

3) Microorganisms

The object of inspection shall be the following pathogenic microorganisms, of which the top three (Salmonellas, Staphylacoccus and Vibrio) cause the most number of food poisoning.

Salmonellas typhimurium
Staphylacoccus aureus
Vibrio paralaemolyticus
Escherichia coli
Clostridium perfringens
Campylobacter Jejuni
Clostridium botulinum
Listeria monocylogenes
Bacillus cereus

4) Heavy Metal

It shall be confined to the following heavy metals to be cared with the most attention.

Copper, Zinc, Lead, Cadmium, Iron, Tin, Aluminum, Magnesium, Titanium, Manganese, Nickel, Chromium, Cobalt, Mercury, Arsenic

5) Mycotoxin

The following mycotoxins are confined to be harmful to the human health. Among those mycotoxins, Aflatoxin is the most harmful one.

Aflatoxin
Ochratoxin
Zearalenon
Citrinin
Patulin, Penicilloic acid

3-2-3 Equipment Plan

The selection of equipment was made after defining the basic concept (Figure 3-1) along with the above-stated "Design Policy".

(1) Deleted though requested

1) Deleted due to out of the Project scope

- Apparatus for octane value(Not food)
- Extensograph(Determination of wheat viscosity)
- Farinograph(Determination of water absorbing capacity)
- Reofermentgraph(Determination of fermentation in bread dough)
- Gas transmission rate tester(Determination of gas transmission rate in package)
- Contamination monitor(Determination of radioactivity)
- Becquerel monitor(Determination of radioactivity)

2) Deleted because research and development purpose and can be substituted by others

- Gas chromatograph / Mass spectrometer (GC-MS)
- Gas chromatograph (TEA detector)(Analysis of nitrosoamine)
- Amino acid analyzer(Analysis of amino acids)
- Ion chromatograph(Analysis of ions)
- Organic elements analyzer (Analysis of organic elements : CHON etc.)
- Fourier Transform Infrared spectrophotometer
(Identification of organic materials)
- Electrophoresis apparatus(Separation of protein)
- Gel permeation chromatograph(Separation of protein)
- KD- concentrator (Concentration of sample)
- Kit for identification of pesticide residues (Identification of pesticide residues)
- ICP - emission spectrophotometer(Heavy metal analysis)
- Kit for hormone identification(Identification of hormone)

3) Possible to use existing equipment

- Generator(in case of brownout)

(2) Added to the requested equipment list

1) Necessary equipment for laboratory operation and environment

- Magnetic stirrer w/ hot plate
- Water bath (low temperature)
- Shaking water bath
- Cool water circulator w/ aspirator
- Stereoscopic Microscope(microbiological analysis)
- Clean bench(microbiological analysis)
- Microbiological testing kit
- Ice making machine
- Sample mill
- Vehicle with refrigerating box (for sampling)
- Cleaner (for protection of dust)

2) Others

- Spare parts(Considering local availability)
- Manuals for main equipment into Arabic(Only for necessary one)

Table 3-7 shows the list of equipment planned for each site. In this table, information of the existing equipment, such as name of the manufacturer, year of procurement, any known problems are shown. The priority placed together with Syrian side are also shown in the table.

	Target Items (* Items which can be analyzed by this Project)	Range of Basic Design
Food chemical analysis	<u>Food compositional analysis</u> Humidity Protein Fats Carbohydrates Ash Acidity Sugar Oil <u>Contamination analysis</u> Vitamins * Organic acids * Sweeteners * Colors * Preservatives * Antioxidant * Flavorings * Enzymes * Aflatoxin * Heavy metals * Pesticide residues * Hormone *	<u>Laboratory for chemical analysis</u> (% order analysis) <div>Sample preparation Washing and Drying Sugar analysis Can testing set Common uses</div> <u>Laboratory for trace analysis</u> (ppm,ppb order analysis) <div>Rotary evaporator Homogenizer Column chromatograph etc.</div> <u>Instrumental analysis I</u> <div>Gas chromatograph Atomic absorption spect. Flame photometer</div> <u>Instrumental analysis II</u> <div>HPLC Spectrophotometer etc.</div>
	<u>Research for Food</u> <u>Radioactivity</u> <u>Physical Property</u> <u>Package</u> <u>Not Food(Perfumes etc.)</u>	<u>Out of scope</u> GC/MS, Amino acid analyzer Ion chromatograph, Electrophoresis FTIR, ICP-emission Spectrophotometer Extensograph, Gas transmission rate tester, Becquerel monitor, Apparatus for octane value
Food Microbiological analysis	<u>Microorganisms</u> E. coli, Salmonella etc. <u>Identification of meat *</u>	<u>Microbiological analysis</u> <div>Clean bench Incubator Microbiological testing kit Microscope etc.</div> <u>Preparation for Microbiological analysis</u> <div>Autoclave, Sterilizers etc.</div>
Others		<u>Storage</u> <div>Chemicals, Glass wares Spare parts</div> <u>Staff room</u> <div>Camera, Personal computer etc.</div>

Figure 3-1 Basic concept of Equipment components

Table 3-7 Equipment list
*Damascus

Fields	Request No.	Name of Equipment	Existing Equipment				Requested		Planned
			Q'ty	Brand	Purchase	Conditions	P'ty	Q'ty	
Compositional Analysis	5	Water content meter					A	1	1
	13	Color meter					A	1	1
	14	Conductivity meter					A	1	1
	33	Fume cupboard					A	1	2
	46	Kent and Jones (Color grader)					A	1	1
	50	Microwave heater					A	3	3
	52	Oil bath					A	1	1
	64	Shaker					A	1	1
	65	Shaking water bath					A	1	1
	75	Turbidimeter					A	1	1
	79	Vacuum type drying oven					A	1	1
	81	Viscosity meter for oil					A	1	1
	84	Water bath (low temperature)					A	1	1
	10	Centrifuge	2	Germany Bubcock	1984, 1987	Good	B	1	1
	27	Electric balance	3	Swiss Mettler	1985, 1988	Good	B	2	2
	42	Magnetic stirrer with hot plate					B	1	1
	43	Hydrometer					B	1	1
	56	pH meter					B	2	2
	68	Solid phase extraction vacuum manifold					B	1	1
	69	Soxhlet extractor					B	2	2
	70	Speedy fat extraction analyzer					B	1	1
	82	Water activity meter					B	1	1
	24	Drying oven	2	UK Carbolite etc.	before 1984	Very old	C	1	1
	26	Electric furnace	2	UK Carbolite etc.	before 1984	Old	C	1	1
	83	Water bath	1	Achting	1987	Good	C	1	0
		Electric furnace	1	Titanox	1991	Good			
		Kjeldahl distillation apparatus	2	Sweden Tecator	1993, 1990	Good			
		Melting point apparatus	2	US Cryoscope	1986, 1992	Good			
		Water distilling apparatus	2	UK Mart	1992	Good			
Contaminants analysis	18	Cooling water circulator w/aspirator					B	1	1
	40	Homogenizer					B	1	1
	61	Rotary evaporator	1	Germany Ika	1986	Bad	B	2	2
		Fume cupboard (small)							1
Sugar analysis	7	Brix meter					A	1	1
	58	Polarimeter	2	Japan Atago	1992	Good	B	1	0
	1	Abbe's refractometer					C	1	1
Instrumental analyses I	34	Gas chromatograph	2	UK Unicam	1991	Good	A	2	2
		Gas chromatograph	2	UK Unicam	1993	Good	A		
		Gas chromatograph	1	US Valian	1987	Acceptable	A		
	28	Flame spectrophotometer	1	UK Jenway	1986	Good	A	1	1
	3	Atomic absorption spectrophotometer		UK Unicam	1993	Good	A	1	1
Instrumental analyses II	21	Densitometer					A	1	1
	29	Fluorescence spectrophotometer					A	1	1
	39	High performance liquid chromatograph	1	US valian			A	3	3
	51	Near infrared spectrophotometer					A	1	1
	23	Distilled water maker					B	1	1
	74	Thin layer chromatograph	1	Swiss Camag	1987	Good	B	1	0
	76	Ultra violet lamp					B	1	1
	78	UV/VIS spectrophotometer	2	US Valian	1986, 1987	Acceptable	B	1	1
Microbiological analyses	6	Biological microscope					A	1	1
	11	Clean bench					A	1	1
	30	Food plate					A	1	1
	31	Food stamp					A	1	1
	37	Glove box					A	1	1
	47	Kit for identification of meat					A	1	1
	49	Microbiological testing kit					A	4	4

*Damascus

Fields	Request No.	Name of Equipment	Existing Equipment				Requested		Planned
			Q'ty	Brand	Purchase	Conditions	P'ty	Q'ty	Q'ty
	59	Refrigerated centrifuge					A	1	1
	72	Stereoscopic microscope					A	1	1
	12	Colony counter	1	Gallen kamm	1992	Good	B	1	1
	16	Constant temperature and humidity chamber					B	1	1
	17	Constant temperature water bath					B	1	1
	55	Petrifilm					B	1	1
	45	Incubator	3	Germany Heraeus	1990, 1992	Good	C	1	0
	73	Stomacher blender	1	UK Bieberrey	1992	Good	C	1	0
Preparation for microbiological analyses	4	Autoclave	1	Japan Ogawa	1993	Good	B	1	1
	15	Constant temperature steam sterilizer					B	1	1
	41	Hot air drying type sterilizer	1	Unknown	1992	Good	B	1	0
Washing and sample preparation	20	Crusher					A	1	1
	25	Drying shelf					A	3	3
	57	Pipette cleaner					A	1	1
	62	Sampling kit					A	1	1
	63	Sample mill					A	1	1
	66	Sieve set					A	1	1
	77	Ultrasonic cleaner					B	3	3
Can testing	9	Can testing set					A	1	1
	22	Device for determination of CO2 in Beverage					B	1	1
Common uses	44	Ice making machine					A	2	2
	32	Freezer					C	2	0
	60	Refrigerator					C	2	0
Others	2	Air conditioner					A	2	2
	19	Copy machine					A	1	1
	38	Heavy metal treatment apparatus					A	1	1
	54	Personal computer					A	1	1
	67	Slide type projector					A	1	1
	71	Stabilizer					A	5	1
	80	Vehicle with refrigerating box					A	1	1
	36	Glass Instruments					B	1	1
	8	Camera					C	1	1
	53	Overhead projector					C	1	1
		Fermentgraph	1	Sweden SIA	1993	Good			
		Petrol distillator	1	Lauda	1992	Good			
		Cleaner							
	85	Spare parts					A	1	1
		Total						107	96

P'ty : Priority, Q'ty :Quantity

*Aleppo

Fields	Request No	Name of Equipment	Existing Equipment				Requested		Planned
			Q'ty	Brand	Purchase	Conditions	P'ty	Q'ty	
Compositional Analyses	5	Water content meter					A	1	1
	10	Centrifuge	1	Germany Gerber	1988	Acceptable	A	1	1
	24	Drying oven	1	Germany Aerosteril	1967	Acceptable	A	1	1
	33	Fume cupboard					A	1	1
	46	Kent and Jones (Color grader)					A	1	1
	52	Oil bath					A	1	1
	79	Vacuum type drying oven					A	1	1
	81	Viscosity meter for oil					A	1	1
	82	Water activity meter					A	1	1
	13	Color meter	1	UK Lovi bond	1985	Acceptable	B	1	1
	14	Conductivity meter					B	1	1
	27	Electric balance	2	Germany Sartorius etc.	1967, 1988	Not work	B	1	1
	42	Magnetic stirrer w/ hot plate	2	US Nuova	1993	Acceptable	B	1	0
	43	Hydrometer					B	1	1
	56	pH meter	1	Germany Metrohm	1985	Acceptable	B	1	1
	68	Solid phase extraction vacuum manifold					B	1	1
	75	Turbidimeter					B	1	1
	84	Water bath (low temperature)					B	1	1
	26	Electric furnace	5	Germany Ver-labotechnic	1967, 1980	Acceptable	C	1	0
	50	Microwave heater					C	1	1
	64	Shaker					C	1	1
	65	Shaking water bath					C	1	1
	69	Soxlet extractor					C	2	1
	70	Speedy fat extraction apparatus					C	1	1
	83	Water bath	5	Germany Ika etc.	1990, 1993	Good	C	1	0
Contaminants Analyses	40	Homogenizer					A	1	1
	61	Rotary evaporator					A	1	1
	18	Cooling water circulator w/ aspirator					B	1	1
Sugar Analyses		Fume cupboard (small)							1
	1	Abbe's refractometer					A	1	1
	7	Brix meter					C	1	1
Instrumental Analyses I	58	Polarimeter	1	Japan Atago	1991	Acceptable	C	1	0
	34	Gas chromatograph	1	UK Unicam	1975	Acceptable	A	2	2
	28	Flame photometer					A	1	1
Instrumental Analyses II	3	Atomic absorption spectrophotometer					A	1	1
	21	Densitometer					A	1	1
	29	Fluorescence spectrophotometer					A	1	1
	39	High performance liquid chromatograph					A	2	2
	51	Near infrared spectrophotometer					A	1	1
	74	Thin layer chromatograph	1	Swiss Camag	1993	Acceptable	A	1	0
	78	UV/VIS spectrophotometer	2	US Bosh-Lomb etc.	1975, 1992	Acceptable	A	1	1
	23	Distilled water maker					B	1	1
Microbiological Analyses	76	Ultra violet lamp	1	Syria M. Ksebatl	1993	Need repair	B	1	1
	12	Colony counter	2	Syria M. Ksebatl	1987, 1992	Not work	A	1	1
	16	Constant temperature and humidity chamber					A	1	1
	17	Constant temperature water bath					A	1	1
	37	Grove box					A	1	1
	55	Petrifilm					A	1	1
	72	Stereoscopic microscope					A	1	1
	6	Biological microscope	1	Germany CBS	1980	Acceptable	B	1	1
	11	Clean bench					B	1	1
	31	Food stamp					B	1	1
	47	Kit for identification of meat					B	1	1
	49	Microbiological testing kit					B	1	1
	59	Refrigerated centrifuge					B	1	1

*Aleppo

Fields	Request No	Name of Equipment	Existing Equipment				Requested		Planned
			Q'ty	Brand	Purchase	Conditions	P'ty	Q'ty	
	73	Stomacher blender	2	UK Lab-blender	1993, 1994	Good	B	1	0
	30	Food plate					C	1	1
	45	Incubator	4	Germany Memert etc.	1990	Good	C	1	0
Preparation for Microbiological Analyses	15	Constant temperature steam sterilizer					A	1	1
	41	Hot air drying type sterile	1	Syria M. Ksebatl	1993	Acceptable	A	1	1
	4	Autoclave	2	Spain Selecta	1994	Good	B	1	0
Washing and sample preparation	20	Crusher					A	1	1
	25	Drying shelf					A	1	1
	57	Pipette cleaner					A	1	1
	62	Sampling kit					A	1	1
	66	Sieve set					A	1	1
	77	Ultrasonic cleaner					A	1	1
	63	Sample mill					B	1	1
Can testing	9	Can testing set					A	1	1
	22	Device for determination of CO2 in Beverage					A	1	1
		Apparatus for determination of CO2	1	US Corning	1985	Not work			
Common uses	44	Ice making machine					B	1	1
	32	Freezer					C	1	0
	60	Refrigerator	3	Syria Barada	1992, 1994	Good	C	1	0
Others	2	Air conditioner					A	2	2
	19	Copy machine					A	1	1
	36	Glass instruments					A	1	1
	54	Personal computer					A	1	1
	71	Stabilizer					A	5	1
	80	Vehicle with refrigerated box					A	1	1
	8	Camera					B	1	0
	38	Heavy metal treatment apparatus					B	1	0
	53	Overhead projector					C	1	0
	67	Slide type projector					C	1	0
		Petrol distillator	1	US Lauda	1994	Good			
		Cleaner							1
	85	Spare parts					A	1	1
		Total						91	75

P'ty : Priority , Q'ty : Quantity

Lafakia

Fields	Request No.	Name of Equipment	Existing Equipment				Requested		Planned
			Q'ty	Brand	Purchase	Conditions	P'ty	Q'ty	
Compositional Analyses	5	Water content meter					A	1	1
	13	Color meter					A	1	1
	24	Drying oven	3	Germany	1990, 1991	Good	A	1	1
	27	Electric balance	2	Swiss Mettler	1991	Good	A	2	2
	50	Microwave heater					A	1	1
	52	Oil bath					A	2	2
	68	Solid phase extraction vacuum manifold					A	1	1
	79	Vacuum type drying oven					A	1	1
	81	Viscosity meter for oil					A	1	1
	26	Electric furnace	1	Unknown		Not work	B	1	1
	33	Fume cupboard					B	1	1
	42	Magnetic stirrer w/ hot plate	1	US Thermoline	1992	Good	B	1	0
	43	Hydrometer					B	1	1
	46	Kent and Jones (Color grader)					B	1	1
	56	pH meter					B	1	1
	70	Speedy fat extraction analyzer					B	1	1
	75	Turbidimeter					B	1	1
	84	Water bath (low temperature)					B	1	1
	10	Centrifuge	1	Swiss Gerber	Unknown	Good	C	1	1
	14	Conductivity meter					C	1	1
	64	Shaker					C	1	1
	65	Shaking water bath					C	1	1
	69	Soxlet extractor					C	1	1
	82	Water activity meter					C	1	1
	83	Water bath	1	Syria	1991	Good	C	1	0
		Melting point apparatus	1	Unknown		Not work			
		Water distilling apparatus	1	Unknown		Not work			
		Water distilling apparatus	2	Germany	1990, 1991	Good			
Contaminants analyses	40	Homogenizer					B	1	1
	61	Rotary evaporator					A	2	2
	18	Cooling water circulator w/aspirator					B	1	1
		Fume cupboard (small)							1
Sugar analyses	1	Abbe's refractometer	1	Unknown		Not work	A	1	1
	7	Brix meter					B	1	1
	58	Polarimeter	1	Japan Atago	1992	Not work	A	1	1
Instrumental analyses I	34	Gas chromatograph	1	UK Unicam	1988	Not work	A	2	2
	28	Flame spectrophotometer					A	1	1
	3	Atomic absorption spectrophotometer	1	Unknown	1983	Not work	A	1	1
Instrumental analyses II	29	Fluorescence spectrophotometer					A	1	1
	39	High performance liquid chromatograph					A	2	2
	78	UV/VIS spectrophotometer	1	US Corning	1991	Acceptable	A	1	1
	51	Near infrared spectrophotometer					A	1	1
	74	Thin layer chromatograph	1	Swiss Camag	1991	Good	A	1	0
	76	Ultra violet lamp	1	Syria M. Ksebati	1991	Good	A	1	0
	21	Densitometer					A	1	1
	23	Distilled water maker					C	1	1
Microbiological analyses	6	Biological microscope					A	1	1
	72	Stereoscopic microscope					A	1	1
	11	Clean bench					A	1	1
	37	Grove box					A	1	1
	45	Incubator	1	Germany	1991	Good	B	1	0
	12	Colony counter	1	US	1992	Good	A	1	1
	16	Constant temperature and humidity chamber					B	1	1
	17	Constant temperature water bath					A	1	1

'Lalokia

Fields	Request No.	Name of Equipment	Existing Equipment				Requested		Planned
			Q'ty	Brand	Purchase	Conditions	P'ty	Q'ty	Q'ty
	49	Microbiological testing kit					A	1	1
	55	Petrifilm					C	1	1
	30	Food plate					B	1	1
	31	Food stamp					A	1	1
	47	Kit for identification of meat					A	1	1
	59	Refrigerated centrifuge					A	1	1
	73	Stomacher blender	1	US	1992	Good	B	1	0
Preparation for microbiological analyses	4	Autoclave	1	Germany Gerber	1991	Good	A	1	0
	15	Constant temperature steam sterilizer	1	China Smic	1991	Good	A	1	0
	41	Hot air drying type sterilizer					B	1	1
Washing and sample preparation	57	Pipette cleaner					B	1	1
	77	Ultrasonic cleaner					A	1	1
	25	Drying shelf					A	1	1
	62	Sampling kit					B	1	1
	20	Crusher					C	1	1
	63	Sampling mill					C	1	1
	66	Sieve set					B	1	1
Can testing	9	Can testing set					B	1	1
	22	Device for determination of CO2 in Beverage					A	1	1
Common uses	44	Ice making machine					B	1	1
	60	Refrigerator							
	32	Freezer							
Others	8	Camera					B	1	0
	19	Copy machine					A	1	1
	53	Overhead projector							
	67	Slide type projector							
	54	Personal computer					A	1	1
	36	Glass instruments					A	1	1
	2	Air conditioner					A	2	2
	71	Stabilizer					A	5	1
	38	Heavy metal treatment apparatus					B	1	1
	80	Vehicle with refrigerating box					A	1	1
		Cleaner							1
	85	Spare parts					A	1	1
		Total						89	78

P'ty : Priority , Q'ty : Quantity

*Homs

Fields	Request	Name of Equipment	Existing Equipment			Requested		Planned
			Q'ty	Brand	Year of Purchase	Present condition	P'ty	Q'ty
Compositional Analyses	5	Water content meter	1	US Ohaus	1979	Good	A	1
	13	Color meter					A	1
	14	Conductivity meter					A	1
	24	Drying oven	2	Germany Memmert	1963, 1980	Good	A	1
	26	Electric furnace	1	US	1963	Good	A	1
	33	Fume cupboard					A	1
	43	Hydrometer					A	1
	46	Kent and Jones (Color grader)					A	1
	50	Microwave heater					A	1
	64	Shaker					A	1
	65	Shaking water bath					A	1
	68	Solid phase extraction vacuum manifold					A	1
	82	Water activity meter					A	1
	84	Water bath (low temperature)					A	1
	10	Centrifuge	1	Swiss Gerber	1984	Good	B	1
	52	Oil bath					B	2
	56	pH meter	1	Swiss Metrohm	1992	Good	B	1
	75	Turbidimeter					B	1
	79	Vacuum type drying oven					B	1
	27	Electric balance	4	Japan, Germany Sartorius	1990, 1985	Good	C	1
	42	Magnetic stirrer w/hot plate					C	1
	69	Soxhlet extractor					C	1
	70	Speedy fat extraction analyzer					C	1
	81	Viscosity meter for oil					C	1
	83	Water bath	1	Syria M.Ksebatl	1993	Good	C	1
		Kjeldahl distillation apparatus	1	Germany Buchi	1991	Good		
		Melting point apparatus	1	UK Electrothermal	1992	Good		
		Oil color tester	1	UK Lovi bond	1985	Acceptable		
Contaminants analyses	18	Cooling water circulator w/aspirator					B	1
	40	Homogenizer					B	1
	61	Rotary evaporator					B	2
Sugar analyses		Fume cupboard (small)						1
	58	Polarimeter	1	Japan Atago	1985	Acceptable	A	1
	1	Abbe's refractometer	1	UK BS	1963	Good	B	1
Instrumental analysis I	7	Brix meter					B	1
	34	Gas chromatograph	1	UK Uni-cam	1979	Acceptable	A	2
	28	Flame spectrophotometer					A	1
Instrumental analysis II	3	Atomic absorption spectrophotometer					A	1
	21	Densitometer					A	1
	23	Distilled water maker					A	1
	29	Fluorescence spectrophotometer					A	1
	39	High performance liquid chromatograph					A	2
	51	Near infrared spectrophotometer					A	1
	78	UV/VIS spectrophotometer	1	UK Uni-cam	1990	Acceptable	A	1
	76	Ultra violet lamp	1	Syria M.Ksebatl	1992	Good	B	1
Microbiological analyses	74	Thin layer chromatograph	1	Swiss Camag	1992	Good	C	1
	11	Clean bench					A	1
	12	Colony counter	1	Swiss Gerber	1991	Acceptable	A	1
	16	Constant temperature and humidity chamber					A	1
	31	Food stamp					A	1
	47	Kit for identification of meat					A	1
	49	Microbiological testing kit					A	1
	72	Stereoscopic microscope					A	1
	6	Biological microscope	2	Japan Olympus	1976, 1978	Good	B	1
	17	Constant temperature water bath					B	1
	45	Incubator	3	Germany Heagrus	unknown	Good	B	1

*Homs

Fields	Request	Name of Equipment	Existing Equipment			Requested		Planned
			Brand	Year of Purchase	Present condition	P'ty	Q'ty	O'ty
	55	Petrifilm				B	1	1
	73	Stomacher blender	1 UK Seward	1992	Good	B	1	0
	30	Food plate				C	1	1
	37	Glove box				C	1	1
	59	Refrigerated centrifuge				C	1	1
Preparation for microbiological analyses	4	Autoclave	1 Spain Selecta	1994	Good	A	1	0
	15	Constant temperature steam sterilizer	1 China Smic	1994	small one	A	1	1
	41	Hot air drying type sterilizer	1 Germany Sartorius	1994	Good	A	1	0
Washing and sample preparation	25	Drying shelf				A	1	1
	57	Pipette cleaner				A	1	1
	62	Sampling kit				A	1	1
	63	Sample mill				A	1	1
	77	Ultrasonic cleaner				A	1	1
	20	Crusher				B	1	1
	66	Sieve set				C	1	0
Can testing	9	Can testing set				A	1	1
	22	Device for determination of CO2 in Beverage				A	1	1
Common uses	44	Ice making machine				A	1	1
	32	Freezer						
	60	Refrigerator						
Others	2	Air conditioner				A	2	2
	71	Stabilizer				A	5	1
	80	Vehicle with refrigerating box				A	1	1
	36	Glass Instruments				B	1	1
	38	Heavy metal treatment apparatus				B	1	1
	54	Personal computer				B	1	1
	8	Camera				C	1	0
	19	Copy machine				C	1	0
	53	Overhead projector						
	67	Slide type projector						
		Petrol distillator	1 Syria M. Kaebati	1992	Acceptable			1
		Cleaner						
	85	Spare parts				A	1	1
		Total					88	75

P'ty : Priority, Q'ty : Quantity

3-2-4 Equipment Layout

The equipment layout is as shown in the Appendix for each site.

3-3 Implementation Plan

3-3-1 Basic Policy of Implementation

In the implementation of this Project, smooth and punctual operations shall be made with the following policies:

- (1) It is important to execute the Project without delay based on the work schedule, to keep close contact with the persons in charge of the installation works both in Syria and Japan.

The smooth communication between the two sites of Damascus and Aleppo, also Latakia and Homs are especially important, because the installation work for the two sites is carried out simultaneously.

- (2) Give pertinent advice to the owner personnel concerning maintenance management after delivery in order so that the Syrian side may operate the laboratory smoothly .

There is a continuous flow of works in the stages of implementation and management upon completion of work. Therefore, it is desirable that the persons in charge remain the same in all stages of work. It is advisable to set up a Steering Committee for the implementation of the Project as follows:

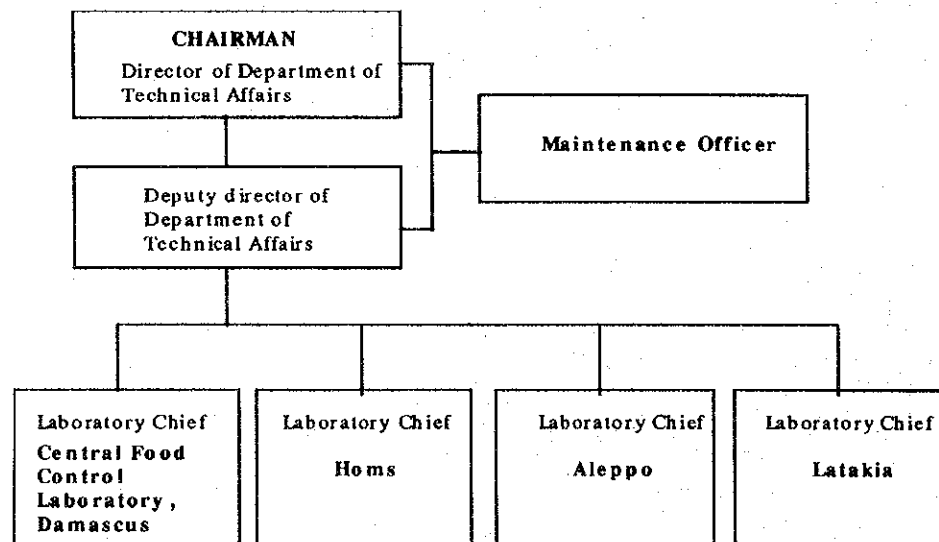


Figure 3-2 Structure of Steering Committee

The Director of the Department of Technical Affairs shall take the post of the chairman to give instructions for smooth and effective running of installation works. As previously stated in the item of Maintenance Management, the maintenance officer shall visit each site regularly and inspect the conditions of the equipment, stock of spare parts and chemicals. This maintenance officer should be present at the time of the installation of equipment at each site. He should also be present at the meeting of the equipment handling explanation by suppliers at the time of the installation works. Through attending these meetings and explanations, he shall be able to take proper measures against any troubles which may arise in the future.

3-3-2 Supervision Plan

The followings should be noted in the supervision of implementation of the Project.

- (1) In order to shorten the work period and considering the amount of works at sites, the four sites shall be divided into two groups and the installation work of two sites shall be carried out simultaneously. It is planned that the central food control laboratory at Damascus and Aleppo laboratory shall be in one group and Latakia and Homs laboratory in another.
- (2) The Ministry must complete its room modification in order to make it more suitable for laboratory operation prior to arrival and start of installation work of the new equipment procured under this Project. The modification works shall be carried out with the supervision of Department of Technical Affairs.
- (3) Whenever considered necessary, the consultant or his representative shall attend the inspection of the equipment at the manufacture's premises or at port warehouses prior to shipment in order to ensure the quality and performance of the equipment.
- (4) The consultant shall be present at the final inspection and trial operation of the equipment, and ensure conformity with the contract and submit the "Certificate of Acceptance" to the Government of Syria.
- (5) Some of the equipment provided under this Project require a skill to operate properly and necessitates some knowledge for operation and maintenance.

The suppliers shall train the Syrian engineers on the spot of installation, adjust-

ments, trial operation so that Syrian engineers can acquire knowledge of operation, trouble shooting and repairing. It should be planned to translate the manuals for main equipment into the Arabic language, because not all of the engineers can understand English to a required level.

3-3-3 Delivery of equipment

(1) Procurement

The equipment procured under this Project may be produced in Japan and several other countries. In the selection of the equipment, whether there is a reasonable service system for maintenance and manufacture's agent for supply of spare parts in Syria shall be considered. Electric appliances well prevalent in Syria such as cleaners and copying machines, personal computers, some of the clerical equipment, etc. can be procured in Syria considering the availability of maintenance and repair services in Syria.

(2) Transportation

In this plan, the equipment made in Japan is scheduled to be shipped from the port of Yokohama.

Containers with moisture-proof packing shall be used for sea transportation. The unloading port in Syria will be Latakia. It has been confirmed during the study that the containers can be handled properly in the Latakia port.

Inland transportation to the site shall be by container-trailers in principle. However, railway transportation shall be adopted for the transportation from Latakia to Aleppo owing to road condition.

	<u>Route</u>	<u>Distance</u>	<u>Method</u>
A	Latakia Damascus	abt 370 km	Container-trailer
B	Latakia port .. Site	abt 7 km	Container-trailer
C	Latakia Aleppo	abt 170 km	Railway
D	Latakia Homs	abt 170 km	Container-trailer

There is not enough space to keep the equipment inside or outside of the laboratory buildings. A warehouse near each site shall be rented for temporary storage of equipment. Another purpose of renting a warehouse is to protect the equipment from burglary. The equipment shall be transported to the site by piecemeal safely corresponding to the work at the installation site.

3-3-4 Work Schedule

This Project shall be implemented in a single year. The schedule of the Project shall be as shown in the Figure 3-03 "Project Implementation Schedule". After signing the Exchange Note, the Implementation Agency of this Project, the Department of Technical Affairs shall conclude a contract for the consultation services with a Japanese consultant who shall supervise the implementation of the Project. The consultant shall request for a verification of the contract from the government of Japan and begin to prepare detailed design drawings for implementation and tendering documents.

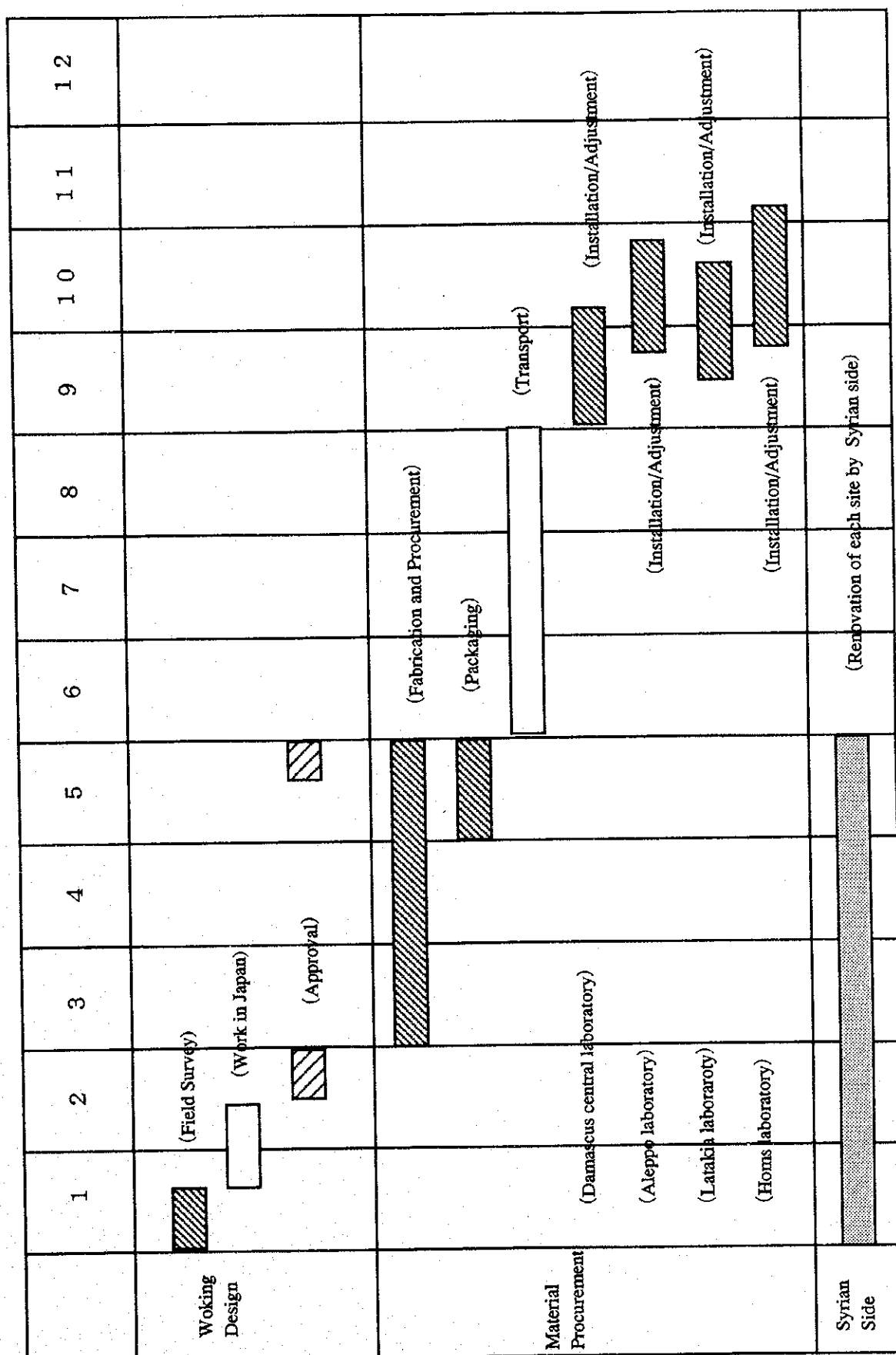
The consultant shall complete the detailed design works including specifications of equipment as soon as possible. After obtaining a consent from the Department of Technical Affairs on the tendering documents, he shall explain them to the Japanese trading houses. Opening tender bidding shall take place in Japan under presence of Syrian representative. A successful tenderer(the supplier) shall conclude a contract of the supply with the Ministry of Supply and Internal Trade. Through verification of the contract from the Japanese government, the supplier shall start the work. The Department of Technical Affairs shall proceed the work to be borne by the Syrian government without affecting the proceedings of installation.

Works classified for Japanese and Syrian responsibility shall be as following Table 3-8 based on the system of Grant Aid Scheme.

The work schedule for this Project is as shown in Figure 3-03. In this schedule, installation works of procured equipment will be completed by February, 1996. However, in the middle of January when Ramadan starts, it is anticipated that the efficiency of workers would lower considerably. In order to cope with this situation, the work must be carried out at a faster speed initially so that the majority of the work at each site shall be completed by the middle of January, 1996, and the completion of the Project including owners' issuance of a "Completion Certificate" to the supplier shall be finalized by the end of February, 1996 without fail.

Table 3-8 Work Items under Responsibility of Japan and Syria

Site	Japanese Portion	Syrian Portion
Central Food Control Laboratory, Damascus	Supply and installation of Equipment	<ul style="list-style-type: none"> -Installation of labo. tables -Preparatory works for electric wire, water pipe and installation of air conditioner, fume cupboards, etc. -Dust prevention works -Procurement of shelves for keeping small tool and equipment -Installation of fire extinguishes
Latakia Laboratory	Supply and installation of Equipment	<ul style="list-style-type: none"> -Modification of 2 rooms for laboratory -Installation of labo tables -Improving ceiling and floor -Preparatory works for electric wire, water pipe and installation of air conditioners, fume cupboard, etc. -Dust preventing works -Procurement of shelves for keeping small tool and equipment -Improving electric switch-board
Aleppo Laboratory	Supply and installation of Equipment	<ul style="list-style-type: none"> -Modification of 3 rooms for laboratory -Improving ceiling and floor -Installation of labo tables -Preparatory works for electric wire, water pipe and installation of air conditioners, etc. -Dust preventing works -Procurement of shelves for keeping small tool and equipment -Improving electric switch-board
Homs Laboratory	Supply and installation of Equipment	<ul style="list-style-type: none"> -Modification of 2 rooms for laboratory -Improving ceiling and floor -Installation of labo tables -Preparatory works for electric wire, water pipe and installation of air conditioners, fume cupboard, etc. -Dust preventing works -Procurement of shelves for keeping small tool and equipment -Improving electric switch-board



Chapter 4 Project Evaluation and Conclusions

Chapter 4. Project Evaluation and Conclusions

4-1 Effects expected from the Project

The direct benefit of the Project is the strengthening of the food quality control activities of the Ministry of Supply with the supply of modern analysis equipment.

It also contributes indirectly to the promotion of a proper agricultural development and a sound food industry of the Syrian Arab Republic through the improvement of analysis capability of the Ministry's laboratories.

(1) Direct Effect

Table 4-1 Current Problems and Effects Expected from This Project

No	Current problems	Countermeasures	Improvement
1	Analysis of all the values stipulated in Syrian Standard is not possible due to insufficient equipment	Improvement of equipment in the four main laboratories, especially the ones for trace analyzer and their ancillary equipment	As far as food concerns the analysis of stipulated values becomes possible in Syria
2	Analytical items and number of analysis are both insufficient due to a lack of analytical equipment	Improvement of analytical equipment at central food control laboratory. Improvement of food analytical equipment for local laboratories at Aleppo, Homs and Latakia	A wider range of food composition, additives, pesticide residue, heavy metals, pathogenic microorganisms are analyzed with higher accuracy and in less time.
3	Samples taken change its condition due to shortage of necessary equipment for pretreatment, washing etc. A large analytical error by inadequate pretreatment technology and cleaning of tools & equipment.	Improvement of the equipment for sampling. Improvement of the ancillary equipment and tools necessary for pretreatment and washing.	Less analytical errors and accuracy will be secured. Sample will not be contaminated while being analyzed. Pretreatment can be made quickly and efficiently
4	Because of limited capacity of analysis, it is difficult to accept analytical work, even if they are requested from other organizations in other areas.	Analytical capacity greatly improved because from pretreatment to final analysis is designed as integral system. It will become possible to accept request from other organization for analysis.	Request for analysis coming from other laboratories and other organizations shall be accepted. Benefit to analysis activities of whole nation.
5	Environment of laboratory was not protected. Besides quality of utility such as water and electricity has been insufficient.	Air conditioners shall be installed at important rooms. Improvement by double door and prohibition of dirty footwear for dust control is planned.	Accuracy of the equipment even in high temperature and humidity is secured. Generation of dust reduces and maintenance work for the equipment will become easy.
6	Training Effect has been poor due to shortage of training tools & equipment	Introduction of training tools and equipment	Training work shall be effective

(2) Indirect Effect

It will have several positive effects on the society:

- (1) It will improve food safety with a reinforced capacity to detect contaminated food that might affect the health of the Syrians.
- (2) It will promote sound growth of the food industry.
- (3) It will enhance fair, safe trade by overseeing the safety of import/export foods.

Growth in the quantity of food production due to improved productivity, and promotion of the food processing industry resulted a decline in the quality and safety of food. Through the quality control activities, this Project aims to provide proper guidance regarding the safety of foods distributed into the domestic market in order to adjust the balance between increased food production and a qualitative decline.

4-2 Evaluation of the Project

The target of this Project is to upgrade food analyzing equipment at the central food control laboratory in Damascus and laboratories in Aleppo, Homs and Latakia in order to increase efficiency of food safety control activities conducted by the Ministry. The evaluation of this attempt is as follows:

(1) Effects of equipment improvement

*Expands the range of analysis

Analysis of residual agricultural chemicals, antibiotics and food additives has not been possible due to a lack of analyzing equipment at the laboratories of the Ministry. The equipment procured under this Project enables them to conduct trace analysis with a precision of $1/10^6$ (ppm) - $1/10^9$ (ppm) to realize a wide range of analysis.

*Reinforce analyzing ability

The number of samples that can be analyzed has been limited since such operations have relied on time-consuming methods at laboratories of the Ministry. With this improved equipment, the analyses can be conducted swiftly, and therefore, greatly reinforcing analyzing capacity at each laboratory.

*Realize a better reproducibility

The new equipment will improve reproducibility, resulting in highly reliable analyses.

(2) Evaluation of the Project

The above stated effects shall materialize by implementing of this Project. These effects are indispensable for fostering balanced industries to prevent the lowering of quality and safety of foods accompanied with the increase of foods by the improvement of productivity in agricultural produce and promotion of food processing industries in order to attain self-sufficiency.

It will enable the effective quality control operation of the Ministry to cover a wider range of food with more accurate and swift analysis and with a higher reliability.

It will also promote the food safety operation of the Syria steadily, which was not carried out on a full scale due to the shortage of equipment in the laboratories, although laws, regulations and system are well prepared by the assistance of FAO.

4-3 Recommendations

This Project deals with specific activities related to reinforcement of food quality control by the Ministry of Supply for the protection of consumers. The following recommendations are presented for the implementation of the Project as well as the smooth and effective operation of food quality control services to attain their ultimate goals.

(1) Appropriate budget and personnel arrangements by Syria

In November 1994, the People's Assembly ratified the strengthening of food quality control activities as one of Syria's most important policies for 1995. There should be no major problems with budget and personnel arrangements, but it is essential to allocate the budget and to recruit the necessary personnel by the time operations commence at the four laboratories.

(2) Improvement of analytical technology with technical assistance

In order to improve the analytical capabilities of Syrian personnel, it is advisable to conduct proper training with foreign technical assistance in the field of sample preparation, operation of analysis, reading charts, evaluation of data and maintenance of equipment. A plan for the training to be conducted in domestic and overseas shall be prepared and undertaken effectively.

(3) Necessity of cooperation with related agencies in Syria

The safety of foods distributed in the market cannot be attained solely through the efforts of the Ministry of Supply and Internal Trade. Cooperation and integration with

the Ministry of Agriculture, Industry and Health is vital in the phases of production, processing and consumption. It is desirable to confirm the role and capability of each related agency to prepare the framework each agency should assume for ensuring food safety. Each agency must cooperate to ensure even more efficient activities.

(4) Appropriate control activity in the way of encouraging industrial growth

This Project is to realize the outstanding effects previously stated. The activity of food control will emphasize efficient enforcement rather than prohibition to avoid depression of the industry. Personnel who conduct inspections and analyses must be of high moral character.

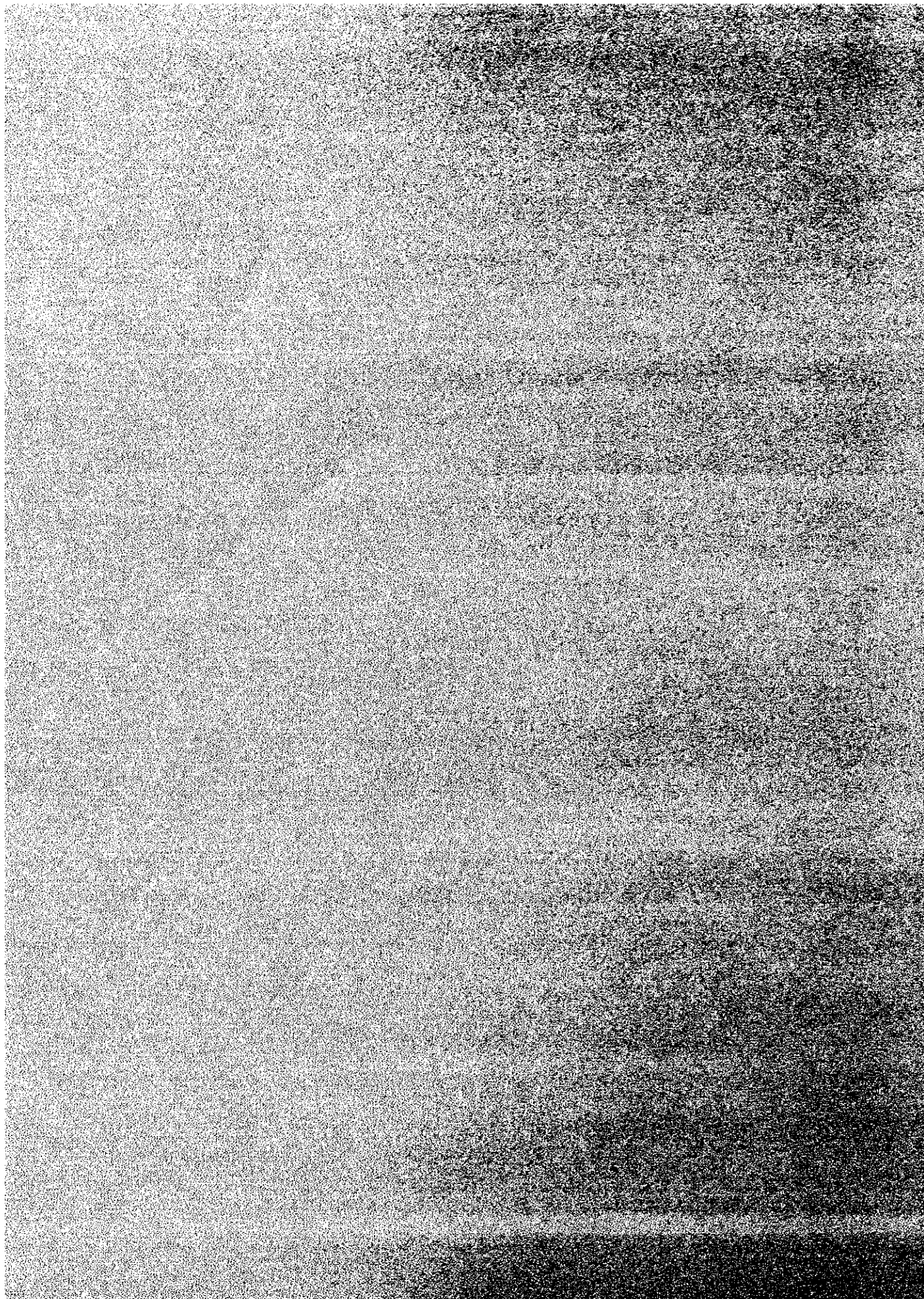
(5) Improvement of sampling techniques

Samples that will be used for analysis are taken by inspectors of the Quality Control Department of the Ministry and brought to the food laboratories. The samples that are taken must accurately represent all of the products and must be handled and stored correctly to avoid qualitative and quantitative changes after sampling.

(6) Funds to replace equipment in future

Some of the equipment introduced under this Project will be depreciated in the year of 2000 and will need to be replaced. For this purpose, the government must set aside 10,000,000 Syrian pounds per year, starting from 1996, as a fund for replacing the equipment and secure a budget for this purpose.

Appendix



1. Members of the study team

<u>Name</u>	<u>Speciality and Title</u>
Takahiko SUGIYAMA	Leader Development Specialist, JICA
Hisatoshi OKUBO	Project Coordinator First Basic Design Study Div. Grant Aid Study & Design Department, JICA
Makoto YAMADA	Chief Consultant Overseas Merchandise Inspection Co. Ltd.
Kazumi UENO	Equipment Planner / Quantity Surveyor Overseas Merchandise Inspection Co. Ltd.

2. Study schedule

			Movement	Activities
1	Nov. 25	Fri.	Tolyo→Paris; Mr. Okubo + Consultants	
2	Nov. 26	Sat.	Paris→Damascus; Mr. Okubo + Consultants	
3	Nov. 27	Sun.	Arrived at Damascus; Mr. Sugiyama	Coutesy visit to JICA, Embassy of Japan, SPC and MOS
4	Nov. 28	Mon.		Meeting with Minister and MOS, Site survey of Central Lab.
5	Nov. 29	Tue.	Damascus→Homs→Hama→Aleppo	Meetina and Site survey (Homs, Hama, Aleppo)
6	Nov. 30	Wed.	Aleppo→Edlep→Latakia	Meeting and Site survey (Aleppo, Edlep, Latakia)
7	Dec. 1	Thu.	Latakia→Damascus	Meeting and Site survey (Latakia)
8	Dec. 2	Fri.		Document review and Team meeting
9	Dec. 3	Sat.		Visit to SASMO, Meeting with MOS
10	Dec. 4	Sun		Meeting with MOS
11	Dec. 5	Mon.		Signing of Minutes, Meeting of Minister of MOS, Visit to JICA & Embassy of Japan
12	Dec. 6	Tue.	Damascus→Paris; Mr. Sugiyama	Meeting with Central Lab.
13	Dec. 7	Wed.		Site survey of Central Lab. , Visit to Industrial Testing & Research Center
14	Dec. 8	Thu.		Visit to Damascus Univ. , Meeting with Central Lab.
15	Dec. 9	Fri.	Damascus→Paris; Mr. Okubo	Document review
			Damascus→Aleppo (Consultants)	
16	Dec. 10	Sat.		Site survey and meeting (Aleppo)
17	Dec. 11	Sun.	Aleppo→Homs→Damascus (Consultants)	Site survey and meeting (Homs)
18	Dec. 12	Mon.		Site survey and meeting (Damascus Central Lab.)
19	Dec. 13	Tue.	Damascus→Latakia (Consultants)	Visit to Central Lab. of Pesticide, Site survey (Latakia)
20	Dec. 14	Wed.	Latakia→Damascus (Consultants)	Meeting and site survey(Latakia)
21	Dec. 15	Thu.		Visit to Public Health Lab, JICA, Embassy of Japan, Market survey
22	Dec. 16	Fri.		Document review
23	Dec. 17	Sat.		Market survey, Meeting with MOS
24	Dec. 18	Sun.	Damascus→ Paris (Consultants)	
25	Dec. 19	Mon.	Paris→Tokyo (Consultants)	

3 . List of People Interviews

* Embassy of Japan

Ambassador extraordinary and plenipotentiary

Mr. Minoru KUBOTA

Counsellor

Mr. Keiichi HASEGAWA

Attache

Mr. Hideaki YAMAMOTO

* JICA Syria Office

Resident Representative

Mr. Takeshi KOMORI

Mr. Izumi TANAKA

Public relation manager

Mr. Anwar Brayez

* JOCV

Naoki TAKECHI (MOS, Central Laboratory, Damascus)

Kan TOMOTANI (Ministry of Industry, Industrial Testing and Research Center)

* STATE PLANNING COMMISSION

Director of Scientific and Technical Cooperation

Mr. Bassam Al-Sibae

Assistant of Director of Scientific and Technical Cooperation

Ms. Ilhaam Murad

* Ministry of Supply & Internal Trade

Minister

Mr. N. Akaash

Deputy Minister

Mr. M. Zhour

Public Relation Director

Mr. Y. Hammoude

Director of Technical affairs

Dr. Abdul Latif Baroudi

Deputy director of Technical affairs

Dr. George Botros

* Central Laboratory

Director of the Central Laboratory

Dr. Muhamad Rateb Salam

Head of food section	Ms. Rabaa Khattab
Head of non-food section	Mr. Essa Rizch
Head of pollution section	Ms. Baka Tiro
* Homs Directorate of Supply	
Director	Mr. Farouk AL Eter
Director of Laboratory	Mr. Nabeeh Sibai
* Governor of Homs	Mr. Nagi Otri
* Hama Directorate of Supply	
Director	Mr. Abd-Al-Razaak Al-Ramal
Director of Laboratory	Mr. Faruk Magmume
* Aleppo Directorate of Supply	
Director	Mr. Mubmad-Baha-Badngki
Deputy Director	Mr. Muhmad-Nzir-Muti
Deputy Director, Technical	Mr. Haysam-Turkmani
Director of Aleppo Laboratory	Mr. Fowzi Omar
* Governor of Aleppo	Mr. Mostafa Mero
* Idleb Directorate of Supply	
Director	Mr. Sattuf Al-Anan
Director of Idleb Laboratory	Mr. Naser Batal
* Latakia Directorate of Supply	
Director	Mr. Salah Abdul Karim
Deputy Director	Mr. Mohammad Hachem Bazydo
Director of Latakia Laboratory	Mr. Muhammand. N. kayyal
* Governor of Latakia	Mr. Abdul Menem Hamwi

* Tartous Directorate of Supply)

Director Mr. Ali-Salame

Director of Tartous Laboratory Mr. Galil Ubued

* The Syrian Arab Organization for Standard & Metrology: SASMO

General Director Dr. Nazir Koussa

Food office Mr. Abdulrazza Alhomsy

* Damascus Directorate of Supply

Director of Supply Mr. Sami Omari

* Jolan Mill, Damascus

Head of Mill Mr. Mahmod Nemer

Head of Central Laboratory Mr. Faud Hobbi

* Damascus University, Faculty of Agriculture

Dean Faculty of Agriculture Mr. Kayyal Hamed

Vice Dean, Faculty of Agriculture Mr. Adel Safar

Head Dept. Food Science Mr. Karam Al-Odeh

* Industrial Testing and Research Center)

Director Mr. Nabil Al-Uoon

* Central Laboratory of Pesticide

Head Mr. Taysien shak oman

* Foreign Trade Center

Assistant Head Manager Mr. Farook Nassri

Manager control of quality Mr. Taher Taha

* Public Health Laboratory, Ministry of Health

Director

Dr. Fouad Harb

Chief of Food & Drinking water Laboratory

Ms. Maycoon Nasri

4. Minutes of Discussion

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT FOR
IMPROVEMENT OF LABORATORIES FOR FOOD QUALITY CONTROL
IN
THE SYRIAN ARAB REPUBLIC

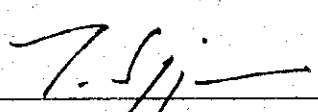
In response to a request from the Government of the Syrian Arab Republic, the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement of Laboratories for Food Quality Control in the Syrian Arab Republic (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Syria a study team, headed by Mr. Takahiko Sugiyama, Development Specialist of JICA, from November 26 to December 18, 1994.

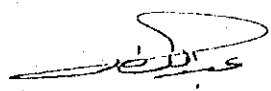
The team held discussions with the officials concerned of the Government of Syria and conducted field surveys.

In the course of discussions and field surveys, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study report.

Damascus, December 5, 1994



Mr. Takahiko Sugiyama
Team Leader
Basic Design Study Team
JICA



Dr. Abdul Latif Baroudi
Director of Technical Affairs
Ministry of Supply & Internal Trade
The Syrian Arab Republic

Verified by:

Mr. Nadim Akkash
Minister
Ministry of Supply & Internal Trade
The Syrian Arab Republic

ATTACHMENT

1. Objective

The objective of the Project is to supplement necessary equipment to 4 laboratories of the Ministry of Supply & Internal Trade in order to improve their analytical capacity for food quality control.

2. Project sites

The Project sites are the following four laboratories.

(See Map in Annex I)

Central laboratory in Damascus

Aleppo, Latakia and Homs Laboratories

3. Executing agency

The Ministry of Supply & Internal Trade is the responsible Ministry and the Department of Technical Affairs in the Ministry of Supply & Internal Trade is the implementation agency.

4. Items requested by the Government of Syria

The items requested by the Syrian side are shown in a priority order in ANNEX II .

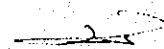
However, the final components of the Project will be decided after further studies in Japan.

5. Japan's Grant Aid system

1)The Government of Syria has understood the system of Japan's Grant Aid explained by the Team (ANNEX III).

2)The Government of Syria will take necessary measures described in Annex IV for smooth implementation of the Project, on condition that the Grant Aid by the Government of Japan is extended to the Project.

75.



2/13

6. Schedule of the Study

- 1) The consultants will proceed to further studies in Syria until December 18, 1994.
- 2) JICA will prepare the final report in English and send it to the Government of Syria around April, 1995.

7. Other relevant issues

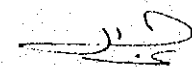
- 1) The Project title has been changed from the original "Development and Expanding of Laboratories in Ministry of Supply and Internal Trade" to "The Project for Improvement of Laboratories for Food Quality Control in the Syrian Arab Republic".
- 2) The Syrian side has stated that technical cooperation from Japan in the following forms and fields are needed for the implementation of the Project. The Team has suggested that the Syrian side submit official requests through the diplomatic channels and that they seek for advices from the JICA office in this regard.
 - a) forms of technical cooperation
 - dispatch of experts
 - dispatch of JOCVs
 - training in Japan
 - b) field
 - Food quality control
- 3) On condition that Japan's Grant Aid is extended to the Project:
 - a) the Ministry of Supply & Internal Trade will provide necessary personnel for effective operation and maintenance of the equipment and apparatuses procured under the Project.
 - b) the Ministry of Supply & Internal Trade will conduct necessary refurbishment and renovation of facilities of the laboratories to meet the requirement for the equipment and apparatuses procured under the Project.

c) in connection of a) and b) above, the Ministry of Supply & Internal Trade will secure necessary budget to be allocated for the Project.

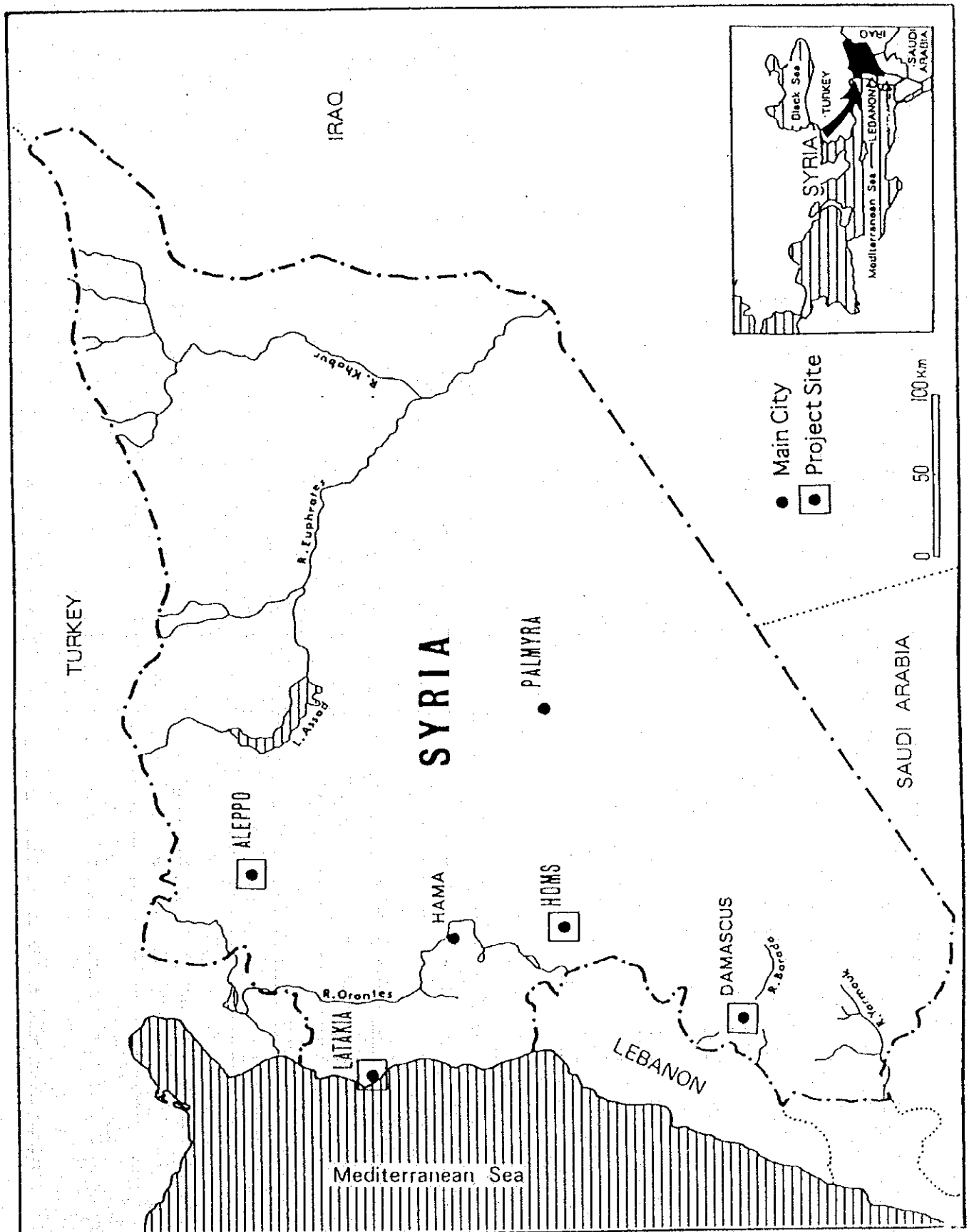
4) The following criteria will be used for selection of the final components for the Project:

- a) economic viability of the Project
- b) priority and urgency of the equipment
- c) analytical items and frequency to be conducted
- d) technical competence of staff assigned to the laboratories
- e) operation and maintenance cost
- f) environmental hazards

7.57



ANNEX I



ANNEX II

Item requested by the Syrian side

No	Equipment	Project site								Total
		Damascus		Homs		Latakia		Aleppo		
		P'ty	Q'ty	P'ty	Q'ty	P'ty	Q'ty	P'ty	Q'ty	
1	Abbe's refractometer	C	1	B	1	A	1	A	1	4
2	Air conditioner	A	2	A	2	A	2	A	2	8
3	Atomic absorption spectrophotometer	A	1	A	1	A	1	A	1	4
4	Autoclave	B	1	A	1	A	1	B	1	4
5	Automatic water content meter	A	1	A	1	A	1	A	1	4
6	Biological microscope	A	1	B	1	A	1	B	1	4
7	Brix meter	A	1	B	1	B	1	C	1	4
8	Camera	C	1	C	1	B	1	B	1	4
9	Can Testing Set	A	1	A	1	B	1	A	1	4
10	Centrifuge	B	1	B	1	C	1	A	1	4
11	Clean bench	A	1	A	1	A	1	B	1	4
12	Colony counter	B	1	A	1	A	1	A	1	4
13	Color meter	A	1	A	1	A	1	B	1	4
14	Conductivity meter	A	1	A	1	C	1	B	1	4
15	Constant pressure steam sterilizer	B	1	A	1	A	1	A	1	4
16	Constant temperature and humidity chamber	B	1	A	1	B	1	A	1	4
17	Constant temperature water bath	B	1	B	1	A	1	A	1	4
18	Cool water circulator (w/aspirator)	B	1	B	1	B	1	B	1	4
19	Copy machine	A	1	C	1	A	1	A	1	4
20	Crusher	A	1	B	1	C	1	A	1	4
21	Densitometer	A	1	A	1	A	1	A	1	4
22	Device for determination of CO2 in Beverages	B	1	A	1	A	1	A	1	4
23	Distilled water maker	B	1	A	1	C	1	B	1	4
24	Drying oven	C	1	A	1	A	1	A	1	4
25	Drying Shelf	A	3	A	1	A	1	A	1	6
26	Electric furnace	C	1	A	1	B	1	C	1	4
27	Electronic balance	B	2	C	1	A	2	B	1	6
28	Flame spectrophotometer	A	1	A	1	A	1	A	1	4
29	Fluorescence spectrophotometer	A	1	A	1	A	1	A	1	4
30	Food plate	A	1	C	1	B	1	C	1	4
31	Food stamp	A	1	A	1	A	1	B	1	4
32	Freezer	C	2					C	1	3
33	Fume cupboard	A	1	A	1	B	1	A	1	4
34	Gas chromatograph	A	2	A	2	A	2	A	2	8
35	Gas chromatograph (TEA)	A	2	A	1	A	1	A	1	5
36	Glass Instruments	B	1	B	1	A	1	A	1	4
37	Glovebox	A	1	C	1	A	1	A	1	4
38	Heavy Metal Treatment Apparatus	A	1	B	1	B	1	B	1	4
39	High performance liquid chromatograph	A	1	A	1	A	1	A	1	4
40	Homogenizer	B	1	B	1	B	1	A	1	4
41	Hot air drying type sterilizer	B	1	A	1	B	1	A	1	4
42	Hot Plate Stirrer	B	1	C	1	B	1	B	1	4
43	Hydrometer	B	1	A	1	B	1	B	1	4

P'ty : Priority , Q'ty : Quantity

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Items requested by the Syrian side (to be continued)

No	Equipment	Project site								Total
		Damascus		Homs		Latakia		Aleppo		
		P'ty	Q'ty	P'ty	Q'ty	P'ty	Q'ty	P'ty	Q'ty	
44	Ice making machine	A	2	A	1	B	1	B	1	5
45	Incubator	C	1	B	1	B	1	C	1	4
46	Kent and Jones	A	1	A	1	B	1	A	1	4
47	Kit for identification of meat	A	1	A	1	A	1	B	1	4
48	Mercury Analyzer	A	1	B	1	A	1	A	1	4
49	Microbiological testing kit	A	4	A	1	A	1	B	1	7
50	Microwave heater	A	3	A	1	A	1	C	1	6
51	Near infrared spectrophotometer	A	1	A	1	A	1	A	1	4
52	Oil bath	A	1	B	2	A	2	A	1	6
53	Over head projector	C	1					C	1	2
54	Personal computer	A	1	B	1	A	1	A	1	4
55	Petrifilm	B	1	B	1	C	1	A	1	4
56	pH meter	B	2	B	1	B	1	B	1	5
57	Pipette cleaner	A	1	A	1	B	1	A	1	4
58	Polarimeter	B	1	A	1	A	1	C	1	4
59	Refrigerated centrifuge	A	1	C	1	A	1	B	1	4
60	Refrigerator	C	2					C	1	3
61	Rotary evaporator	B	2	B	2	A	2	A	1	7
62	Sample Kit	A	1	A	1	B	1	A	1	4
63	Sample mill	A	1	A	1	C	1	B	1	4
64	Shaker	A	1	A	1	C	1	C	1	4
65	Shaking water bath	A	1	A	1	C	1	C	1	4
66	Sieve Set	A	1	C	1	B	1	A	1	4
67	Slide type projector	A	1					C	1	2
68	Solid phase extraction vacuum manifold	B	1	A	1	A	1	B	1	4
69	Soxlet extractor	B	2	C	1	C	1	C	2	6
70	Speedy fat extraction analyzer	B	1	C	1	B	1	C	1	4
71	Stabilizer	A	5	A	5	A	5	A	5	20
72	Stereoscopic Microscope	A	1	A	1	A	1	A	1	4
73	Stomacher lab. blender	C	1	B	1	B	1	B	1	4
74	Thin layer chromatograph	B	1	C	1	A	1	A	1	4
75	Turbidimeter	A	1	B	1	B	1	B	1	4
76	Ultra violet lamp	B	1	B	1	A	1	B	1	4
77	Ultrasonic cleaner	B	3	A	1	A	1	A	1	6
78	UV/VIS spectrophotometer	B	1	A	1	A	1	A	1	4
79	Vacuum type drying bath	A	1	B	1	A	1	A	1	4
80	Vehicle with refrigerating box	A	1	A	1	A	1	A	1	4
81	Viscosity meter for oil	A	1	C	1	A	1	A	1	4
82	Water activity meter	B	1	A	1	C	1	A	1	4
83	Water bath	C	1	C	1	C	1	C	1	4
84	Water bath (low temperature)	A	1	A	1	B	1	B	1	4
85	Spare parts	A	1	A	1	A	1	A	1	4
Total			108		89		90		92	379

P'ty : Priority , Q'ty : Quantity

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ANNEX III

Japan's Grant Aid Scheme

1. Japan's Grant Aid Procedures

1) The Japan's Grant Aid Program is executed through the following procedures.

- Application; Request made by a recipient country
- Study; Basic Design Study conducted by JICA
- Appraisal & Approval; Appraisal by the Government of Japan and Approval by the Cabinet
- Determination of Implementation; The Notes exchanged between the Governments of Japan and the recipient country

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether it is eligible for Japan's Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firms(s).

Thirdly, the Government of Japan appraises the project to see whether it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA. The results are then submitted to the Cabinet for approval.

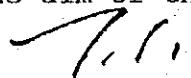
Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in such matters as preparing tenders, contract and so on.

2. Basic Design study

1) Contents of the Study

The aim of the study (Basic Design Study) conducted by JICA on



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a requested project is to provide a basic document necessary for the appraisal of the project by the Japanese Government.

The contents of the Study are as follows:

- a) Confirmation of the background, objectives and benefits of the requested project and also institutional capacity of agencies concerned with the recipient country necessary for the project's implementation.
- b) Evaluation of the appropriateness of the project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the project.
- d) Preparation of the basic design of the project.
- e) Estimation of costs of the project.

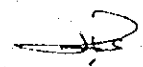
The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme. The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the study, JICA uses (a) registered consulting firms(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firms(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firms(s) used for the study is(are) recommended by JICA to the recipient country to also work on the Project

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implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the new selection process be repeated.

3. Japan's Grant Aid Scheme

1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non reimbursable funds to procure facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is supplied through the donation of materials as such.

2) Exchange of Note (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant, etc., are confirmed.

3)" The period of the Grant Aid" means one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, products and services of Japanese origins or those the recipient country are to be purchased. When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting

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and procurement firms, are limited to "Japanese nationals".
(The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.)

5) Necessity of the "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required by the Government of the Recipient Country.

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- b) To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- c) To secure buildings prior to the procurement in case of the installation of equipment.
- d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
- f) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as

may be necessary for their entry into the recipient country and stay therein for the performance of their work.

7) "Proper Use"

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

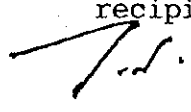
8) "Re-export"

The products purchased under the Grant should not be re-exported from the recipient country.

9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank of Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant by making payments in Japanese yen to cover the obligation incurred by the Government of the recipient country of its designated authority under the contracts verified.

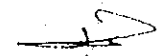
b) The payments will be made when payment request are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.



ANNEX IV

Necessary measures to be taken by the Government of Syria in case Japan's Grant Aid is executed.

1. To secure sites for the Project.
2. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site.
 - 1) Electricity distributing line to the site.
 - 2) City water distribution main to the site.
 - 3) Drainage city main to the site.
 - 4) Telephone trunk line and the main distribution panel of building.
 - 5) General furniture such as carpets, curtains, tables, chairs and others.
3. To bear commissions to the Japanese foreign exchange bank for the banking services based upon Banking Arrangement.
4. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation.
5. To accord Japanese Nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Syria and stay therein for the performance of their work.
6. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Syria with respect to the supply of the products and services under the verified contracts.
7. To maintain and use properly and effectively the equipment purchased under the Grant.
8. To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.



5. Technical Notes

TECHNICAL NOTES ON THE PROJECT FOR IMPROVEMENT OF LABORATORIES FOR FOOD QUALITY CONTROL IN THE SYRIAN ARAB REPUBLIC

The minutes of Discussion on the Basic Study (hereinafter referred as "the Study") on the Project for Improvement of Laboratories for Food Quality Control in the Syrian Arab Republic (hereinafter referred as "the Project") was concluded between JICA Basic Design Study Team (hereinafter referred as "JICA Team") and the Ministry of Supply & Internal Trade (hereinafter referred as "MOS") of the Government of the Syrian Arab Republic on December 5, 1994.

Following the conclusion of the Minutes of Discussion of the Project, JICA Team continued technical discussions and field survey in Syria up to December 17, 1994.

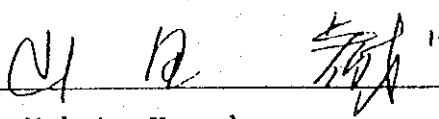
This is confirmed that JICA Team has collected technical data and information as follows:


- Facilities of Existing Building
- Existing Power Receiving Unit
- Floor Plan (Electricity and Water)
- Layout Plan of Equipment both Present and Future
- Existing Equipment list
- Record of Analyses for Past 5 years
- Analytical Item of Food
- Existing Staff
- Record of Food disputed by each Laboratory



Recurrent budget
Budget for Purchase of Equipment,
Plan of Operation
Renovation Cost Estimation

Damascus, December 17, 1994



Mr. Makoto Yamada
Chief Consultant
JICA Basic Design Study Team

Dr. Abdul Latif Baroudi
Director of Technical Affairs
Ministry of Supply & Internal Trade

6. Syrian National Standards

by The Syrian Arab Organization for Standard & Metrology (SASMO)

No.	Standard	Year	Item
1	41	1977	Cacao and its products
2	45	1993	Drinking water
3	46	1992	Standard methods for testing and analysis of drinking water
4	47	1992	Non-alcoholic carbonated beverage
5	48	1982	White sugar
6	53	1976	Fresh tomatoes
7	54	1976	Grape
8	55	1976	Pears
9	56	1976	Cucumbers
10	57	1976	Row vegetable
11	58	1976	Aubergines
12	59	1976	Onions
13	60	1976	Potatoes
14	61	1977	General terms for Fresh fruits and vegetables
15	63	1982	Apples
16	64	1977	Citrus fruits
17	72	1977	Canned Peas
18	74	1977	Edible salt (Sodium chloride)
19	77	1980	Kamar Al-Din
20	78	1980	Biscuit
21	79	1979	Dehydrated onion
22	80	1978	Luncheon meat
23	81	1978	Chopped meat
24	82	1978	Corned beef
25	83	1978	Meat and meat products sampling
26	84	1978	Meat and meat products determination of fat content
27	85	1978	Meat and meat products determination of nitrogen content
28	86	1978	Meat and meat products determination of nitrite content
29	141	1981	Canned sardines and sardine type products
30	142	1979	Canned tuna and bonito in water or oil
31	143	1990	Fresh and dried yeast
32	144	1979	Edible cotton seed oil
33	178	1984	Labanah
34	179	1985	Sugar beet
35	180	1979	Tomato paste
36	181	1979	Hydrogenated vegetable oil (vegetable ghee)
37	182	1979	Olive oil
38	191	1980	Natural mineral waters

No.	Standard	Year	Item
39	192	1978	Wheat flour and methods of testing
40	194	1980	Raw milk
41	195	1981	Sterilized milk and method of analysis
42	196	1981	Cows butter
43	197	1981	Dried milk for infants
44	198	1982	Cereal based foods for infants and children
45	199	1983	Yoghurt
46	204	1980	Raw sugar
47	221	1990	Canned Olives
48	222	1980	Canned galengi
49	223	1980	Canned chick Pea products
50	224	1981	Canned beans
51	225	1981	Canned Olives
52	226	1981	Jams and marmalade standard
53	227	1982	Glucose syrup
54	228	1982	Powdered dextrose
55	229	1982	Edible starch
56	230	1981	Vinegar
57	251	1981	Edible maize oil standard
58	252	1982	Edible sunflower seed oil
59	253	1981	Edible sugar bean oil
60	254	1981	Edible sesame seed oil
61	255	1983	Ground nut oil
62	256	1985	Coffee and Product - vocabulary
63	264	1982	Beer
64	265	1982	Tin plates for canned food stuffs
65	270	1988	Coffee- determination of caffeine content
66	285	1984	Methods of black tea analysis
67	286	1983	Black tea
68	287	1987	Green Coffee
69	288	1983	Margarine
70	289	1983	White cheese - first version
71	313	1985	Tehena
72	314	1991	Halawa teheniah
73	315	1984	Macaroni and rermiceli
74	316	1983	Chewing gum
75	317	1983	Ketch up
76	318	1984	Apricot
77	319	1985	Rice (first review)

No.	Standard	Year	Item
78	320	1985	Peas in Pods
79	365	1985	Special infant food made of vegetables
80	366	1985	Processed fruit based foods for infants and children
81	367	1985	Natural and concentrated vegetable or fruit juice
82	368	1985	Natural fruit drink
83	370	1985	Milk product ghee
84	375	1985	Shelf life food stuff (general principle)
85	376	1985	Artificial drink powder
86	384	1986	Chicken whole-shell eggs
87	386	1986	Storage of cereals and pulses
88	387	1986	Dried milk (first version)
89	402	1986	Irradiation food
90	403	1986	Code of practice for the operation
91	404	1986	Processed cheese
92	405	1986	Condensed milk
93	411	1986	Tea sampling
94	412	1987	Honey bees
95	413	1986	Edible coconut oil
96	417	1986	Cardamoms
97	418	1986	Spices and condiments
98	419	1986	Sampling spices and condiments /black and white pepper whole and grounds
99	428	1986	Dehydrated garlic
100	445	1986	Fresh olive
101	446	1986	Canned green beans
102	471	1987	Feed - cereal grains
103	472	1987	Syrian wheat
104	473	1987	Bread
105	496	1987	Moisture meter for cereals grains and oilseed
106	497	1988	Check of the calibration of moisture meters part2
107	498	1987	Dried apples
108	499	1987	Dried pears
109	500	1987	Dried peaches
110	510	1987	Coffee triers
111	511	1987	Green coffee in bags - sampling
112	512	1987	Green coffee in bags guide to storage and transport
113	513	1987	Green coffee sizes analysis manual sieving
114	514	1987	Green coffee - determination of propagation of
115	515	1987	Green coffee of factory visual examination- determination of foreign matter defect

No.	Standard	Year	Item
116	516	1987	Green coffee - determination of moisture content
117	536	1987	Fruit vegetables - physical in cold storage- definition measurement
118	537	1987	Fruit and vegetables ripening after cold storage
119	538	1987	Apples - guide to cold storage
120	539	1987	Code of practice for the processing & handling of quick frozen foods
121	540	1987	Quick frozen peas
122	541	1987	Canned okra
123	545	1987	Strawberries - guide storage
124	546	1987	Apricots - guide to cold storage
125	547	1987	Asparagus - guide to storage
126	548	1987	War potatoes - guide storage
127	549	1987	Dried Figs
128	550	1987	Edible gelatin
129	558	1987	Quick frozen green and wax beans
130	559	1987	Fresh cherries
131	560	1987	Fresh strawberries
132	561	1987	Fresh headed cabbages
133	562	1987	Fresh spinach
134	563	1987	Dried apricots
135	564	1987	Raisins (dried grapes)
136	568	1987	Phosphoric acid food grade
137	569	1988	Determination of the lactose content of milk
138	570	1988	Milk and milk products - determination of lactose in the presense of other reducing substances
139	571	1988	Dried milk products - deterioration of insolubility index
140	572	1987	Fresh plums
141	575	1987	Maximum levels for contaminants in food
142	576	1987	Sunflower seed for the manufacture of oil specification
143	577	1987	Melons
144	580	1988	Dicalcium phosphate - animal feed grade
145	583	1988	Shelled sweet kernels of apricots- specification
146	584	1988	Garlic
147	585	1988	Feed - mixed poultry feed
148	586	1988	Soya beans
149	600	1988	Meat and meat products - enumeration of microorganisms
150	601	1988	Oilseed residues - determination of moisture and volatile matter content
151	602	1988	Oilseed residues - determination of total ash

No.	Standard	Year	Item
152	603	1988	Oil seed residues - determination of insoluble in hydrochloric
153	604	1988	Oilseed - sampling
154	605	1988	Oil seed reduction of contract samples
155	606	1988	Oil seed determination of moisture and volatile matter content
156	607	1988	Durham wheat - determination of non
157	611	1988	Dried milk determination of moisture content toluene distillation methods
158	612	1988	Dried milk determination of scorched particles
159	613	1988	Dried milk determination of scorched particles
160	621	1988	Polyethylene films for packaging
161	624	1988	Edible ice
162	627	1988	Cereals - sampling
163	628	1988	Pulses in bags - sampling
164	629	1988	Oilseeds - determination of acidity of oils
165	630	1988	Oilseeds - determination of impurities content
166	631	1988	Oilseeds - determination of hexane extract
167	632	1988	Oilseeds residues determination of hexane extract called oil content
168	639	1988	Garlic - guide to cold storage
169	699	1989	Cereals - determination of density called mass per hectoliter
170	700	1989	Cereals and cereals products determination of moisture content
171	702	1989	Dicalcium phosphate animal feed grade- determination of moisture
172	703	1989	Dicalcium phosphate animal feed grade- determination of phosphorus
173	704	1989	Dicalcium phosphate animal feed grade- determination of calcium
174	705	1989	Dicalcium phosphate animal feed grade- determination of fluorine
175	706	1989	Dicalcium phosphate animal feed grade- determination of acid insoluble ash
176	707	1989	Animal and vegetable oils and fats - determination of saponification value
177	708	1989	Animal and vegetable oils and fats - determination of acid value and of acidity
178	709	1989	Thyme
179	710	1989	Citric acid monohydrate food grade
180	711	1989	Decorticated sweet almonds
181	725	1989	Spices and condiments - determination of moisture content entrainment methods
182	726	1989	Spices and condiments - determination of total ash
183	727	1989	Spices and condiments - determination of water insoluble ash

No.	Standard	Year	Item
184	728	1989	Spices and condiments - determination of acid insoluble ash
185	729	1989	Spices and condiments - determination of non-volatile ether extract
186	730	1989	Spices and condiments - determination of extraneous matter content
187	731	1989	Spices and condiments - determination of filth
188	743	1989	
189	744	1989	Information on package labels
190	759	1989	Animal and vegetable fats and oils - determination of moisture and volatile matter content
191	760	1989	Animal and vegetable fats and oils - determination of refractive index
192	761	1989	Animal and vegetable fats and oils - determination of iodine value
193	762	1989	Animal and vegetable fats and oils - determination of peroxide value
194	763	1989	Animal and vegetable fats and oils - determination of insoluble impurities content
195	769	1989	Dates
196	770	1989	Food colorings
197	797	1989	Animal and vegetable fats and oils - sampling
198	808	1990	Baking powder
199	809	1990	Artichokes
200	828	1990	Whole cumin - specification
201	829	1990	Coriander whole or ground
202	830	1990	Molasses
203	831	1990	Edible palm oil
204	832	1990	Palmitic acid
205	833	1990	Unshelled pistachio nuts
206	834	1990	Peanut - specification
207	835	1990	Blood meal as livestock feed
208	869	1990	Grape jelly
209	870	1990	Self rinsing flour
210	871	1990	Custard powder
211	872	1990	Grated desiccated coconut
212	873	1990	Mate (Paraguay tea)
213	874	1990	Walnut kernels
214	875	1990	Bouillions and consommés
215	886	1990	Vanillin
216	887	1990	Vanilla
217	888	1990	Toffees (caramel)
218	889	1990	Potato chips

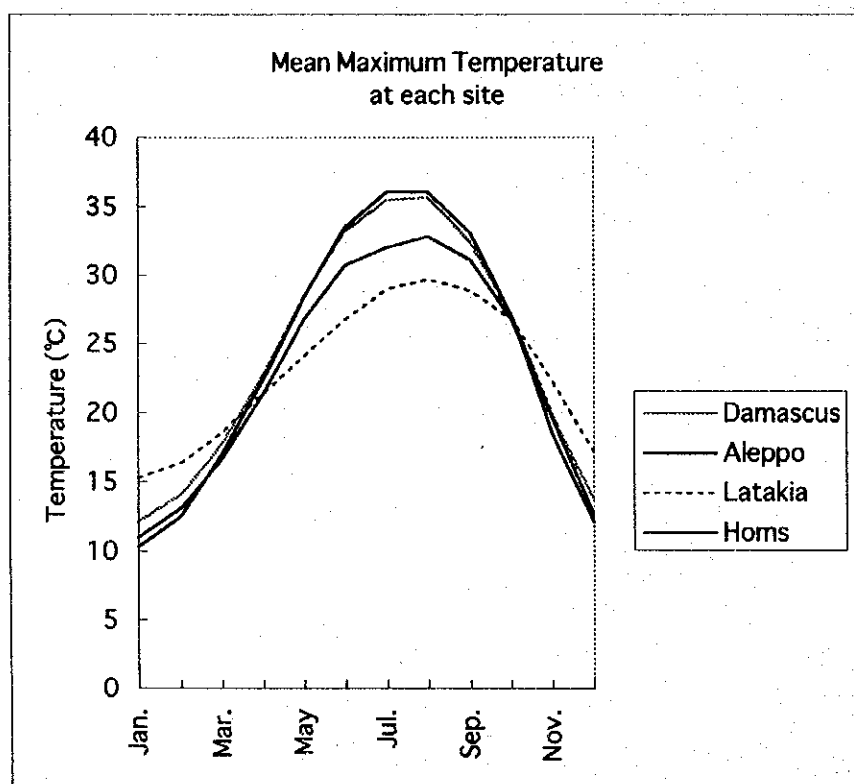
No.	Standard	Year	Item
219	890	1990	Snack (corn product)
220	908	1991	Sesame seeds
221	909	1991	Dry soup
222	925	1991	Bone meal as livestock feed
223	926	1991	Decorticated stone pine nuts
224	927	1991	Determination of the moisture content for drying fruit (nuts)
225	946	1991	Instant soluble coffee
226	947	1991	Ginger whole in pieces or ground
227	948	1991	Nutmeg whole or broken
228	961	1991	Bread - sampling
229	962	1992	Olive residues (olive eakes , first version)
230	963	1991	Canned peaches
231	975	1992	Black caraway and bland caraway
232	986	1992	Kasheaval cheese
233	987	1992	Chicken
234	988	1992	Canned pineapple
235	989	1992	Canned fruit cocktail
236	1012	1992	Flavel powder
237	1013	1992	Canned apricots
238	1014	1992	Mushrooms canned
239	1071	1992	Canned pears
240	1072	1992	Egg powder
241	1073	1992	Gelatin powder - edible food
242	1074	1992	Bread for special dietary uses birn
243	1075	1992	Confectionery - coating
244	1145	1992	Lactase
245	1146	1992	Water melon
246	1160	1993	Carrots
247	1161	1993	Cauliflowers
248	1162	1993	Cauliflowers - guide to cold storage and refrigerated transport
249	1182	1993	Raha - nougat
250	1183	1193	Decorticated hazel nuts
251	1209	1993	Aniseed (pimpernel anisum linneus) - specification
252	1210	1993	Pasteurized milk
253	1211	1993	Curry powder - specification
254	1230	1993	Ammonium carbonate food grade
255	1232	1993	Dried pepper mint
256	1299	1993	Chilli powder

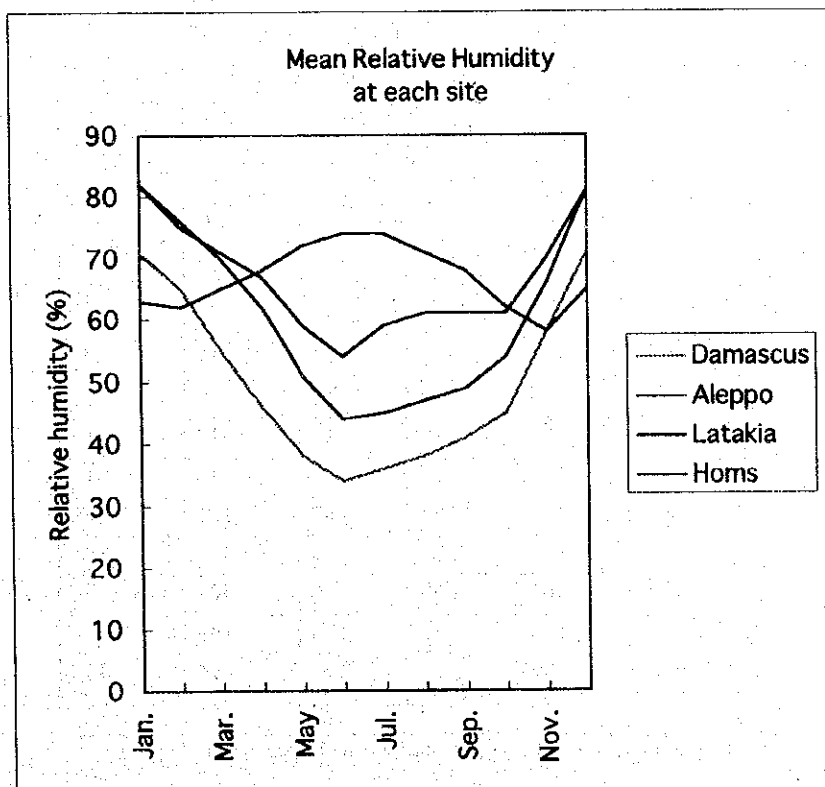
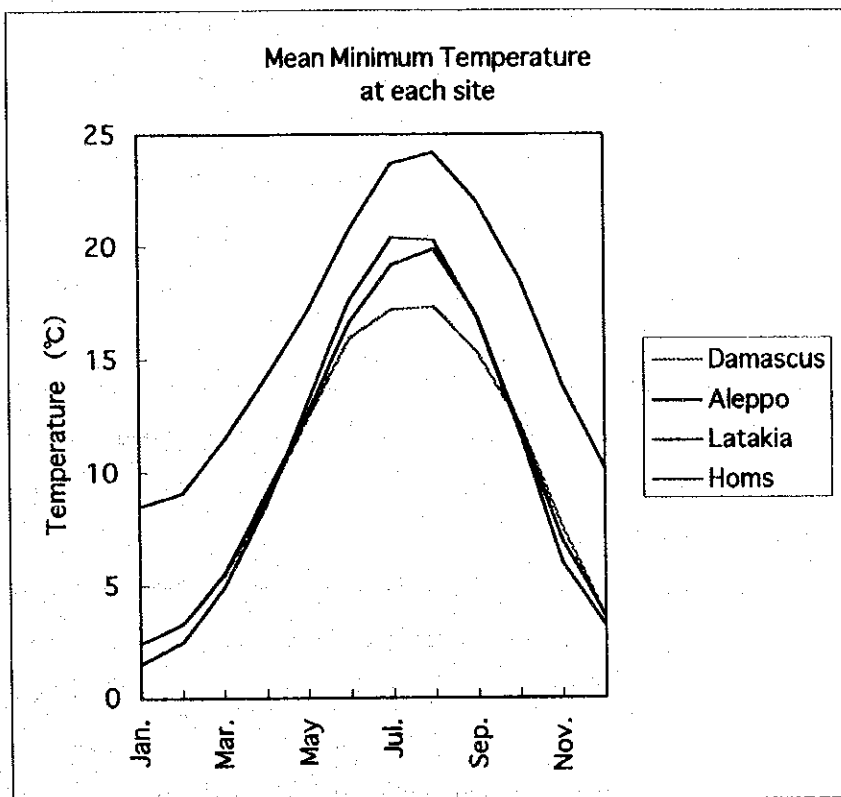
No.	Standard	Year	Item
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257	1300	1993	Pastrami
258	1301	1993	Cream
259	1316	1993	Carrots - guide storage
260	1317	1993	Mixed spices and condiments
261	1318	1993	Cottonseed oilcack as livestock feed
262	1319	1993	Soya bean meal
263	1340	1993	Whole mais (corn) meal
264	1341	1993	Frozen meat
265	1342	1993	Brandy
266	1352	1993	
267	1359	1993	Roasted coffee (whole, crushed and ground)
268	1360	1994	Cakes
269	1382	1994	Packaged peanuts
270	1385	1994	Chickpeas
271	1386	1994	Lontilis
272	1387	1994	Cream powder
273	1401	1994	Mayonnaise
274	1402	1994	Fish and fish products frozen fish
275	1407	1994	Corn flakes

7. Temperature and Humidity

		Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Mean Maximum	Damascus	12.1	14.1	17.8	22.8	28.5	33.2	35.5	35.7	32.4	27.1	19.8	13.7
Temperature	Aleppo	10.3	12.5	17.1	22.4	28.4	33.5	36.1	36.1	33.1	27.1	18.4	12.1
	Latakia	15.3	16.4	18.6	21.4	24.1	26.8	29	29.7	28.9	26.8	22.2	17.2
	Homs	11	13.1	16.7	21.4	26.8	30.7	32	32.8	31.1	26.8	19.5	12.7
Mean Minimum	Damascus	2.4	3.3	5.4	8.8	12.4	15.9	17.2	17.3	15.3	12.2	7.6	3.6
Temperature	Aleppo	1.5	2.5	4.9	8.6	13.1	17.6	20.4	20.3	16.8	11.8	6.0	3.2
	Latakia	8.5	9.1	11.4	14.2	17.1	20.7	23.7	24.2	22.0	18.6	13.9	10.2
	Homs	2.4	3.3	5.5	9.1	12.6	16.6	19.2	19.9	16.9	12.0	7.0	3.6
Mean Relative	Damascus	71	65	55	46	38	34	36	38	41	45	58	71
Humidity	Aleppo	82	76	70	62	51	44	45	47	49	54	66	81
	Latakia	63	62	65	68	72	74	74	71	68	62	58	65
	Homs	82	75	71	67	59	54	59	61	61	61	70	81





8. Outline of Agriculture in Syrian Arab Republic - Production, Processing, Export/Import -

(1) Agricultural Production

The agriculture is the mainstay of this country. It employs about 30% of total labor in the country and produce 18-25% of GDP (1980-1991). Not only it feeds the people but also supplies materials for agro-industry including export business and food processing factories.

In this country of semi-dry, little rain and a few irrigated fields, the agricultural production largely depends on the weather. There is more than twice a difference between a bumper crop and a bad one, which makes a large unstable element for economy.

Main agricultural products are wheat, barley cotton, lentil, olive, etc. all grow in rather dry climate. Wheat for food and barley for feed occupies about 2/3 of all cultivated field. Cotton is the most important export crop of the country and occupies 20-25% of all exported agricultural products.

Farmers in Syria raise livestock, grow various fruits vegetables and lentils. The livestock production is about 1/3 of all agricultural production. West coastal area is blessed with a favorable weather and the vegetable growing in greenhouse is developing quite fast. In 1993, the number of greenhouse is 44,812 covering 1,918 Ha. They grow vegetables like tomato and cucumber and are exporting some of their product.

Area and Production of Main crop (Unit: 1,000 ha, 1,000 ton)

		1986	1987	1988	1989	1990
Wheat	Production	1,969	1,656	2,067	1,020	2,070
	Area	1,098	1,183	1,101	1,240	1341
Barley	Production	1,116	576	2,836	271	846
	Area	1,548	1,569	1,844	2,892	2729
Maize	Production	74	57	90	109	133
	Area	47	36	49	56	60
Sugar beet	Production	440	458	222	411	422
	Area	13	18	10	22	21
Tobacco	Production	17	17	15	13	13
	Area	14	15	14	14	13
Olives	Production	415	221	487	121	460
	Area	308	323	349	359	391
Grapes	Production	501	433	570	407	424
	Area	113	113	115	109	109
Lentil	Production	63	71	171	64	110
	Area	67	89	132	188	131

Source : Central Bureau of Statistics, Ministry of Agriculture

Live stock Production

	1979-81	1988	1989	1990
Beef(1000ton)	28	29	29	27
Mutton(1000ton)	80	90	91	90
Goat(1000ton)	6	6	7	8
Chicken(1000ton)	57	73	57	63
Total meat(1000ton)	172	199	183	189
Number of caw (1000)	372	336	335	338
Milk per head (kg)	1,353	2,208	1,946	2,097
Total production of milk(1000ton)	504	742	652	709
Goat milk(1000ton)	74	68	67	55
Cheese(ton)	51,701	65,776	65,026	65,078
Butter including ghee(ton)	13,555	16,552	12,813	13,455
Egg (ton)	68,759	82,500	69,750	60,980
Honey (ton)	516	800	647	650

Source: FAO Yearbook, Production, Vol.44, 1990

The most important targets in the development program of this country are to achieve self-sufficiency in food by reducing a reliance on imported food. Also to expand the exports of agricultural produce in order to promote the earning of foreign currency. To achieve these targets, the government spent 60-70% of total budget allocated to agricultural field on irrigation system for the past 10 years. As the results of such government policy to increase production, various agricultural produce are recently produced stably. Partly is exported and partly sold to food processing industry and both are contributing to economic development of this country.

(2) Food Processing Industry

Recently food processing industry in this country is developing rapidly. A variety of food is on the market now with partial export. Such economic phenomenon is supposed to be due to following two points, which have been contributing to the development of the food industry in this country.

☆ The Government's Food Processing Promotion Policy
In the 6th National Development Five Year Plan (1986-90), [Promotion of agricultural development and food processing industry in order improve self-sufficiency rate] was cited as most important item in the plan. As the result, various materials have been supplied stably.

☆ Promotion of the Utilization of Private Capitals

Syria, who has been maintaining socialistic economic system, is now promoting liberalization of a part of enterprises in order to make great strides in the economic development. As a part of this, the government is strongly promoting the utilization of private capital and introduction of foreign capitals. Food industry became the attractive object of investment for the domestic enterpriser with small capitals. Many small enterprises appeared in succession one after another.

Syrians' nutrition intake level has always been high 3,168 calory/day about the same level as those of advanced nations of the world. All kinds of foods such as grains, vegetable, livestock, etc. are available. Syrians living in dry zone take a lot of olive oil, lemon, yogurt, honey, etc. Generally, Syrians households store dried olive, eggplant, okra, onion, carrot, etc. and depending on the need soak them in water and eat. They make condensed juice out of tomato, grape, citrus fruits, etc. They also make marmalade from peaches, apples, and plums.

Various kind of yogurt, pickles, dried meat have been made in each household and have been consumed for a long time. Food processing industry of Syria is on a extended line of these home made foods. For information, some of the items that cause hygienic problems are listed below:

Processed nuts	Aflatoxin
Butter and Cheese	Poisoning by Campylobacter
Soft drink and Juice	Color, Sweeteners
Pickles	Color
Honey	Pesticide
Meat	Pathogenic microorganism, Salmonella, E.coli, etc.
Edible oil	Mixture with others

Most of these foods are now produced by factories of the enterpriser newly joined in food industry by the promotion policy of the government to encourage private capitals.

The new companies generally have little experience in the quality control-management. It is said that the quality control is necessary on safety and hygiene of the quality. Among the above mentioned, the items that may

become food contamination problems are Aflatoxin content in nut materials, various food additives (preservatives, coloring agent, anti-oxidant, bleaching agent, fungicide (anti-mold agent), spices, etc.). The Aflatoxin is a toxic substance accumulated by the propagation of *Aspergillus flavus* in the insufficiently dried peanuts and pistachio under the atmosphere of inferior storage conditions. This toxic substance is highly carcinogenic. It is said that there are problems in the coloring agent and preservatives among food additives.

In this country, among the foods wheat, sugar, tea and rice are controlled by the government, the Ministry of Supply as to the price and quality. However, other foods, food products, edible oil and also many kinds of vegetable, fruits, meat, dairy products are not controlled and most of them are produced and sold by the above mentioned home industry scale. Consequently, consumers are suffering from the safety and hygienic problems.

(3) Export/Import of Agricultural Produce

Majority of the Syrian land belongs to desert zone, and her agriculture is largely affected by the weather. Especially, in the case of wheat for food and barley for feed, the production of a bad crop is often less than a half of the bumper crop. The import of food fluctuates by year but in the 1980s 20-30% of total import was occupied by food. In 1990s, due to the improvement in agricultural infrastructure such as irrigation facilities, the import of grains has been reduced. But the import of sugar and other food have increased. Consequently, there is no difference in the ratio of the import of agricultural produce among total import.

Import of Food

	1990		1991	
	1,000ton	million SP	1,000ton	million SP
Wheat	944	1,713	751	955
Rice	108	407	109	491
Barley	106	210	198	317
Maize	249	675	262	489
Wheat flour	491	1,279	301	635
Powder milk	4	56	5	102
Biscuit	16	4	—	—
Potato	4	33	8	75
Dates	12	21	4	10
Raw sugar	111	435	146	427
Sugar	254	1,190	275	1,055
Glucose	14	52	23	87

Tea	16	337	21	398
Coffee	2	22	10	156
Oil cake	57	228	77	281
Feed	29	157	27	143
Others	-	698	-	903
Total food		7,542(28%)		6,524(21%)
Total import		26,936(100%)		31,066(100%)

Export of Agricultural Produce

The largest foreign currency earner among the agricultural produce in this country are live sheep and vegetables such as potato, lentil, onion, tomato, etc. The majority is exported to neighboring countries of middle east. Recently, vegetable export to those countries is increasing rapidly.

Export of Food and Foodstuff

	1990		1991	
		million SP		million SP
Sheep	807	2,365	1,190	1,131
Goat	196	191	1,188	191
Butter	2,000ton	11	2,000ton	15
Egg	4	49	-	-
Wheat products	10	50	-	-
Barely products	10	13	-	-
Potato	109	588	267	350
Beans	2	74	-	-
Rentil	35	272	43	135
Tomato	15	99	29	158
Cucumber	8	88	8	56
Onion	22	127	31	121
Nuts	3	51	2	12
Dry fig	5	126	1	26
Pistachios	1	117	4	198
Water melon	35	167	51	328
Dry fruit	1	125	-	-
Dry nuts	7	243	9	539
Fruit juice	3	182	1	58
Tobacco	5	134	6	18
Others	-	530	-	650
Total foods		5,602(12%)		3,930(10 %)
Total export		47,281millionSP		38,503 millionSP

9. Estimation of Cost to be borne by the Syrian Government

The following work items will be carried out by the Syrian side at his own expense.

(1) Electricity

Cable connecting works from switch board to the Equipment including installation of the outlets, required meters and safety devices.

(2) Water

Plumbing works from connection to the required Equipment and supply of appropriate materials and fittings.

(3) Drains

Drainage works and supply of appropriate materials and fittings.

(4) Air conditioning

Preparation works of air conditioning installation.

(5) Exhaust and ventilation

Preparation works of installation for fume cupboard, duct and hood.

(6) Earth

To provide the earth and earth connection having sufficient capacity for required Equipment.

(7) Procurement of laboratory appliances

1) Laboratory tables

2) Laboratory shelves for storing reagents, small type equipment, samples, etc.

(8) Expanding of analysis space

Necessary modification works for expanding analysis space.

(9) Modification of the door for trace analysis room(s)

The followings are the costs borne by the Syrian Government, showing breakdown for each expense and each site.

(Units: 1,000 Syrian pound)

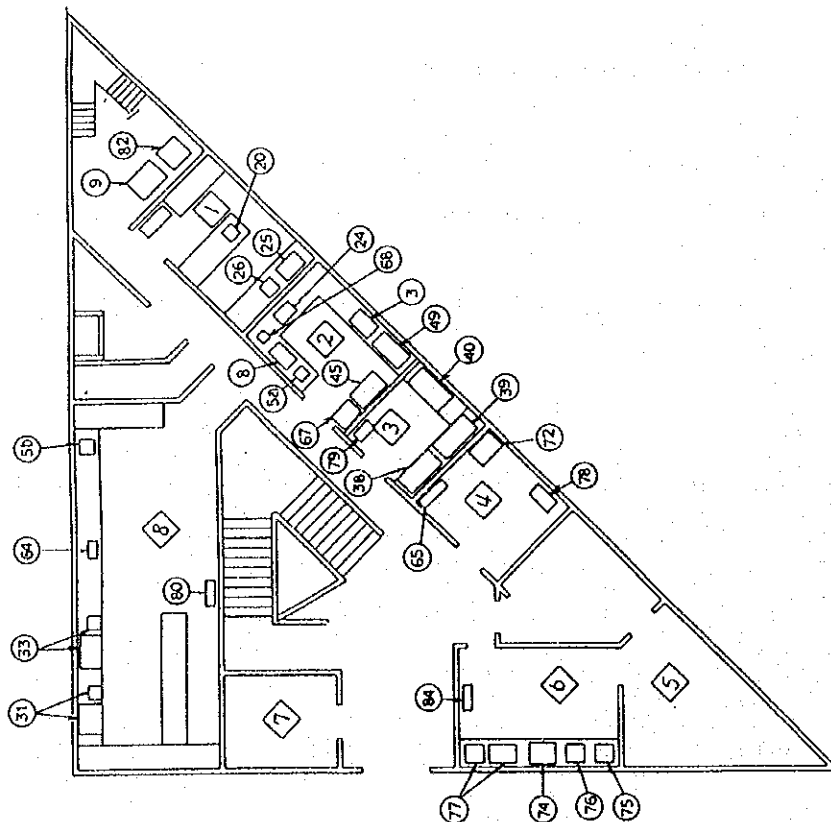
	Expanding of analysis space	Procurement of laboratory table	Works of electric wire, water pipe etc.	Dust prevention works	Procurement of Laboratory shelves	Providing extinguisher	Others	Total
Damascus	—	250	200	150	200	—	—	800
Aleppo	45 M2 3 rooms	300	250	50	150	100	—	850
Homs	50 M2 2 rooms	500	250	150	200	50	Ceiling 200 Floor 150	1,500
Latakia	30 M2 2 rooms	200	250	100	200	50	100	900

Central Food Control Laboratory (Damascus)

Ground Floor

Room No.	Item No.	Description	Qty	Table	Page	Sheet
1	ROOM NO. 1					
2	82	Heavy Metal Test Method Apparatus	1 set			
3	83	Shaker	1 set			
4	20	Vibrating Table for Oil	1 set			
5	21	Heating Equipment	1 set			
6	22	Gasoline Water Dispenser with heater	1 set			
7	ROOM NO. 2					
8	23	Grinding Mill Machine	1 set			
9	24	Grinding Mill Machine	1 set			
10	25	Grinding Mill Machine	1 set			
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83	98	Grinding Mill Machine	1 set			
84	99	Grinding Mill Machine	1 set			
85	100	Grinding Mill Machine	1 set			

10. Equipment Layout at Each Site



Central Food Control Laboratory (Damascus)

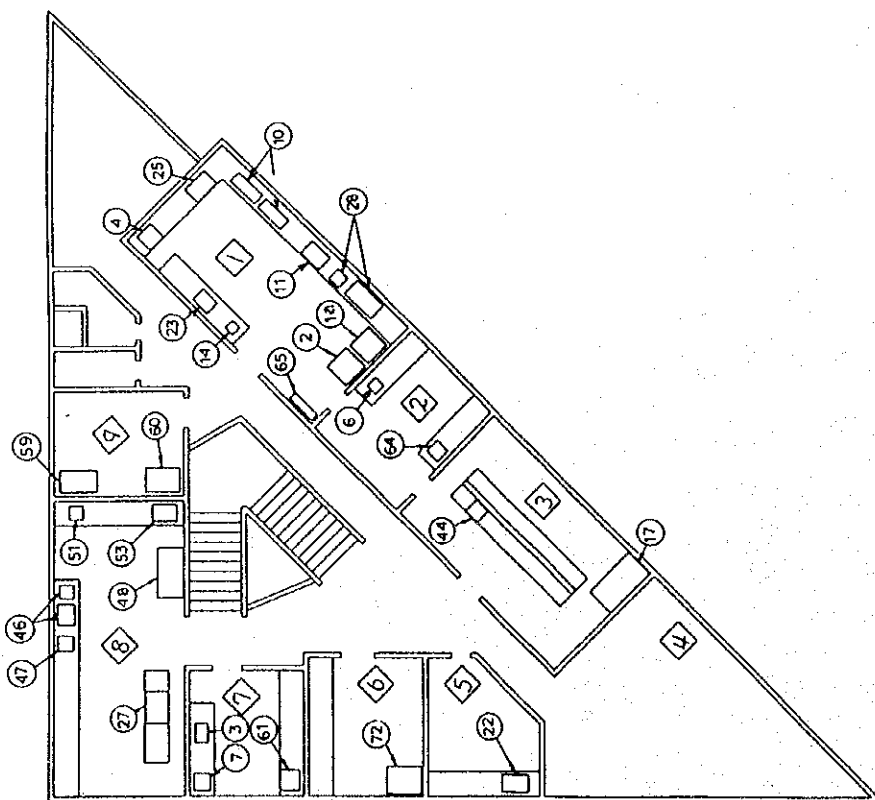
1st Floor

DAMASCUS 1st Floor				QTY	Size	Shed
Room	Item	Description				
No	No.					
1		ROOM NO.1		1.00		
	85	Office Shelf		1.00		
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	369	Office Shelf		1.00	</	

Central Food Control Laboratory (Damascus)

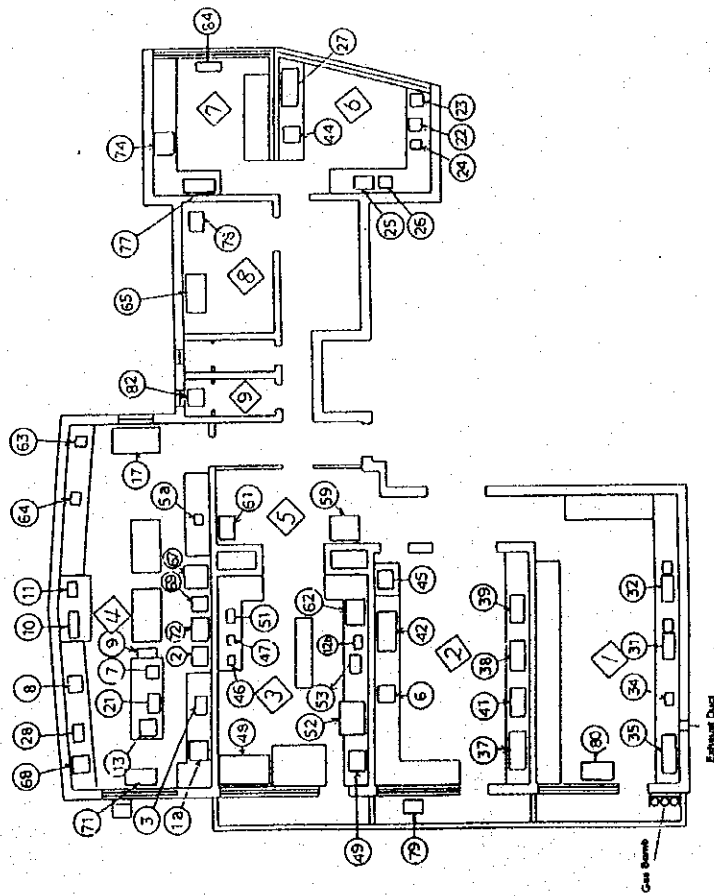
2nd Floor

Room No	Item No	Description	Qty	Table	Floor	Star
1	14	ROOM NO.1				
	14	1st Meter	1 set			
	22	Oil Bath	1 set			
	4	Electric Furnace	1 set			
	23	Refrigerator	1 set			
	24	Refrigerator	1 set			
	25	Refrigerator	1 set			
	26	Refrigerator	1 set			
	27	Refrigerator	1 set			
	28	Refrigerator	1 set			
	29	Refrigerator	1 set			
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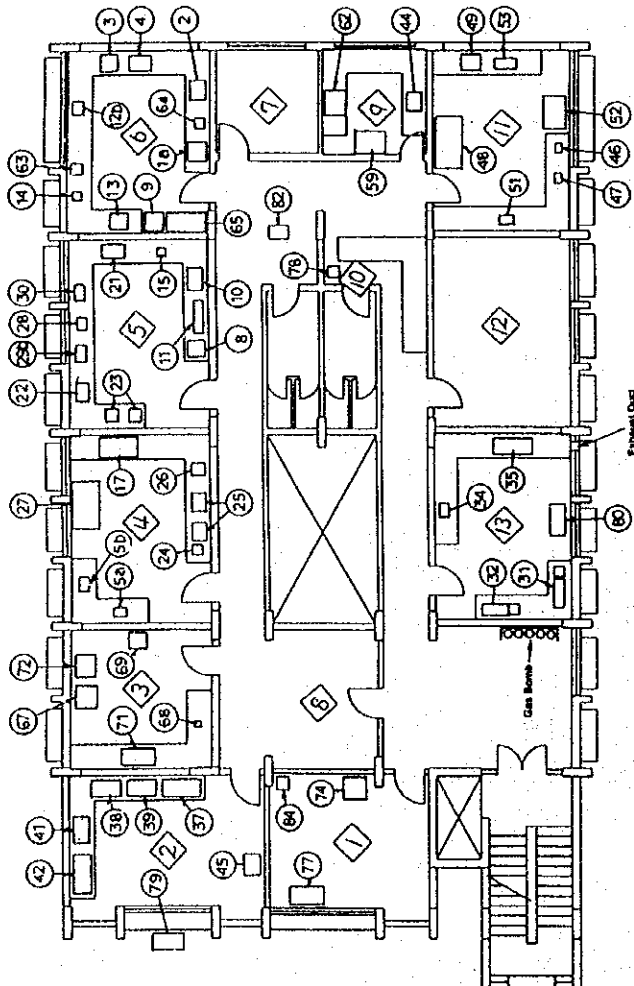
Aleppo Laboratory

Room No.	Item No.	Description	Qty	Area	Notes
1	1	ROOM NO. 1	1.00		
	2	Ames Asbestos Spectrophotometer	1.00		
	3	Ames Asbestos Spectrophotometer	1.00		
	4	Ames Asbestos Spectrophotometer	1.00		
	5	Ames Asbestos Spectrophotometer	1.00		
	6	Ames Asbestos Spectrophotometer	1.00		
	7	Ames Asbestos Spectrophotometer	1.00		
	8	Ames Asbestos Spectrophotometer	1.00		
	9	Ames Asbestos Spectrophotometer	1.00		
	10	Ames Asbestos Spectrophotometer	1.00		
2	11	ROOM NO. 2	1.00		
	12	Ames Asbestos Spectrophotometer	1.00		
	13	Ames Asbestos Spectrophotometer	1.00		
	14	Ames Asbestos Spectrophotometer	1.00		
	15	Ames Asbestos Spectrophotometer	1.00		
	16	Ames Asbestos Spectrophotometer	1.00		
	17	Ames Asbestos Spectrophotometer	1.00		
	18	Ames Asbestos Spectrophotometer	1.00		
	19	Ames Asbestos Spectrophotometer	1.00		
	20	Ames Asbestos Spectrophotometer	1.00		
3	21	ROOM NO. 3	1.00		
	22	Ames Asbestos Spectrophotometer	1.00		
	23	Ames Asbestos Spectrophotometer	1.00		
	24	Ames Asbestos Spectrophotometer	1.00		
	25	Ames Asbestos Spectrophotometer	1.00		
	26	Ames Asbestos Spectrophotometer	1.00		
	27	Ames Asbestos Spectrophotometer	1.00		
	28	Ames Asbestos Spectrophotometer	1.00		
	29	Ames Asbestos Spectrophotometer	1.00		
	30	Ames Asbestos Spectrophotometer	1.00		
4	31	ROOM NO. 4	1.00		
	32	Ames Asbestos Spectrophotometer	1.00		
	33	Ames Asbestos Spectrophotometer	1.00		
	34	Ames Asbestos Spectrophotometer	1.00		
	35	Ames Asbestos Spectrophotometer	1.00		
	36	Ames Asbestos Spectrophotometer	1.00		
	37	Ames Asbestos Spectrophotometer	1.00		
	38	Ames Asbestos Spectrophotometer	1.00		
	39	Ames Asbestos Spectrophotometer	1.00		
	40	Ames Asbestos Spectrophotometer	1.00		
5	41	ROOM NO. 5	1.00		
	42	Ames Asbestos Spectrophotometer	1.00		
	43	Ames Asbestos Spectrophotometer	1.00		
	44	Ames Asbestos Spectrophotometer	1.00		
	45	Ames Asbestos Spectrophotometer	1.00		
	46	Ames Asbestos Spectrophotometer	1.00		
	47	Ames Asbestos Spectrophotometer	1.00		
	48	Ames Asbestos Spectrophotometer	1.00		
	49	Ames Asbestos Spectrophotometer	1.00		
	50	Ames Asbestos Spectrophotometer	1.00		
6	51	ROOM NO. 6	1.00		
	52	Ames Asbestos Spectrophotometer	1.00		
	53	Ames Asbestos Spectrophotometer	1.00		
	54	Ames Asbestos Spectrophotometer	1.00		
	55	Ames Asbestos Spectrophotometer	1.00		
	56	Ames Asbestos Spectrophotometer	1.00		
	57	Ames Asbestos Spectrophotometer	1.00		
	58	Ames Asbestos Spectrophotometer	1.00		
	59	Ames Asbestos Spectrophotometer	1.00		
	60	Ames Asbestos Spectrophotometer	1.00		
7	61	ROOM NO. 7	1.00		
	62	Ames Asbestos Spectrophotometer	1.00		
	63	Ames Asbestos Spectrophotometer	1.00		
	64	Ames Asbestos Spectrophotometer	1.00		
	65	Ames Asbestos Spectrophotometer	1.00		
	66	Ames Asbestos Spectrophotometer	1.00		
	67	Ames Asbestos Spectrophotometer	1.00		
	68	Ames Asbestos Spectrophotometer	1.00		
	69	Ames Asbestos Spectrophotometer	1.00		
	70	Ames Asbestos Spectrophotometer	1.00		
8	71	ROOM NO. 8	1.00		
	72	Ames Asbestos Spectrophotometer	1.00		
	73	Ames Asbestos Spectrophotometer	1.00		
	74	Ames Asbestos Spectrophotometer	1.00		
	75	Ames Asbestos Spectrophotometer	1.00		
	76	Ames Asbestos Spectrophotometer	1.00		
	77	Ames Asbestos Spectrophotometer	1.00		
	78	Ames Asbestos Spectrophotometer	1.00		
	79	Ames Asbestos Spectrophotometer	1.00		
	80	Ames Asbestos Spectrophotometer	1.00		
9	81	ROOM NO. 9	1.00		
	82	Ames Asbestos Spectrophotometer	1.00		
	83	Ames Asbestos Spectrophotometer	1.00		
	84	Ames Asbestos Spectrophotometer	1.00		
	85	Ames Asbestos Spectrophotometer	1.00		
	86	Ames Asbestos Spectrophotometer	1.00		
	87	Ames Asbestos Spectrophotometer	1.00		
	88	Ames Asbestos Spectrophotometer	1.00		
	89	Ames Asbestos Spectrophotometer	1.00		
	90	Ames Asbestos Spectrophotometer	1.00		
10	91	ROOM NO. 10	1.00		
	92	Ames Asbestos Spectrophotometer	1.00		
	93	Ames Asbestos Spectrophotometer	1.00		
	94	Ames Asbestos Spectrophotometer	1.00		
	95	Ames Asbestos Spectrophotometer	1.00		
	96	Ames Asbestos Spectrophotometer	1.00		
	97	Ames Asbestos Spectrophotometer	1.00		
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	99	Ames Asbestos Spectrophotometer	1.00		
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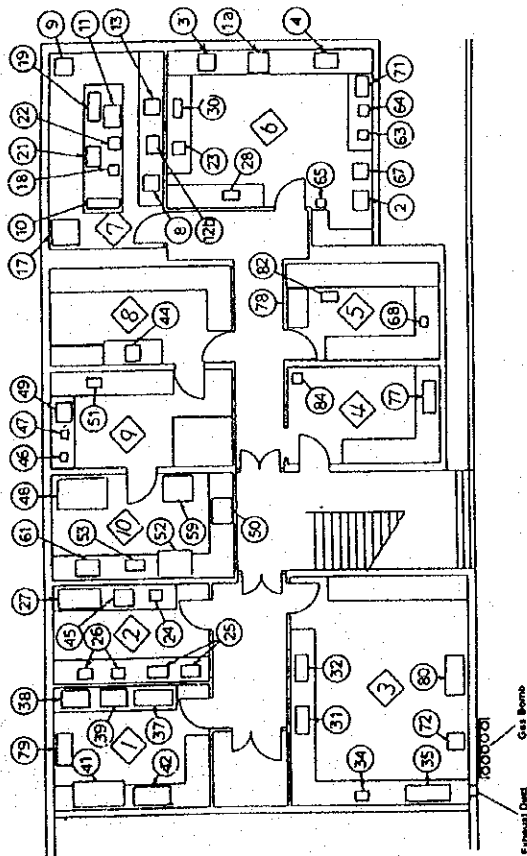
Latakia Laboratory

Room	Item	Qty	Description	Unit	Price	Sub
1	Room No. 1	1	Room No. 1			
2	Room No. 2	1	Room No. 2			
3	Room No. 3	1	Room No. 3			
4	Room No. 4	1	Room No. 4			
5	Room No. 5	1	Room No. 5			
6	Room No. 6	1	Room No. 6			
7	Room No. 7	1	Room No. 7			
8	Room No. 8	1	Room No. 8			
9	Room No. 9	1	Room No. 9			
10	Room No. 10	1	Room No. 10			
11	Room No. 11	1	Room No. 11			
12	Room No. 12	1	Room No. 12			
13	Room No. 13	1	Room No. 13			
14	Room No. 14	1	Room No. 14			
15	Room No. 15	1	Room No. 15			
16	Room No. 16	1	Room No. 16			
17	Room No. 17	1	Room No. 17			
18	Room No. 18	1	Room No. 18			
19	Room No. 19	1	Room No. 19			
20	Room No. 20	1	Room No. 20			
21	Room No. 21	1	Room No. 21			
22	Room No. 22	1	Room No. 22			
23	Room No. 23	1	Room No. 23			
24	Room No. 24	1	Room No. 24			
25	Room No. 25	1	Room No. 25			
26	Room No. 26	1	Room No. 26			
27	Room No. 27	1	Room No. 27			
28	Room No. 28	1	Room No. 28			
29	Room No. 29	1	Room No. 29			
30	Room No. 30	1	Room No. 30			
31	Room No. 31	1	Room No. 31			
32	Room No. 32	1	Room No. 32			
33	Room No. 33	1	Room No. 33			
34	Room No. 34	1	Room No. 34			
35	Room No. 35	1	Room No. 35			
36	Room No. 36	1	Room No. 36			
37	Room No. 37	1	Room No. 37			
38	Room No. 38	1	Room No. 38			
39	Room No. 39	1	Room No. 39			
40	Room No. 40	1	Room No. 40			
41	Room No. 41	1	Room No. 41			
42	Room No. 42	1	Room No. 42			
43	Room No. 43	1	Room No. 43			
44	Room No. 44	1	Room No. 44			
45	Room No. 45	1	Room No. 45			
46	Room No. 46	1	Room No. 46			
47	Room No. 47	1	Room No. 47			
48	Room No. 48	1	Room No. 48			
49	Room No. 49	1	Room No. 49			
50	Room No. 50	1	Room No. 50			
51	Room No. 51	1	Room No. 51			
52	Room No. 52	1	Room No. 52			
53	Room No. 53	1	Room No. 53			
54	Room No. 54	1	Room No. 54			
55	Room No. 55	1	Room No. 55			
56	Room No. 56	1	Room No. 56			
57	Room No. 57	1	Room No. 57			
58	Room No. 58	1	Room No. 58			
59	Room No. 59	1	Room No. 59			
60	Room No. 60	1	Room No. 60			
61	Room No. 61	1	Room No. 61			
62	Room No. 62	1	Room No. 62			
63	Room No. 63	1	Room No. 63			
64	Room No. 64	1	Room No. 64			
65	Room No. 65	1	Room No. 65			
66	Room No. 66	1	Room No. 66			
67	Room No. 67	1	Room No. 67			
68	Room No. 68	1	Room No. 68			
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70	Room No. 70	1	Room No. 70			
71	Room No. 71	1	Room No. 71			
72	Room No. 72	1	Room No. 72			
73	Room No. 73	1	Room No. 73			
74	Room No. 74	1	Room No. 74			
75	Room No. 75	1	Room No. 75			
76	Room No. 76	1	Room No. 76			
77	Room No. 77	1	Room No. 77			
78	Room No. 78	1	Room No. 78			
79	Room No. 79	1	Room No. 79			
80	Room No. 80	1	Room No. 80			
81	Room No. 81	1	Room No. 81			
82	Room No. 82	1	Room No. 82			
83	Room No. 83	1	Room No. 83			
84	Room No. 84	1	Room No. 84			
85	Room No. 85	1	Room No. 85			
86	Room No. 86	1	Room No. 86			
87	Room No. 87	1	Room No. 87			
88	Room No. 88	1	Room No. 88			
89	Room No. 89	1	Room No. 89			
90	Room No. 90	1	Room No. 90			
91	Room No. 91	1	Room No. 91			
92	Room No. 92	1	Room No. 92			
93	Room No. 93	1	Room No. 93			
94	Room No. 94	1	Room No. 94			
95	Room No. 95	1	Room No. 95			
96	Room No. 96	1	Room No. 96			
97	Room No. 97	1	Room No. 97			
98	Room No. 98	1	Room No. 98			
99	Room No. 99	1	Room No. 99			
100	Room No. 100	1	Room No. 100			



Homs Laboratory

Room No.	Item No.	Description	Qty	Price	Room	Shelf
1	1	ROOM NO. 1				
	41	UVVIS Spectrophotometer	1.00			
	42	UVVIS Spectrophotometer	1.00			
	43	UVVIS Spectrophotometer	1.00			
	44	UVVIS Spectrophotometer	1.00			
	45	UVVIS Spectrophotometer	1.00			
	46	UVVIS Spectrophotometer	1.00			
	47	UVVIS Spectrophotometer	1.00			
	48	UVVIS Spectrophotometer	1.00			
	49	UVVIS Spectrophotometer	1.00			
2	1	ROOM NO. 2				
	20	Reagent Dispenser	2.00			
	21	Reagent Dispenser	1.00			
	22	Reagent Dispenser	1.00			
	23	Reagent Dispenser	1.00			
	24	Reagent Dispenser	1.00			
	25	Reagent Dispenser	1.00			
	26	Reagent Dispenser	1.00			
	27	Reagent Dispenser	1.00			
	28	Reagent Dispenser	1.00			
	29	Reagent Dispenser	1.00			
3	1	ROOM NO. 3				
	30	Reagent Dispenser	1.00			
	31	Reagent Dispenser	1.00			
	32	Reagent Dispenser	1.00			
	33	Reagent Dispenser	1.00			
	34	Reagent Dispenser	1.00			
	35	Reagent Dispenser	1.00			
	36	Reagent Dispenser	1.00			
	37	Reagent Dispenser	1.00			
	38	Reagent Dispenser	1.00			
4	1	ROOM NO. 4				
	39	Reagent Dispenser	1.00			
	40	Reagent Dispenser	1.00			
	41	Reagent Dispenser	1.00			
	42	Reagent Dispenser	1.00			
	43	Reagent Dispenser	1.00			
	44	Reagent Dispenser	1.00			
	45	Reagent Dispenser	1.00			
	46	Reagent Dispenser	1.00			
	47	Reagent Dispenser	1.00			
5	1	ROOM NO. 5				
	48	Reagent Dispenser	1.00			
	49	Reagent Dispenser	1.00			
	50	Reagent Dispenser	1.00			
	51	Reagent Dispenser	1.00			
	52	Reagent Dispenser	1.00			
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	54	Reagent Dispenser	1.00			
	55	Reagent Dispenser	1.00			
	56	Reagent Dispenser	1.00			
6	1	ROOM NO. 6				
	57	Reagent Dispenser	1.00			
	58	Reagent Dispenser	1.00			
	59	Reagent Dispenser	1.00			
	60	Reagent Dispenser	1.00			
	61	Reagent Dispenser	1.00			
	62	Reagent Dispenser	1.00			
	63	Reagent Dispenser	1.00			
	64	Reagent Dispenser	1.00			
	65	Reagent Dispenser	1.00			
7	1	ROOM NO. 7				
	66	Reagent Dispenser	1.00			
	67	Reagent Dispenser	1.00			
	68	Reagent Dispenser	1.00			
	69	Reagent Dispenser	1.00			
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	73	Reagent Dispenser	1.00			
	74	Reagent Dispenser	1.00			
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	78	Reagent Dispenser	1.00			
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	81	Reagent Dispenser	1.00			
	82	Reagent Dispenser	1.00			
	83	Reagent Dispenser	1.00			
9	1	ROOM NO. 9				
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	85	Reagent Dispenser	1.00			
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	87	Reagent Dispenser	1.00			
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	90	Reagent Dispenser	1.00			
	91	Reagent Dispenser	1.00			
	92	Reagent Dispenser	1.00			
10	1	ROOM NO. 10				
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	94	Reagent Dispenser	1.00			
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	100	Reagent Dispenser	1.00			
	101	Reagent Dispenser	1.00			



JICA