maruyama	Microbiological analysis of food (DMSc)	Feb/08/95 - Mar/01/95
4. Dr. Yoshihiro Sugiyama	Microbiological analysis of food (DMSc)	Feb/02/96 - May/05/96
5. Mr. Masumi Hasegawa	GC/MS (DMSc)	Aug/08/95 - Oct/10/95
6. Ms. Mitsue Ota	GC/MS (DMSc)	Feb/07/97 - Apr/ /97
7. Mr. Kazumasa Kamakura	Contaminant/ GC, GC/MS (DMSc)	Mar/03/96 - May/05/96
8. Mr. Akihiko Kobayashi	Contaminant (DMSc)	Jun/24/96 - Aug/23/96
9. Dr. Yasuhide Tonogai	Food contaminant (DMSc)	Jul/07/95 - Oct/10/95
10. Mr. Toshio Ueno	Laboratory design (DMSc)	Jul/13/95 - Jul/26/95
11. Mr. Hiroshi Takimoto	Food control and standard (FDA)	Jul/31/95 - Aug/08/95
12. Dr. Kenji Sugawara	Food inspection (FDA)	Oct/27/95 - Nov 24/95
13. Dr. Kozo Hasebe	Inspection of milk and drinking water (FDA)	Jun/23/97 - Aug/22/97
14. Dr. Teruyuki Ishihara	Food surveillance system for food poisoning (FDA)	Jun/17/96 - Jun/29/96
15. Mr. Yoichi Sekiguchi	Water Analysis (DMSc)	Aug/19/96 - Oct/18/96
16. Dr. Katsuhiko Jinbo	Antibiotic residues (DMSc)	Dec/19/96 - Jan/29/97
17. Mr. Hajime Toyofuku	Food safety control system (Fishery products) (DMSc)	Mar/09/97 - Mar/16/97
18. Mr. Tetsuo Sato	Food safety control system (Fishery products) (DMSc)	Apr/20/98 - Jun/19/98
19. Prof. Dr. Hiroyuki Nakazawa	Regulatory science (DMSc)	Mar/30/97 - Apr/06/97
20. Prof. Dr. Kunihiro Shinagawa	Testing of E. Coli O157: H7 (DMSc)	Apr/28/97 - May/07/97
21. Mr. Hideyoshi Fujieda	Food container and packaging (FDA)	Jul/01/97 - Sep/30/97
22. Ms. Erika Fukushi	Project Cycle Management (DMSc & FDA)	Jul/22/97 - Aug/04/97
23. Dr. Hisashi Kamimura	Toxic substances (DMSc)	Nov/17/97 - Dec/27/97
24. Mr. Kenjuro Naito	Quality control management of bottled drinking water (FDA)	Nov/30/97 - Dec/27/97

2. List of machinery and equipment provided by Japanese side

Fiscal Year	Category / Item	Qty	Price (Baht)	Delivery
1994/95	A. Office Automation & Communications for DMSc & FDA		1,974,600	
	1 Vehicle (Toyota Land Cruiser)	1	644,100	Jan-95
	2 Vehicle (Mitsubishi Wagon)	1	584,600	Mar-95
	3 Computer (Macintosh)	1	258,700	Nov-94
	4 Computer (Pentium)	1	284,400	Jan-95
	5 Facsimile (Canon)	1	68,600	Nov-94
	6 Facsimile (Canon)	1	68,600	Nov-94
	7 Photocopy machine (Canon)	1	32,800	Nov-94
	8 Photocopy machine (Canon)	1	32,800	Nov-94
	B. Machinery/ equipment for DMSc (Items 9-11 purchased in Japan)		13,124,055	
	9 GC-MS*	1	11,162,055	24-Mar-95
	10 HPLC*	2	(included in 5)	
	11 GC with FID*	1	(included in 5)	
	12 UV/VIS Spectrophotometer	1	320,000	Jul-95
	13 Autoclave	1	1,500,000	Jun-95
	14 Incubator	1	142,000	1-Oct-95
	C. Machinery and equipment for FDA		773,000	
	15 VDO/Computer projector	1	450,000	Mar-95
	16 Projection monitor	1	178,000	Mar-95
	17 PLUS board fax	1	50,000	Mar-95
	18 Tape recorder	4	24,000	Mar-95
	19 Direct projector	1	50,000	Mar-95
	20 Slide projector	1	16,000	Mar-95
	21 Screen	1	5,000	Mar-95
	D. Additional provision to FDA		2,421,888	
	22 Microbial lab. For total coliform	2	170,000	Jun-95
	Accessories:			
	- Portable incubator	1	64,000	Jun-95
	- Lamp.UV long-wave, etc.	1	1,500	Jun-95
	- Rack coliform tube	20	90,000	Jun-95
	- Counter hand-tally	1	700	Jun-95
	- Colony counter	1	39,000	Jun-95
	- Sterile bag	5	5,000	Jun-95
	- Durham tube	42	29,400	Jun-95
	- Vial	300	120,000	Jun-95
	23 Automatic autoclave	1	87,500	Jun-95
	24 Magnetic stirrer	2	31,200	Jun-95
	25 Incubator, 115 liters	1	42,500	Jun-95
	26 Incubator, 53 liters	1	32,800	Jun-95
	27 Electronic basic balance	1	31,600	Jun-95
	28 Vortex-genie 2 mixer	1	6,500	Jun-95
	29 Chemical analysis primaries screening system apparatus			
	Components:			
	- Spectrophotometer	2	284,000	Jun-95
	- Digital titrator	2	12,000	
	- Sodium hydroxide	5	2,500	
	- Titrator EDTA	5	2,500	
	- Weighing paper	5	3,500	
	- Reagents, 17 items		187,200	
	30 Mopet (Pipet aid)	2	18,000	Mar-95
	31 Touch O matic bunsen burner	2	30,000	Mar-95
	32 Blender base	1	11,550	Mar-95

Fiscal Year	Category / Item	Qty	Price (Baht)	Delivery
	33 Blender Container	3	13,200	Mar-95
	34 Laminar airflow	1	193,000	Oct-95
	35 ph meter	1	43,121	Mar-95
	36 Open bath combination	1	42,000	Oct-95
	37 Thermometer set	2	20,400	May-95
	38 Video editing unit			
	- Video camera	2	118,000	Mar-95
	- S-VHS editing system	2	70,560	Mar-95
	- Video recorder	2	165,050	Mar-95
	- Editing controller	1	33,480	Mar-95
	- Colour monitor	2	67,320	Mar-95
	39 Copy printer	1	133,200	Mar-95
	40 Tranparency maker	1	37,850	May-95
	41 Oil quality analyzer	2	72,897	Mar-95
	42 Hand refractometer	1	37,700	Oct-95
	43 Portable pH scan	1	2,660	Mar-95
	44 Notebook computer	1	68,500	Mar-95
	Total FY 1994/95		18,293,543	
			(¥67,686,109) 1 Bht=3.7 Yen	
1995/96	A. Machinery/ equipment for DMSc		9,329,000	
	1 GC with FID & NPD capillary column with auto sampler	1	1,250,000	3-May-96
	2 HPLC with diod array, electro ditector & auto sampler	1	1,590,000	16-Feb-95
	3 GC with FID & ECD capillary column with auto sampl	1	1,540,000	3-May-96
	4 Demineralizer water with reverse osmosis membrane	1	300,000	17-Apr-96
	5 Centrifuge referigerator	1	1,000,000	6-Mar-96
	6 Rotary evaporator with cooling system	1	300,000	28-Feb-96
	7 Lyophilizer	1	1,535,000	3-May-96
	8 Water activities apparatus	1	720,000	26-Feb-96
	9 anaerobic culture set	1	630,000	28-Feb-96
	10 Electronic copyboard	1	41,000	28-Feb-96
	11 Tape cassette	1	3,000	26-Feb-96
	12 Stereo-zoom microscope	1	420,000	16-Jun-96
	B. Machinery/ equipment for FDA		6,715,797	
	13 Mobile inspection bus system with accessories			
	- Diesel 195 Hp, 8 seats, maximum length, Body	1	1,984,500	28-Jun-96
	- treat with heat insulating materials 2 sections, 1			
	- for driver section and 1 for laboratory section			
	- Laboratory table, store shelf for instrument,	1	84,000	
	- chemical, books, etc.			
	- TV 14"	1	9,345	
	- Cable to electirical power supply (220V) 50	1	9,450	
	- Electiral generator	1	472,500	
	- Storage tank (stainless steel) 100 liters	1	21,000	
	- Drain tank 50 liters	1	5,250	
	- Video	1	7,350	
	- 2 Air-conditions, 1 include with the engine and 1	1	26,250	
	- connect to electical supply or electrical generator			
	- Fire extinguisher	1	6,300	
	- Radio	1	3,150	
	14 Freezer	1	319,200	
	15 Refrigerator	1	7,350	
	16 Training equipment			
	- VDO projector	1	378,000	
	- VDO player	1	18,375	

Fiscal Year	Category / Item	Qty	Price (Baht)	Delivery
	- VDO imager	1	136,500	
	- Slide projector	1	42,000	
	- Screen 150 inches	1	15,750	
	- Preamplifier	1	51,450	
	- Amplifier 150 W/ Channel	1	49,350	
	- Speaker and microphone	1	38,850	
	- Rack for equipment	1	31,500	
	- Installation and wire	1	14,700	
	17 Incubator	1	173,250	
	18 Centrifuge	1	43,050	
	19 Automatic diluter	1	301,350	
	20 Water bath	1	177,450	
	21 Autoclave	1	141,750	
	22 Data collection unit			
	- Personal computer	1	68,250	
	- Printer	1	14,700	
	23 Communication unit			
	- Facsimile	1	14,700	
	- Mobilephone	1	71,400	
	- Modem	1	26,250	
	24 Stereo zoom microphone with color monitor	1	380,100	
	25 Oil quality analyzer	1	38,325	
	26 Laboratory glasswares and supplies	1	73,500	
	27 Tent	1	15,750	
	28 Drinking water pretreatment plant	1	1,443,852	
	Stainless steel storage tank with level control, 150 liters; Transfer pump; Stainless steel pressure tank, 100 liters; Iron remover; Organic remover; Reverse osmosis; Softener; Carbon filter; Cation column; Anion column; Mixed bed column; Conductivity monitor with alarm; Fine filter; Ceramic filter; Ultraviolet sterilizer; Ozonizer; Volumetric meter; Filling machine for 1,000 cc. Bottle; Filling machine for 20 liters pail; Pail washing machine, 20 liters; Bottle washing machine, 1,000 cc.; Chemical feed pump; Stainless steel static mixer			
	Total FY 1995/96		16,044,797	
			(¥59,365,749)	1 Bht=3.7 Yen
1996/97	A. Machinery/ equipment for DMSc		8,978,750	
	1 Atomic absorption spectrophotometer	1	2,335,000	30-Apr-97
	2 HPLC with UV, RI detector, gradient system	1	1,615,000	28-Mar-97
	3 HPLC with photodiode array and spectrofluorometer detector	1	1,840,000	28-Mar-97
	4 High speed centrifuge	1	180,000	1-Apr-97
	5 Muffle furnace	1	198,000	21-Mar-97
	6 Shaker with test tube and funnel holder	1	225,000	21-Mar-97
	7 Homogenizer	1	152,000	21-Mar-97
	8 Analytical balance	1	130,000	21-Mar-97
	9 Gene amp. PCR complete system	1	650,000	16-Dec-96
	10 Clean bench2	2	750,000	11-Mar-97
	11 Deep freezer -80°C (216 lt. Vertical)	1	410,000	
	12 Air purifier3 (mobile)	2	67,500	29-Oct-96
	13 Stereo microscope	1	320,000	28-Mar-97
	14 Video visual with accessory	1	106,250	5-Nov-97
	B. Machinery/ equipment for FDA		4,718,226	

<u>Fiscal Year</u>	<u>Category / Item</u>	<u>Qty</u>	<u>Price (Baht)</u>	<u>Delivery</u>
	15 Water supply for laboratory used	1	405,000	3-Mar-97
	16 Bactometer	1	1,910,000	3-Mar-97
	17 Biohazard cabinet class II	1	374,000	10-Jan-97
	18 Sensident	1	400,000	
	19 Microscope	1	182,426	18-Mar-97
	20 Stomacher	1	113,000	21-Mar-97
	21 Refrigerator	1	189,000	
	22 Electronic balance	1	66,000	
	23 Dry ice maker	1	297,000	21-Mar-97
	24 pH meter	1	60,800	3-Mar-97
	25 Polaroid digital palette	1	272,000	27-Dec-96
	26 Membrane filtration system	1	152,000	27-Dec-96
	27 SO2 analyzer	1	145,000	27-Dec-96
	28 Textbooks	1	152,000	22-Apr-97
	C. First additional provision to DMSc		650,000	
	29 Glass instrument washer	1	650,000	
	D. Second additional provision to DMSc		3,512,515	
	30 Vehicle (Toyota Commuter)	1	700,000	
	31 Potentionmeter	1	510,000	
	32 Lyophilizer	1	525,000	
	33 Evaporation system	2	310,500	
	34 Mercury analyzer	1	407,400	
	35 Ultra-turrax homogenizer	2	115,500	
	36 Ultrasonic bath	1	44,000	17-Jul-97
	37 High temperature incubator	2	277,240	
	38 LCD projector	2	235,000	17-Jul-97
	39 Cooling system	2	120,500	
	40 Hot plate with magnetic stirrer	1	34,775	
	41 HPLC pump unit	1	157,600	
	42 Printer (HP LaserJet 5)	2	75,000	
	E. First additional provision to DMSc		134,525	
	43 Electronic pipette	5	90,000	31-Mar-97
	44 Textbooks	12	44,525	31-Mar-97
	F. Second additional provision to FDA		2,743,371	
	45 Pushing carts for carrying used 20-liter plastic contain	3	70,875	9-Jun-97
	46 Pushing carts for carrying cleaned 20-liter plastic con	3	70,875	9-Jun-97
	47 Double sink for cleaning used 20-liter plastic contain	1	28,350	9-Jun-97
	48 Sink for cleaning used 20-liter plastic containers	1	11,025	9-Jun-97
	49 Sink for installing bottle rinsing system	1	16,275	9-Jun-97
	50 Shelf for storing finished products (ES-INMU 106)	1	29,400	9-Jun-97
	51 Shelf for storing finished products (ES-INMU 107)	1	17,850	9-Jun-97
	52 Shelf for storing finished products (ES-INMU 108)	1	34,125	9-Jun-97
	53 Working table	1	17,850	9-Jun-97
	54 Conveyor (ES-INMU 110)	1	126,000	9-Jun-97
	55 Conveyor (ES-INMU 111)	1	84,000	9-Jun-97
	56 Conveyor (ES-INMU112)	1	66,150	9-Jun-97
	57 Ventilation system	1	93,090	25-Jul-97
	58 Three phase 380 volt electrical system	1	48,150	25-Jul-97
	59 Pipe water system	1	16,050	25-Jul-97
	60 Reusable polycarbonated with cap and case	2	423,100	25-Jul-97
	61 Telephone system	1	4,280	25-Jul-97
	62 Pail washing machine	1	37,450	25-Jul-97
	63 Rinsing machine	1	40,125	25-Jul-97
	64 Rinsed water recycle unit	1	34,026	25-Jul-97
	65 Filling machine for 500 cc/ 950 cc	1	42,800	25-Jul-97

Fiscal Year	Category / Item	Qty	Price (Baht)	Delivery
	66 UV machine	1	42,800	25-Jul-97
	67 Sanitary transfer pump	1	31,500	25-Jul-97
	68 Sanitary hand dryer	1	12,840	25-Jul-97
	69 Shrinked film machine	1	42,800	25-Jul-97
	70 Sanitary wasted water unit	1	42,800	25-Jul-97
	71 Essential spare parts for water treatment machine	1	37,450	
	72 Hirayama automatic autoclave	1	251,300	
	73 Light weight sterilizer	1	16,000	
	74 Colony image analysis	1	506,100	
	75 Digital venturis FX 5166 complete set	1	173,565	
	76 Hard drive, Seagate USA	1	22,470	
	77 CD writer, HP 6020I with SCSI interface and software	1	24,610	
	78 Computer set, "IQ" PC Set Pro 200/1600/32 Mini Tow	1	117,050	
	- HP6P HP LaserJet 6P Laster Printer	1	(included in 78)	
	- SZ501 UPS Syndome 500VA	1	(included in 78)	
	- MMD multimedia kit	1	(included in 78)	
	- Hayes message modem	1	(included in 78)	
	79 Colony counter pen	2	16,000	30-Apr-97
	- Proline spectrum 50-200ul	2	11,000	30-Apr-97
	80 708046 Dispensette variable, 5-25 ML	3	36,920	25-Jul-97
	- 702300 Tip box with sliding lid	4	9,420	25-Jul-97
	- 6506 Tray for blue tips	4	900	25-Jul-97
	81 Flameboy integra biosciences	2	36,000	30-Apr-97
	Total FY 1996/97		20,737,387	
			(¥90,415,007)	1 Bht=4.36Yen

1997/98	A. Machinery/ equipment for DMSc-		6,630,478	
	1 FT-IR spectrophotometer	1	880,000	28-Apr-98
	2 Fibertec	1	481,500	14-May-98
	3 Deep freezer, 216 liters	1	341,700	14-May-98
	4 Copy machine	1	368,200	26-Mar-98
	5 Derivatization instrument	1	592,800	26-Mar-98
	6 Programable isocratic pump for HPLC system	1	366,700	1997/8/5/14
	7 Water purification system	1	260,000	28-Apr-98
	8 Water purification system	1	369,000	14-May-98
	9 Water filter machine	3	139,500	6-Mar-98
	10 Coliform bath	1	209,000	26-Mar-98
	11 Homogenizer	1	243,000	26-Mar-98
	12 Hot air oven	2	156,000	14-May-98
	13 Stomacher	2	230,000	14-May-98
	14 Microscope	1	285,000	19-May-98
	15 Mobile fume hood	2	539,000	17-Jul-98
	16 Air purifier	6	210,000	4-Mar-98
	17 On-line dgasser	1	80,000	4-Mar-98
	18 Programable universal centrifuge	1	360,000	30-Jun-98
	19 IR moisture analyzer with printer	1	104,500	4-Mar-98
	20 Hot plate with magnetic stirrer	1	37,350	6-Mar-98
	21 Digital burette II	2	17,910	12-Mar-98
	22 Dispenser	2	33,000	6-Mar-98
	23 Balance (Top pan)	4	75,000	26-Mar-98
	24 Basic analytical balance	1	64,500	4-Mar-98
	25 Incubator, 749 liter	1	15,000	6-Mar-98
	26 Regrigerator	2	57,640	26-Mar-98
	27 Microwave oven	2	19,800	14-May-98

Fiscal Year	Category / Item	Qty	Price (Baht)	Delivery
	28 UV cabinet	1	48,600	4-Mar-98
	29 Textbooks (9 titles)		45,778	
	B. Machinery/ equipment for FDA		5,416,293	
	30 Automatic autoclave	1	260,000	14-May-97
	31 Auto plate	1	600,000	19-May-97
	32 Incubator, 286 liters	1	152,000	29-Jun-97
	33 Bio counter	1	309,520	5-Mar-97
	34 Air sample	1	160,000	5-Mar-97
	35 Air sterilizer system	1	204,300	29-Jun-97
	36 Refrigerate centrifuge	1	271,000	29-Jun-97
	37 Through flow cooler	1	105,000	5-Mar-97
	38 LCD projector for mobile unit	1	213,700	5-Mar-97
	39 Screening kit for antibiotic residue	1	28,000	5-Mar-97
	40 Food safety information set	1	629,800	5-Mar-97
	41 Food information touchscreen	1	327,000	11-Mar-97
	42 Audio recorder equipment	1	769,295	9-Apr-97
	43 slide multivision machine	1	571,296	5-Mar-97
	44 Digital duplication machine	1	504,672	28-May-97
	45 Can food field inspection set	1	31,000	19-May-97
	46 Camera set	1	205,610	5-Mar-97
	47 Colony counter	1	44,300	5-Mar-97
	48 Dispensette variable 10-50ml	1	29,800	19-May-97
	C. Additional provision to DMSc		7,721,795	
	49 Desktop filing system with accessories	1	947,600	
	50 Multimedia projector	1	261,528	
	51 Visual system presentation	1	78,472	
	52 Notebook computer	1	166,950	
	53 Analytical balance with printer (Sartorius AC211S)	1	156,450	
	54 Analytical balance (Sartorius: BP-210S)	1	91,875	
	55 Analytical balance with printer (Sartorius BP-210S)	2	183,750	
	56 Electronic precision balance (Sartorius BP-1200)	1	42,000	
	57 Electronic precision balance (Sartorius LP 620S)	1	110,250	
	58 Top loading balance	4	170,133	
	59 analytical mill	1	52,530	
	60 Laser printer	2	85,100	
	61 Centrifuge (Kubota)	1	231,064	
	62 Centrifuge (HIN-SII)	1	209,100	
	63 Air purifier	6	238,680	
	64 Refrigerator (Yomachi)	3	169,950	
	65 Refrigerator (Global: DRJ3R)	1	46,830	
	66 Refrigerator (Sharp: SJ-D55H)	1	29,000	
	67 Refrigerator (Sharp)	2	58,000	
	68 HPLC column oven	1	104,280	
	69 Hot plate stirrer	1	73,130	
	70 Hot plate with stirr	1	29,376	
	71 Hot plate	1	18,870	
	72 Hot air oven (Mettler ULM-500)	1	58,340	
	73 Hot air oven (Mettler UM 500)	1	47,500	
	74 Hot air oven with accessories (Mettler ULE 500)	1	61,750	
	75 Transferpetoor digital		90,720	
	- 1-5 ml.	2		
	- 10-50 ml.	2		
	- 20-100 ml.	2		
	- 200-1000 ml.	2		
	76 Automatic dispenser	1	150,000	

Fiscal Year	Category / Item	Qty	Price (Baht)	Delivery
	77 Electrodeless discharge lamp power supply with acc	1	126,560	
	78 Acrylic auto desiccator	4	92,000	
	79 NPD detector for CC	1	160,456	
	80 Water bath with magnetic stirrer	1	44,387	
	81 Water bath (Memmert)	2	40,000	
	82 Water bath (TECHNE)	1	76,145	
	83 Blender	10	35,000	
	84 Shaker	1	150,000	
	85 Shaker: reciprocation	1	66,428	
	86 Stomacher lab-blender	2	306,000	
	87 Vaccum manifold & accessories	1	28,900	
	88 Pregl platinum micro combustion boat	1	10,710	
	89 Cooling system	2	166,085	
	90 Microwave	2	17,400	
	91 Konica U-BIX copler	1	399,000	
	92 Mercury analyzer	1	505,160	
	93 Pyrocoated graphic tubes	1	100,740	
	94 Fireboy plus bunsen burner	6	171,361	
	95 Pipetboy Acu	4	71,808	
	96 Pipette controller	1	15,300	
	97 Autoclave (Hirayama)	2	325,964	
	98 Autoclave (Tommy)	3	542,163	
	99 Colony counter with accessories	2	51,000	
	100 Membrane holder filter	2	256,000	
	D. Additional provision to FDA		1,591,233	
	101 Isuzu Truck	1	455,000	
	102 Spare parts for water purification	1	183,025	
	103 Milk sampling set for inspection	1	83,079	
	104 Specific gravity in milk set	1	4,284	
	105 Vaccum pump for membrane filtration	1	58,140	
	106 Gerber fat set for milk	1	111,537	
	107 Hand refractometer for filled inspection	1	8,058	
	108 Digital burette for mobile unit	1	25,110	
	109 Lactic meter	1	76,500	
	110 Protein tester for measuring milk quality	1	586,500	
	Total FY 1997/98		21,359,799	
			(¥68,351,357)	1 Bht=3.2 Yen
1998/99	A. Requested by DMSc		7,431,678	
	B. Requested by FDA		5,000,538	
	Total Request FY 1998/99		12,432,216	
			(¥38,539,870)	1 Bht=3.1 Yen
	Grand Total FY 1994/95 - 1998/99		88,867,742	
			(¥324,358,092)	

3. List of counterpart personnel trained in Japan

Name of counterpart personnel	Field	Period
1. Mr. Somchai Komolyinggharoen, FDA	Quality control on food	Sep/25/94 - Nov/22/94
2. Ms. Malee Jaroenvitvorakul, DMSc	Analysis of antibacterial residues in food	Sep/25/94 - Dec/23/94
3. Mrs. Yupa Chantapanyarat, DMSc	Analysis of food additives	Jul/11/95 - Oct/31/95
4. Ms. Pusaya Sangvirun, DMSc	Food contaminant	Jul/11/95 - Oct/31/95
5. Ms. Mayuree Uraroongroj, DMSc	Food contaminant	Jul/07/96 - Mar/01/97
6. Ms. Chom Khaosaad, FDA	Food inspection	Oct/24/95 - Nov/28/95
7. Ms. Pairin Radomviwat, FDA	Food inspection	Sep/28/95 - Nov/28/95
8. Mr. Patum Chooratana, DMSc	Administration & management	Sep/04/96 - Sep/14/96
9. Mr. Nirat Tiasuman, FDA	Food sanitation administration	Sep/09/96 - Dec/28/96
10. Dr. Tipvon Pariwayasiri, FDA	Food sanitation administration	Nov/04/97 - Dec/07/97
11. Mr. Chatchai Tanbsongsuwan, FDA	Food sanitation administration	Nov/04/97 - Dec/07/97
12. Mr. Vimol Limsomwong, FDA	Food sanitation (HACCP)	Sep/09/96 - Dec/28/96
13. Ms. Ladaphan Sangklai, DMSc	Microbiological analysis of food	Jan/13/97 - May/30/97
14. Ms. Arunee Somphrom, DMSc	Microbiological analysis of food	Jan/12/98 - May/29/98
15. Ms. Jitpaka Suntudrop, DMSc	Pesticide residues in food	Mar/23/98 - Jun/05/98
(To be implemented)		
16. Ms. Kunhong Pedong, DMSc	Physical determination	6 months
17. Ms. Jongolunee Vithayarungruangsi, FDA	Food sanitation administration	3 months from Oct 98
18. Ms. Kasemsri Chuensupong, DMSc	Analysis of food additives, Food composition analysis	6 month
19. Ms. Vanida Natesiri, FDA	Food sanitation administration	2-3 months from Oct 98

4. Allocation of expenses on local activities

		1994/95	1995/96	1996/97	1997/98	1998/99*	Total
1. Middle Level Staff Training	Baht	0	3,300,000	2,320,000	1,550,000	1,200,000	8,370,000
	(Yen)	(0)	(12,300,000)	(9,904,000)	(8,100,000)	(3,720,000)	(34,024,000)
2. Mass Education	Baht	0	1,300,000	1,193,000	1,060,000	1,060,000	4,613,000
	(Yen)	(0)	(5,160,000)	(5,160,000)	(4,770,000)	(3,920,000)	(19,030,000)
3. Audio Visual Production Program	Baht	0	0	655,000	2,295,000	1,540,000	4,490,000
	(Yen)	(0)	(0)	(2,899,400)	(7,537,500)	(3,570,000)	(14,006,900)
4. Seminar	Baht	250,000	0	0	0	0	250,000
	(Yen)	(1,000,000)	(0)	(0)	(0)	(0)	(1,000,000)
5. Technical Exchange Program	Baht	0	297,000	0	0	0	297,000
	(Yen)	0	(1,190,000)	0	0	0	(1,190,000)
6. Grass Root Activities	Baht	0	0	0	830,000	620,000	1,450,000
	(Yen)	(0)	(0)	(0)	(2,790,000)	(1,920,000)	(4,710,000)
Total	Baht	250,000	4,897,000	4,168,000	5,735,000	4,420,000	19,470,000
	(Yen)	(1,000,000)	(18,670,000)	(17,963,400)	(23,197,500)	(13,130,000)	(73,960,900)

* Planned

5. Staff / personnel participating in project implementation

5.1 DMSc

10.5 Staff / Personnel Participating in Project Implementation.

- Department of Medical Sciences. (101 Staffs)

Number	Position	Qualification	Experience (years in service)
1	Deputy – Director General (Medical scientist P.C 9)	M.D	more than 15
2	Principle scientists (P.C. 9)	B.Sc; M.Sc	more than 25
2	Principle scientist s (P.C 9)	B.Sc	more than 20
2	Director of Divisions (Medical scientist P.C. 8)	B.Sc	more than 20
24	Medical scientists, P.C 8	B.Sc – M.Sc	more than 10
70	Medical scientists, 3 – 7	B.Sc – M.Sc.- Ph.D	more than 3-5

5.2 FDA

- Food and Drug Administration (54 Staff).

Number	Position	Qualification	Experience (years in service)
1	Deputy - Secretary General	M.D	more than 25
1	Director of Technical - Division (Technologist P.C 8)	B.Sc	more than 20
1	Director of Food Control (Technologist P.C 8)	B.Sc	more than 15
1	Director of Public Relation and Advertisement. (Technologist P.C 8)	B.Sc	more than 25
1	Director of Inspection Division (Technologist P.C 8)	B.Sc	more than 20
10	Food and Drug Officers And Inspectors (P.C 8)	B.Sc – M.Sc - Ph.D	more than 3-20
2	Senior food experts (PC 9)	Ph.D, B.Sc	more than 20
35	Food and Inspectors (PC 3-7)	B.Sc-M.Sc-Ph.D.	3-20
2	Public education officers (PC 3-8)	BA - MA	3-20

6. Information regarding the construction of the new DMSc building in Nonthaburi



Ref. No. 0501/ 4677

Department of Medical Sciences
Ministry of Public Health
Tiwanon Road, Nonthaburi

August 5, 1998

Dr. Teruki Ishihara
JICA Team Leader
Project for Strengthening of Food
Sanitation Activities
Bumrungmaung Road
Bangkok 10100

Dear Dr. Ishihara,

Re: JICA Office at new building of DMSc, Nonthaburi

According to our talking on February 24, 1998 about the new building for Food and Food for Export Divisions, which will provide the area on the seventh floor of this building for JICA office, I am pleased to inform you that the construction of the building was already finished. I would like to suggest that the JICA office will be located on the seventh floor of about 216 square meters with facilities and 4 office rooms. I hope that you and your team will appreciate it and continue your operational activities at the new building as usual.

Yours sincerely,

Renu Koysooko.

(Dr. Renu Koysooko)

Director - General

7. Thai-side budget allocated to the project activities

7.1 DMSc

Project for Strengthening of Food Sanitation Activities

Statement of Distributions from Thai Government

Month Starting from September 1, 1994

Operating Budget (DMSc)

Current Fiscal Year Disbursements : Baht Total

First Year **6,231,688.-**

September 1994- March 1995

Experts

- Housing rental	417,000
- Gasoline	68,730
- Secretaries and Drivers	475,137

Counterpart Scientists

- Salary	1,074,220
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Others

- Electricity and Water supply	37,100
- Telephones	50,430
- Laboratory expenses	3,963,283
- Training expenses	-
- Construction of JICA Office at Yod-Se	145,787

Second Year

Total 13,551,281

April 1995- March 1996

Experts

- Housing rental	477,096
- Gasoline	54,555
- Secretaries and Drivers	372,424

Counterpart Scientists

- Salary	1,923,000
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Others

- Electricity and Water supply	63,600
- Telephones	92,550
- Laboratory expenses	10,568,056
- Training expenses	-

Third Year

Total 11,761,761

April 1996- March 1997

Experts

- Housing rental	514,089
- Gasoline	67,787
- Secretaries and Drivers	464,455

Counterpart Scientists

- Salary	1,675,300
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Others

- Electricity and Water supply	70,000
- Telephones	99,540
- Laboratory expenses	8,870,590
- Training expenses	-

Fourth Year Total 5,877,561

April 1997- March 1998

Experts

- Housing rental	(was cut off)
- Gasoline	97,096
- Secretaries and Drivers	705,635

Counterpart Scientists

- Salary	1,842,830
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Others

- Electricity and water supply	72,000
- Telephones	80,000
- Laboratory Expenses	3,080,000
- Training expenses	

Fifth Year Total 16,434,600

April 1998 – March 1999

Experts

- Housing rental	(was cut off)
- Gasoline	72,000
- Secretaries and Drivers	700,600

Counterpart Scientists

- Salary	1,200,000
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Others

- Electricity and Water supply	40,500
- Telephones	35,000
- Laboratory expenses	6,890,500
- Training expenses	-
- Construction of New building at Nonthaburi For JICA (216 sq. m)	7,500,000

Grand Total 53,860,891 Baht

7.2 FDA

Year	Budget (Baht)
1994/95	324,000
1995/96	1,008,001
1996/97	1,452,000
1997/98	2,284,000
1998/99	3,056,000
Total	8,124,000

**Proposal of extension activity on
Good Laboratory Practices**

Under Project of
Strengthening of Food Sanitation Activities

Implement Agency : Department of Medical Sciences

Division of Food

Division of Food-for-Export

August 1998

PROPOSAL OF THE PROJECT

Project-Type : Technical Cooperation

Project Title : Strengthening of Food Sanitation Activities

Requesting Agency : Department of Medical Sciences (DMSc.),
Ministry of Public Health, The government of
the Kingdom of Thailand.

Extension Duration : Two years (From 1999 to 2001)

Proposal of extension activity on Good Laboratory Practices
Under Project of Strengthening of Food Sanitation Activities

1. Background Current situation

According to the 5- years project “ Strengthening of Food Sanitation Activities “ under the joint executive team of Department of Medical Sciences , Food and Drug Administration and the supervision of Japanese team leader and experts through JICA has been implemented from March 1994 through March 1999. The activities of food control system and also laboratory capabilities have already been improved in the both agency from the following years concerning the master plan of this project.

During the implementing of project , the Department of Medical Sciences (DMSc.) has facility such as; equipment sufficiency , well trained food analyst including up date knowledge and advance in food analysis. Therefore, the capability in food analysis is significantly improved and also manpower development. The various methods transferred from experts are currently used in laboratory as routine work so the service of food analysis is increasing and the scope of technology transfer summarized as following ;

1.1 Food Additives

Many simultaneous methods for determination of preservatives , antioxidants , sweeteners and synthetic colour are used as routine work to reduce time consuming analysis in laboratory so the efficiency of routine works are to be strengthened .In addition the specific method for individual item and the confirmation method using by GC/ MS are assured the accuracy of the result.

1.2 Food contaminants

Simultaneous method for determination of pesticide residues such as organochlorine , organophosphorus and organopyrethroids compounds using GC and confirmation by GC/MS are satisfied as routine work after method validation including Standard Operation Procedure (SOP).

To expand laboratory capability the organic bromide determination in rice was set up and also modified method introduced to improve the analysis.

To support the monitoring program since the drug residues such as salbutamol , clenbuterol and sulfonamide are widely used in animal so the simultaneous methods determination of drug residues are applied in both division.

Mycotoxins such as aflatoxin , ochratoxin , fumonisin, and etc. both theoretical and practical by using HPLC were transferred to improve the techniques for better performing efficiency and the establishing the manual for mycotoxins analysis as well.

1.3 Microbiological analysis

According to the outbreak of *E. Coli O157:H7* in Japan, technique transfer on the analytical method for *E.Coli O157:H7* by immunomagnetic separation technique (IMS) in foodstuffs were done , in order to enable the analysts for the monitoring *E. Coli O157:H7* contaminated in food for export and basic information data for risk analysis in Thailand.

Transfer rapid technique on development for determination of food poisoning bacteria in food by using ELISA , DNA hybridization and Polymerase Chain Reaction (PCR).

Practice and theory transfer on the Standard Conventional Culture techniques for *Listeria* , *Campylobacter* and *Yersenia* and also the technique for Antibiotic residue by bioassay improvement.

Development of test kit for microbe inspection in food and water.

1.4 Water analysis

Under the Division of Food , the method of determination trihalomethane in water was to set up in the laboratory including sulfide in mineral water so the research and monitoring program will be conducted by using new method

1.5 Food containers and packaging materials

TLC method for identified Dibutyl tin compound in polyvinyl chloride, GC and HPLC method for determination of monomer.

1.6 Instrument

The modern instrument such as GC/MS , HPLC , GC was set up and operated in laboratory for analysis and confirmation chemical compound found in food for instance pesticide residues, additives and drug residues etc. with new method and advanced techniques transfer, during work the SOP for instruction manual and maintenance preparation.

1.7 Quality Control for Food Safety

To give advice on the resolution of antibiotics in shrimp and inspection training in frozen shrimp plant which showed that the violation sample reduced. In addition the HACCP training course was conducted to the food analyst both in center and regional DMSc. and Pre Certification System was already implemented to up grade the food factory.

2. Justification

During the implementing of 4 years the out put of the project , almost of the activities have been done concerning the tentative program and were successful achievement, except some are insufficient on technical transfer as mention on the PCM workshop, for instance;

- Development of analytical method

Microbiological analysis : The Japanese expert had transferred modern technique of DNA hybridization , Reverse Passive Agglutination and PCR method for detection of some food poisoning bacteria such as *L.monocytogenes* , *Salmonella* , *Vibrio cholerae*. A conventional step of confirmation of *C.botulinum* by using tested animal was not so practical that the new method of PCR technique should be further developed to substitute the conventional method .Therefore, it still needs more advice to fulfil the work.

Many methods have been transferred by expert and those are used in current work but some of them have to be modified because of the dissimilar matrix of food samples. Thus the methodology development is not only used in analysis of routine but also surveillance and research to support the food control system so it is the necessity to have the accuracy of methods for analysis and good practice management system in laboratory .

In addition when the principle of Good Laboratory Practice (GLP) introducing in the middle level seminar , there was the strong request from the analyst to need more knowledge in GLP.

As mention with supporting the recommendation of the Minutes of Discussions , it is necessary for the enforcement of GLP in the Food Laboratory management System as well as Food Analysis capability.

Currently the standard official laboratory is required to establish quality assurance system and Good Laboratory Practices (GLP) refers to the general practice for all measurements produced from laboratory. The responsibility of DMSc is not only support food standard and surveillance food control program both public health and food industry but also to facilitate international food trade. Therefore the

users of testing results will ensure that it is accuracy and reliable which can be used in the legal action and confidence leading to the recognition from importing country.

To support the new GLP system, the new building with well trained and well equipment for food laboratory was already built in the new area of DMSc. GLP and laboratory management system will be established and strengthen under supervision by expert in this project in order to be efficiency in the long run.

3. Objective

To strengthen Good laboratory Practice and Laboratory management system in Food Laboratory.

4. Work plan

Technical cooperation - Japanese expert will give an advice on GLP system for the group training both chemist and microbiologist. Detail of work plan in attachment.

5. Outcome

5.1 Food Laboratory management system will be strengthened to be the reference laboratory in Thailand and also in South East Asia.

5.2 Accuracy and reliable results will be used in research work in the field of food safety for protection consumer and legal judgement.

5.3 To support the international food trade, the certification on food for export will be more confidence on standard system of laboratory and leading to mutual recognition agreement from the importing country.

Work plan of the project

Japanese Fiscal Year (April.- March)	1999/2000	2000/2001
1. Dispatch of Experts to Thailand (Long term)	Team Leader, Coordinator, Long term expert (1) for FDA and (1) for DMSc.	Long term expert (1) for FDA and (1) for DMSc.
2. Dispatch of Experts to Thailand (Short term)	GLP Expert (1) for DMSc.	The number and fields of experts are subject to be discussed.

PROPOSAL OF THE PROJECT
"TRAINING CENTER"

Requesting Agency : Department of Medical Sciences (DMSc) and the Office of Food and Drug Administration (FDA), Ministry of Public Health. The Government of the Kingdom of Thailand.

Proposed Source of Assistance : JAPAN.

Duration : Three years (From 1999 to 2001)

1. Background Information.

One of the laboratory service manager's responsibilities is to train employees in principles and practices of the analytical service, because training is teaching workers how to do a job properly. The purpose of teaching training is to provide workers with the skills necessary to use procedures in their jobs in order to keep quality of results. Employee training is an important factor in many operation's " bottom line ". Another benefit of training for workers is that it solves wear and tear on the manager or supervisor. Sometimes, workers morale and job pride are other important benefits of training. Most people want to do their jobs right. Once trained in procedure and properly supervised, the payoff in good service and in employee pride is a dual benefit.

In order to measure the training in technique and procedures, the ability of laboratory – service trainees to do their assigned tasks in the work properly should be recommended. When the procedures are being followed, both the practice themselves, therefore, the outcomes are generally observable.

Training courses for local middle level staff provided by the Department of Medical Sciences and the Office of Food and Drug Administration, under the sponsorship of JICA' project for Strengthening of Food Sanitation Activities are " *on the job training* " and were

very effective in laboratory services as well as the practice required in the performance of the job

From this experience, both DMSc and FDA can provide training courses using the facilities and equipment provided by JICA to staff who works in the field of Food Sanitation of Thailand and neighbouring countries.

2. Problems to be solved.

To decrease the problems of food sanitation concerned with food poisoning due to the contaminated food.

3. Justification. The reasons are that Japan has provided equipment and technology in Food sanitation to DMSc and FDA and also Japan has an effective food sanitation system and advanced technology and experienced personnel.

4. Objective. To provide technique and knowledge to staff who work in laboratories of Thailand and neighbouring countries.

5. Project Activities. To be discussed.

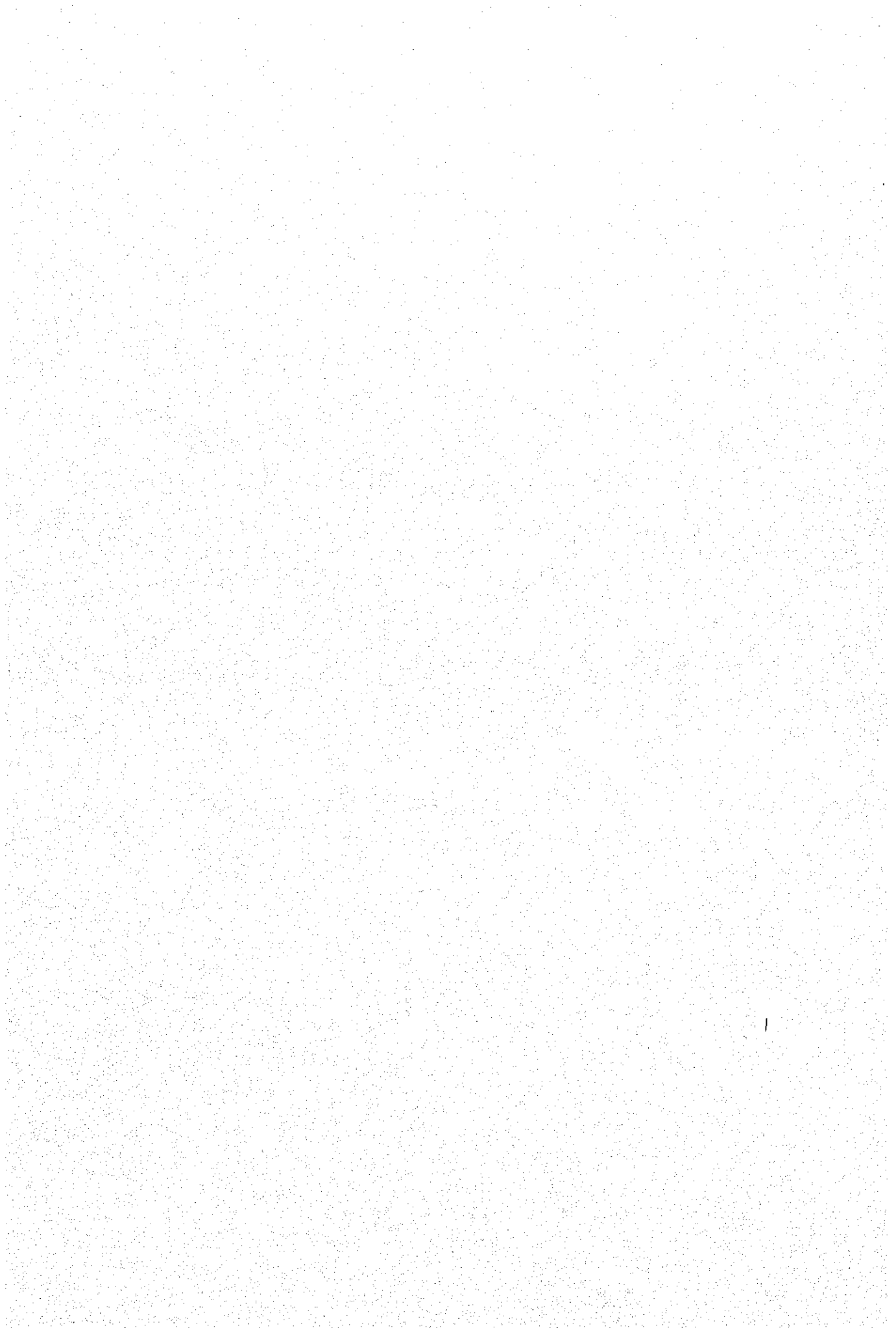
6. Project outputs. Strengthen the ability of performance of workers who work in laboratory on analytical methodology and sophisticated techniques.

7. Project work - plan. Subject to be discussed.

8. Target group. Analysts who work in laboratory.

9. Assistance request. Experts, some of specific equipment, and some of its accessories.

10. Staff concerned. To be discussed.



JICA