



**Proposal for Assistance from the Government of Japan  
For Procurement of Cold Chain, Transport and  
Communication Equipment for UNEPI Ministry of Health  
2007 – 2011**



**PROTECT YOUR CHILD  
IMMUNISE  
NOW**

## **1.0 Introduction**

The MOH/UNEPI has the mandate to provide safe, potent and effective vaccines for all children and women of childbearing age and therefore contribute to reduction in morbidity, mortality and disability due to childhood vaccine preventable diseases.

Vaccines form the backbone of any immunization program. Ensuring their adequate supply, proper storage and timely distribution is key to the success of the program in reducing morbidity, mortality and disability due to vaccine preventable diseases. Purchase of approved vaccine storage equipment and effective routine maintenance (adequate supply of spare parts and budget for preventive maintenance) is a strength that all EPI programmes endeavor to sustain in order to ensure supply of effective (potent) vaccines at all levels.

UNEPI was officially launched in 1983 and re-launched in January 1987. The programme was formed to address issues of low immunisation coverage, frequent use on non-potent vaccines, inadequate managerial skills, limited or no community participation and lack of regular monitoring and periodic evaluation of the programme.

The goal of UNEPI is to ensure that every child and high-risk group is fully vaccinated with high quality and effective vaccines against the target diseases according to recommended strategies. These are tuberculosis, poliomyelitis, diphtheria, pertussis, tetanus, measles, hepatitis B and Haemophilus influenzae type b, the last two having been introduced in the programme in June 2002.

There was general increase in immunisation coverage from very low levels in 1985 to high levels in early 1990s. However there was decline in the immunisation coverage followed by a downward trend from 1996.

Studies were conducted to find out causes of the down ward trend in immunisation coverage. These included In-depth measles study, KAPS and Cold Chain Review

### **1.1 Summary of findings of Cold chain review**

- Use of aging cold chain equipment that is experiencing frequent breakdown with parts and materials containing chlorofluorocarbon (CFC) that have high Ozone depletion potential.
- High vaccine wastage estimated to be over 60% due to the decline in immunisation coverage
- Cold chain failure.
- Lack of a system in place to track vaccine wastage rates and lack of awareness regarding the economic impact of wastage.
- Aging transport fleet and increased area of coverage in vaccine and supplies delivery.

The programme started implementing Immunisation revitalisation plan in 2002 and required expansion of the already existing cold chain system to improve on accessibility to immunisation services at community level.

In view of the above, the Government of Uganda solicited for Support from the Japanese Government to address the gaps mainly through the supply of adequate CFC free cold chain equipment including spare parts and transport/radio call communication for delivery of vaccines and other supplies from the national vaccine store to the district level.

**2.0 Out put of the JICA support on routine immunisation, 2001 - 2005**

The Government of Uganda has benefited from the JICA support for the immunisation programme through strengthening of the cold chain and transport fleet for a five-year period beginning 2001. This included purchase of cold chain equipment, spare parts and motor vehicles. The first consignment of items purchased were received in UNEPI 2001. The programme also observed improvement in reduction of dropout rates as a result of improving accessibility to immunisation services in the community.

**2.1 Cold chain system**

The refrigerators received (CFC free) were distributed to establish new static units thereby improving accessibility replacement of old/obsolete (CFC) systems hence minimising missed opportunities and drop out rates.

Chart 1: Total static units by year

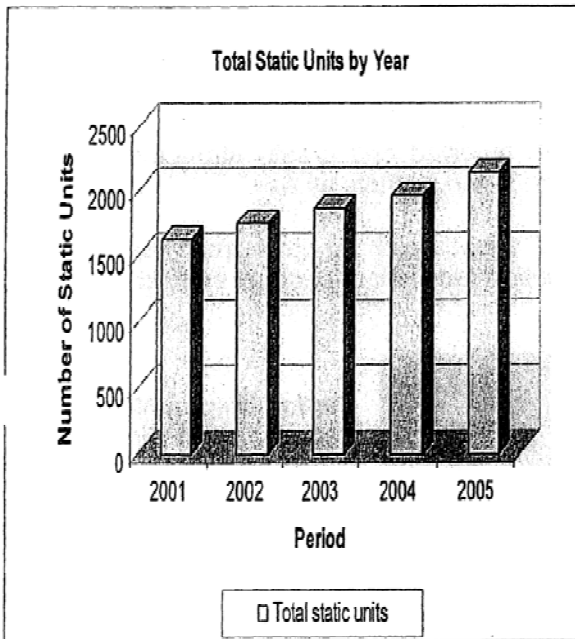
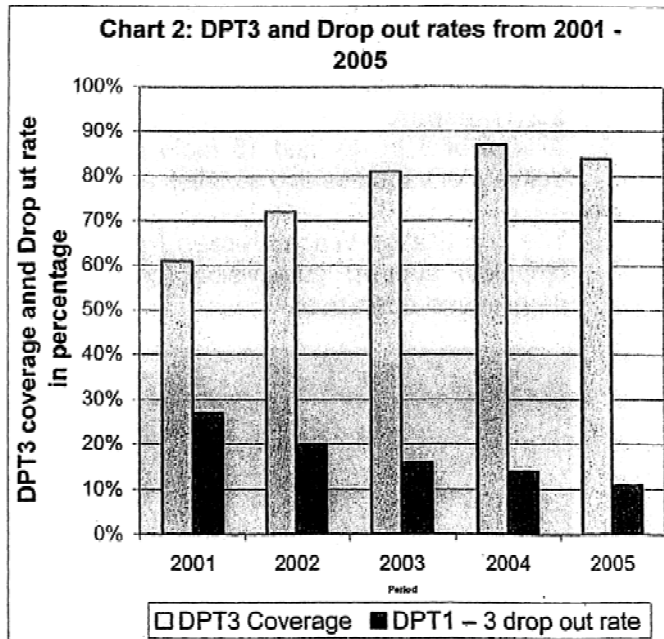
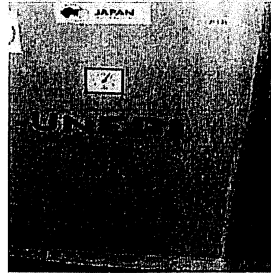


Chart 2: DPT3 and Drop out rates, 2001-2005

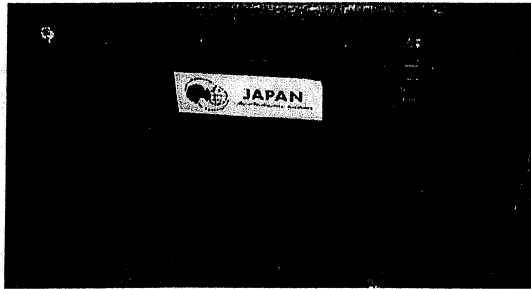


Below are some of the fridges received from JICA Grant

**Solar fridge-**



**Sibir V110GE**



**RCW50GE**

**2.2 Transport**

A total of 3 trucks and 15 radio call systems were received and greatly strengthened the delivery of vaccines and supplies and communication to the districts as well.

The two Station Wagon Nissan Patrol vehicles and a Isuzu pick up have greatly supported technical support supervision, cold chain installation and maintenance and day-to-day programme operations.



**Station Wagon Nissan Patrol used in the programme for support supervision and operations**

The cold chain equipment has been distributed to all districts in the country as part of the revitalisation plan to revamp the trend of immunisation coverage by;

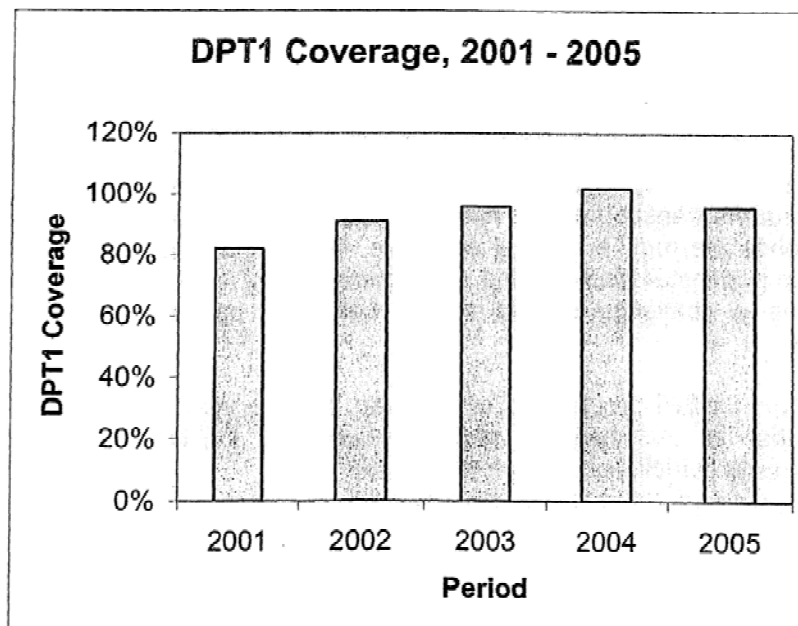
- Increasing access to service delivery through equipping more static immunisation centres
- Strengthening the infrastructure through rehabilitation of the cold chain in the existing centres
- Strengthening transport and communication for delivery of vaccine and supplies as well as support supervision by the centre

### 3.0 Impact of JICA support, 2001 - 2005

The impact of the immunization programme is evident over the past 5 years; there have been no confirmed cases of wild polio virus since 1997; the morbidity due to measles has declined by over 90% compared to 2000 with no confirmed deaths in 2004 and 2005; the number of meningitis cases due to Hib has declined by 95%, at sentinel sites for Hib surveillance since introduction of Hib vaccine in 2002; the number of reported NNT cases has declined by 100% in the first 5 high-risk districts that implemented 3 rounds of TT SIAs.

There has been increased accessibility to immunisation services as depicted in the table below showing DPT1 coverage over the past five years

**Chart 3: DPT 1 Coverage, 2001-2005**



#### **4.0 Extension of JICA support 2006 -2010**

In order to consolidate the efforts of the support already received from JICA and to implement the 2006-2010 UNEPI Multi year plan, MOH-UNEPI is requesting for an extension and continued JICA support for another five years, 2006-2010.

#### **4.1 Justification**

The five-year JICA support project ended 2005. Some equipment is aging and coupled with changes in technology, the rehabilitation of cold chain equipment should continue for structural development at all levels. The programme still needs support to secure spare parts for regular cold chain maintenance.

##### **Service delivery:**

Despite good progress made in achieving relatively high coverage, a large proportion of districts have not achieved the set target of OPV3 and DPT3 coverage of 80%. Secondly only 30% of the districts (17/56) have achieved a dropout rate of <10%. This is partly as a result of difficult in accessing immunisation services in some communities.

##### **Cold chain and logistics**

The cold chain system has relatively expanded over the five years. A number of CFC systems have been removed from the system and replaced with CFC free systems hence contributing to environmental protection (control of the depletion of the ozone layer). There is still a number of CFC equipment in the system.

However, the challenge remains in the following areas,

- Increasing and sustaining accessibility as demand for immunisation services increases through establishment of more static units and replacement of aging equipment.
- Irregular maintenance of the cold chain equipment due to irregular supply of spare parts especially for solar refrigeration systems and to some extent the gas operated refrigerators;
- Lack of adequate transport means following increase in number of districts FY 2005/ 2006, which stretches the routine delivery schedule, field monitoring and supervision/cold chain maintenance and installation coupled with ageing fleet of vehicles/trucks. Inventory tracking also remains a challenge due to limited computer packages and equipment in the programme.

The recent MoH UNEPI programme review and the five year (2006-2010) multi year plan emphasizes that all districts/static units should have functional cold chain equipment including the newly established districts/static units.

The new districts created during the FY 2005/06 need support in establishment of district vaccine stores and strengthening the existing facilities. They will also need Radio-call communication equipment for easy communication between the centre and the districts.

## **4.2 UNEPI Multi-year Plan**

The strategies and strategic activities have been identified in the 2006 – 2010 UNEPI Multi-year Plan to strengthen cold chain and logistics management in the programme as indicated in the table 1 below. The equipment from this procurement assistance will be supplied and utilised along with the MYP 2006 – 2010. Detailed procurement plan is in annex i & ii

The under mentioned strategies and strategic activities have been identified in the MYP to strengthen cold chain and logistics management in the programme.

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
<p><b>Logistics</b></p> <p>1. To ensure availability of logistics data and information at all levels</p>	<ul style="list-style-type: none"> <li>Establish an effective and efficient logistics management information system to maintain full supply of standard EPI commodities at all levels.</li> </ul>	<ul style="list-style-type: none"> <li>- Design and implement the LMIS at all levels</li> <li>- Conduct a comprehensive inventory for all EPI equipment at all levels</li> </ul>	X	X	X	X	X
<p>2. To strengthen the transport fleet for delivery of EPI services</p>	<ul style="list-style-type: none"> <li>To expand and maintain an efficient transport fleet for EPI operations at national level</li> </ul>	<ul style="list-style-type: none"> <li>- Procure and maintain field vehicles, trucks, and motorcycles and bicycles inline with expanding administrative levels and transport replacement plan</li> </ul>	X	X	X	X	X
<p>3. To review and develop a new strategy for distribution of vaccines and supplies from national level to districts and within districts in view of decentralization</p>	<ul style="list-style-type: none"> <li>Establish a vaccine and supplies distribution system from central level to districts and within districts</li> </ul>	<ul style="list-style-type: none"> <li>- Implement vaccine and supplies distribution system from central level to districts and within districts</li> <li>- Construct and expand storage space at the national and district level</li> </ul>	X	X	X	X	X
<p>4. To attain universal usage of ADs for routine immunisation</p>	<ul style="list-style-type: none"> <li>To implement a revised bundling system strategy</li> </ul>	<ul style="list-style-type: none"> <li>- Avail adequate safe injection related materials on a regular basis</li> </ul>	X	X	X	X	X
<p>5. To attain 100% safe disposal of used needles and syringes</p>	<ul style="list-style-type: none"> <li>To collaborate with MOH infrastructure and clinical divisions, and partners to ensure adequate injection safety and waste management</li> </ul>	<ul style="list-style-type: none"> <li>- Work with infrastructure to construct incinerators and disposal pits</li> </ul>	X				



Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
<p><b>Logistics</b></p> <p>6. To ensure availability of logistics data and information at all levels</p>	<ul style="list-style-type: none"> <li>Establish an effective and efficient logistics management information system to maintain full supply of standard EPI commodities at all levels.</li> </ul>	<ul style="list-style-type: none"> <li>Design and implement the LMIS at all levels</li> <li>Conduct a comprehensive inventory for all EPI equipment at all levels</li> </ul>	X	X	X	X	X
<p>7. To strengthen the transport fleet for delivery of EPI services</p>	<ul style="list-style-type: none"> <li>To expand and maintain an efficient transport fleet for EPI operations at national level</li> </ul>	<ul style="list-style-type: none"> <li>Procure and maintain field vehicles, trucks, and motorcycles and bicycles inline with expanding administrative levels and transport replacement plan</li> </ul>	X	X	X	X	X
<p>8. To review and develop a new strategy for distribution of vaccines and supplies from national level to districts and within districts in view of decentralization</p>	<ul style="list-style-type: none"> <li>Establish a vaccine and supplies distribution system from central level to districts and within districts</li> </ul>	<ul style="list-style-type: none"> <li>Implement vaccine and supplies distribution system from central level to districts and within districts</li> <li>Construct and expand storage space at the national and district level</li> </ul>	X	X	X	X	X
<p>9. To attain universal usage of ADs for routine immunisation</p>	<ul style="list-style-type: none"> <li>To implement a revised bundling system strategy</li> </ul>	<ul style="list-style-type: none"> <li>Avail adequate safe injection related materials on a regular basis</li> </ul>	X	X	X	X	X
<p>10. To attain 100% safe disposal of used needles and syringes</p>	<ul style="list-style-type: none"> <li>To collaborate with MOH infrastructure and clinical divisions, and partners to ensure adequate injection safety and waste management</li> </ul>	<ul style="list-style-type: none"> <li>Work with infrastructure to construct incinerators and disposal pits</li> </ul>	X				

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
<b><u>Vaccine supply and quality</u></b> 1. To strengthen the existing national capacity for vaccine regulation and quality control  2. To ensure that 100% of static units have functional cold chain equipment (including newly established static units)  3. To develop and implement a cost effective cold chain energy utilization source.  4. To maintain zero tolerance of stock outs for all vaccines and related supplies	<ul style="list-style-type: none"> <li>• Collaborate with NDA to develop standard guidelines to ensure vaccine quality</li> <li>• To establish a cold chain equipment inventory monitoring system</li> <li>• To establish a cost effective cold chain energy source</li> <li>• Build capacity for vaccine management at all levels</li> </ul>	<ul style="list-style-type: none"> <li>- Work with NDA to build capacity for vaccine regulation</li> <li>- Support UVRI to conduct regular vaccine potency testing at the lower levels</li> <li>- Conduct physical inventory for all cold chain equipment countrywide</li> <li>- Procure cold chain equipment, spare parts and workshop consumables</li> <li>- Support central and district teams to carry out routine and timely maintenance and repair of equipment</li> <li>- Conduct studies on the cost effective energy source for EPI cold chain</li> <li>- Implement use of the cost effective cold chain energy source</li> <li>- Implement the gas cylinder tracking system</li> <li>- Forecast and procure adequate vaccines in a timely manner</li> <li>- Timely delivery of EPI vaccines and other logistics at all levels</li> <li>- Expand vaccine utilization monitoring for all antigens at all levels in all districts.</li> <li>- Conduct vaccine management assessment in selected districts</li> </ul>	X	X	X	X	X
		X	X	X	X	X	
		X	X	X	X	X	
		X	X	X	X	X	

## ***Attachments***

***Annex I: List of equipment received from 2001 – 2005 including spare parts.***

***Annex ii: List of equipment and Transport logistics forecasted for the period 2006 – 2010 including spare parts.***

***Annex iii: List of equipment and Transport logistics forecasted for the 20067 including spare parts.***

Application Form for Technical Cooperation (Equipment)  
By the Government of Japan

1. Subject of Technical Transfer for which Equipment should be Provided	See attached equipment list at annex ii (2007-2010) & iii (2007)		
2. Outline of Activities by the Related Expert(s)	Nil		
3. Estimated Cost for the Equipment	See attached equipment list at annex ii (2007-2010) & iii (2007)		
4. Place of Procurement	<input type="checkbox"/> Recipient Country / <input type="checkbox"/> Japan / <input type="checkbox"/> Third Country Depends on availability of equipment		
5. Preferable Time of Delivery	In the year 2007		
6. Necessity of Dispatch of Expert/s for Installation and Adjustment of the Equipment	Not necessary		
7. Name of Recipient Organization	Uganda National Expanded Programme on Immunisation (UNEPI)		
8. Place of Installation and the Distance from the Capital			
9. Background Information on the Request of the Equipment and its Role in Technical Transfer	See attached proposal		
10. Main Users of the Equipment	National Health Facilities (Hospitals, Health centers III-IV)		
11. Expected Benefit and Effect of the Equipment Provided	See attached proposal		
12. List of the Equipment Requested See attached equipment list at annex i&ii			
(Name of equipment)	(Specification)	(Quantity)	(Cost)
(1)			
(2)			
(3)			

(4)			
(5)			
(6)			
(7)			
(8)			
(9)			
(10)			
(Detailed list and specifications of equipment shall be attached hereafter, if necessary.) Total cost: 2007; US\$ 175,000			
13. Assignment of Staff, Budgetary Allocation and Necessary Arrangements for Maintenance of the Equipment by the Recipient Country			
(1) Budgetary allocation for operation and maintenance of the equipment	The Government of Uganda will be responsible for the operation and maintenance of the equipment		
(2) Condition of Space (capacity, electricity, water supply, etc.) for Operation and Maintenance of the Equipment	UNEPI has adequate space for storage of the equipment before installation in the identified health facilities. There is water and electricity supply in the Programme.		
(3) Assignment of Staff for Maintenance of the Equipment	UNEPI has trained Cold Chain Technicians who would carry out the installation and maintenance		
14. Correspondence:  Name, postal and telegraphic address of official to whom correspondence regarding this application should be forwarded	ACHS – UNEPI PROGRAMME MANAGER P.O Box 7272, KAMPALA		

Equipment received between 2001 - 2005 including spare parts under JICA support project

2001			
	Item	Model	Quantity
1	Solar refrigerators	RFVB	38
2	Gas/electric fridges	RCW42EG	100
3	Spare parts		
4	Motor vehicle (truck)		1
5	Motor vehicle (station wagon)		2
2002			
	Item	Model	Quantity
1	Solar refrigerators	VC65	16
2	Refrigerator Electric	TCW1152	27
3	Refrigerator Gas/ Electric	RCW50EG	37
4	Refrigerator Gas/ Electric	V110GE	77
5	Cold boxes		
6	Spare parts		
7	Motor vehicle (truck)		1
8	Radio calls		10
2003			
	Item	Model	Quantity
1	Solar refrigerators	VC65	16
2	Refrigerator Electric	MK 304	20
3	Refrigerator Gas/ Electric	V170GE	10
4	Refrigerator Gas/ Electric	RCW50EG	40
5	Spare parts		
6	Motor vehicle (truck)		1
7	Radio calls		5
2004			
	Item	Model	Quantity
1	Solar refrigerators	RFVB	10
2	Refrigerator Electric	MK 204	40
3	Refrigerator Electric	MK 304	40
3	Refrigerator Gas/ Electric	V170GE	20
4	Refrigerator Gas/ Electric	RCW42EG	50
5	Spare parts		
6	Motor vehicle (truck)		1
7	Stabilisers		100
2005			
	Item	Model	Quantity
1	Solar refrigerators	PS65	15
2	Refrigerator Electric	MK 204	50
3	Refrigerator Electric	MK 304	50
3	Refrigerator Gas/ Electric	V170GE	30
5	Spare parts		

Notes

The refrigerators MK 304, TCW1152, V170GE were distributed to strengthen vaccine storage capacity at district stores. This enabled replacement of old equipment that were not CFC free (with Ozone depleting characteristics) and increase storage capacity to accommodate the new and bulky DPT-HepB + Hib.

The rest of the fridges were distributed to Health Sub-Districts and health centres to replace of old fridges with CFC free systems, expand immunisation services by opening and equipping new static units.

The solar fridges were distributed to replace the old CFC systems and also strengthen storage capacity in hard to reach units.

The vehicles supported the centre especially in vaccine distribution following the increase in routes as a result of creating new districts.

The radio calls increased communication especially for the new districts.

**Annex ii - EQUIPMENT TO BE PROCURED THROUGH THE JICA FUND FOR 2007-2011.**

No.	Type of equipment	2,007			2,008			2,009			2,010			2,011		
		Quantity	Unit cost (US \$)	Itemised cost (US \$)	Quantity	Unit cost (US \$)	Itemised cost (US \$)	Quantity	Unit cost (US \$)	Itemised cost (US \$)	Quantity	Unit cost (US \$)	Itemised cost (US \$)	Quantity	Unit cost (US \$)	Itemised cost (US \$)
1	Solar refrigerators, RCW42DC/CF	0	2,400	0	10	2,400	24,000	15	2,400	36,000	15	2,400	36,000	0	2,400	0
2	Ice-lined refrigerator, MK 074, 240VAC	0	507	0	0	507	0	15	507	7,609	15	507	7,609	0	507	0
	Chest freezer, MF 314, 240 VAC	0	367	0	0	367	0	15	367	5,509	15	367	5,509	20	367	7,345
3	Gas/electric refrigerator, RCW42EG/CF	180	898	143,709	60	898	53,891	50	898	44,909	50	898	44,909	100	898	89,818
4	Gas/electric refrigerator, V110GE	0	711	0	0	711	0	20	711	14,222	20	711	14,222	20	711	14,222
5	Gas/electric refrigerators, V170GE	0	833	0	10	833	8,327	20	833	16,654	20	833	16,654	20	833	16,654
6	Large vaccine carrier, Model CB/10-CF	0	140	0	0	140	0	20	140	2,800	20	140	2,800	20	140	2,800
7	Voltage regulator, 220/240 VAC	0	48	0	20	48	960	40	48	1,920	40	48	1,920	40	48	1,920
42	Batteries-12V, 108 AH, deep cycle.	0	220	0	0	220	0	0	220	0	0	220	0	0	220	0
	Sub-Total			143,709			87,178			129,623			129,623			132,759
	<b>Transport</b>															
43	Field vehicles	0	20,000	0	2	20,000	40,000	0	20,000	0	0	20,000	0	0	20,000	0
44	Field vehicles, Station Wagon with sitting capacity of 8.	0	20,000	0	0	20,000	0	0	20,000	0	0	20,000	0	0	20,000	0
35	Vaccine delivery truck, Isuzu truck-10 ton	0	72,083	0	0	72,083	0	0	72,083	0	0	72,083	0	72,083	0	
46	Motorcycles, Yamaha DT 175 (3T54)	0	1,457	0	0	1,457	0	0	1,457	0	0	1,457	0	1,457	0	
	Sub-Total			0		40,000										
	<b>Radio communication</b>															
47	26. Radio transceivers, model 9780	0	2,500	0	0	2,500	0	5	2,500	12,500	5	2,500	12,500	5	2,500	12,500
48	27. Dipole antenna, terminated dipole antennae	0	500	0	0	500	0	5	500	2,500	5	500	2,500	5	500	2,500
	Sub-Total									15,000			15,000			15,000
	<b>Equipment total</b>			143,709			127,178			144,623			144,623			147,759
49	Spare parts - 15% of the total cost.			4,596			19,077			21,693.44			21,693			22,164
	<b>Total</b>			148,305			146,254			166,316			166,316			169,923
	Shipment cost (16%)			26,695			26,326			29,937			29,937			30,586
	<b>Grand Total</b>			175,000			172,580			174,560			174,560			178,345

**Annex iii - EQUIPMENT ORDERS TO BE PROCURED THROUGH THE JICA FUND FOR 2007.**

No.	Type of equipment	Specifications/Part no.	Quantity	Unit cost (US \$)	Itemised cost (US \$)	Remarks
1	Gas/electric refrigerator	Model RCW42EG/CF (blue) absorption refrigerator Electrolux (Luxembourg) SARL with heater 220 V, Gas regulators, hose tubes and clips. (Cat.PIS E3/21-M)	160	888.18	143,709.80	Procurement of G/E operated systems are for establishment of new static immunisation centres in rural communities without electricity and replacement of irreparable/obsolete systems.
	<b>Spare parts for item 1</b>				<b>143,708.80</b>	
2	Flame failure device	292.2006.01	20	5.49	110	Spare parts to be used on existing systems as well
3	Gas/Electric Thermostat	292.9363.00	20	22.07	441	Spare parts to be used on existing systems as well
4	Spark plug with cable (630 mm long)	292.8727.03.730	162	5.21	844	Spare parts to be used on existing systems as well
5	Gas jet (butane, 30mbar)	292.8787.06	100	1.28	128	Spare parts to be used on existing systems as well
6	Thermocouple	292.8742.01	120	1.80	216	Spare parts to be used on existing systems as well
	<b>Spare parts for Sibir V110GE</b>				<b>1,739.22</b>	
7	Electric heater, 240VAC	173 738-26/1	30	14.11	423	Spare parts to be used on existing systems
8	Thermocouple	293 1496-04/2	30	5.38	161	Spare parts to be used on existing systems
9	Burner jet No.14	172819-02/1	20	3.92	78	Spare parts to be used on existing systems
	<b>Spare parts for Sibir V170GE</b>				<b>663.10</b>	
10	Electric heater, 240VAC	173 742-24/8	30	12.77	383	Spare parts to be used on existing systems
11	Thermocouple	293 1496-04/2	30	5.38	161	Spare parts to be used on existing systems
12	Burner jet No.14	200 74 19-21/7	20	4.82	96	Spare parts to be used on existing systems
	<b>Other Spare parts compatible with PIS E3/98-M, E3/82-M</b>				<b>640.90</b>	
13	Starting devise for compressor	Relay 02.7038089	20	6.55	131	Spare parts to be used on existing systems
14	Capacitor for compressor	Capacitor 6520004	20	11.35	227	Spare parts to be used on existing systems
15	Electronic thermostat	02.6520154	5	13.32	67	Spare parts to be used on existing systems
16	Compressor, Danfoss FR 6G	03.6038754	5	62.93	315	Spare parts to be used on existing systems
17	Alu-cylinder with R134a (100grs)	Part No. 04.9954073	5	26.18	131	Spare parts to be used on existing systems
18	Compressor, Danfoss FR8 5G	03.6038480	10	68.30	683	Spare parts to be used on existing systems
	<b>Other supplies</b>				<b>1,553.15</b>	
	<b>Sub-Total(2-18 spare parts)</b>				<b>4,596</b>	
	<b>Total(1-18)</b>				<b>148,305</b>	
	Shipment cost (18%)				<b>26,695</b>	
	<b>Total</b>				<b>175,000</b>	



## 要請案件調査票（フォローアップ協力を除く）

新規：新規検討対象案件（専門家の延長・後任派遣、複数年度実施研修の2年次以降、および継続要請案件を含む）。

継続：実施中／採択済み案件。投入形態・案件名・協力期間・概算額のみ入力。

プロジェクト番号 \_\_\_\_\_

新規継続区分  新規  継続

国名 ウガンダ共和国

援助重点分野 保健・水と衛生

開発課題 医療サービス質の向上のための、包括的な支援体制の強化

協力プログラム 感染症対策プログラム  
(プログラム番号) \_\_\_\_\_

投入形態  A 技術協力プロジェクト(※)  D 技術協力個別案件(機材)  G ボランティア  
 B 技術協力個別案件(専門家)  E 開発調査プロジェクト  
 C 技術協力個別案件(研修)  F 無償資金協力プロジェクト  
 (※事前評価調査 有口 無口 →無の場合で、専門家派遣を18年度内に予定する場合は付属資料1を記入のこと。)

案件名 (和) 感染症対策特別機材供与  
 (英) Procurement of Cold Chain, Transport and Communication Equipment for UNEPI Ministry of Health 2007-2011  
 (外) \_\_\_\_\_

相手国機関名 (和) 保健省ウガンダ予防接種拡大計画  
 (外) Uganda National Expanded Programme on Immunization, Ministry of Health in Uganda

プロジェクトサイト ウガンダ全域

### 現状と問題点

ウガンダにおけるEPI(Expanded Programme on Immunization)は、1983年から開始された。同年、保健省は1歳未満児の完全予防接種および新生児破傷風の防止を目的として「ウガンダ国家予防接種拡大プログラム」(Uganda National Expanded Programme on Immunization:UNEPI)という組織を立ち上げ、予防接種サービスの体制強化(人材育成および管理含む)、他ドナー等との調整、資金調達、物資供給等を行ってきた。こうした努力もあって90年代初頭にはBCG 100%、DPT3 75%、ポリオ 75%の接種率を達成したが、90年代後半より接種率は落ち込み、98年にはBCG 59%、DPT3 42%、ポリオ 40%まで下がった。こうした状況を改善するため、ウガンダ政府は、2000年に策定した「保健分野戦略計画」(Health Sector Strategic Plan 2000/01-2004/05:HSSP)において予防接種率の増加に重点を置くこととし、また2001年から「国家予防接種活性化5ヵ年計画」(A National Revitalization Plan for Immunization, PlanI/2001-2005,PlanII/2006-2010)を開始した。同計画はUNEPIが主管し、事業実施を担う地方の人材および体制に係る能力強化を行っている。こうした取り組みの結果、2000年以降接種率は上昇傾向にある(下表1参照)。

第1期5年間計画実施での特筆すべき成果として:1997年以降のポリオ発症例が無い;2004~5年麻疹発症例が無い;2002年からのHib(Haemophilus influenzaeB)ワクチンの導入により、Hib原因の髄膜炎発症例の激減(95%)が認められる;新生児破傷風症例の多発地域5県で激減したことが挙げられ、乳幼児の疾病、死亡率の減少に多大な貢献が認められる。表1は、過去6年間の予防接種率の変遷を示したものである。

表1. 2000-2005年 ウガンダ国の1歳未満児の予防接種率(%) (第II期 UNEPI Multi Year Plan2006-2010)

予防接種	National Coverage(%)					
	2000	2001	2002	2003	2004	2005
BCG	77	81	96	97	98	100
DPT3	58	61	72	81	87	84
DPT1~3dropout	26	27	20	16	14	11
Oral Polio3	57	62	73	82	86	83
TT2+Pregnant	45	47	50	48	57	55
Measles	61	63	77	83	91	85

一方、プログラム運営に関わるロジスティクスの脆弱さとワクチン購入予算の 95% (2005 年度実績) を GAVI (Global Alliance for Vaccines & Immunization・2008 年終了予定) に依存している状況は、プログラム運営上の問題点として挙げられており、第 II 期活動計画の優先課題として対応が迫られている。プログラムは、予防接種事業の運営、ワクチンの供給と管理を含め、事業にかかわる保健人材の育成や、地域住民に対する疾病予防と予防接種の推進についての広報・啓発活動等、多岐にわたる事業を実施している。

保健省は、過去の UNEPI 事業の業績効果と必要性を認めているものの、国家予算の保健分野割り当ても削減の傾向にある中、GAVI やドナー支援に頼らざるを得ないというのが実情である。ちなみに、下表 2 は、第 II 期計画の積算予算と中期国家予算計画との比較と不足分の予想案である。

表 2

必要予算計上	2006	2007	2008	2009	2010
Recurrent cost	34.5	29.3	30.3	31.0	32.0
Capital cost	2.3	1.4	1.0	0.4	-
総額 A (計画実施必要額)	36.8	30.7	31.3	31.4	32
収入予定予算 (単位百万シリング・1UGS=0.06498)					
政府予算	3.54	2.62	2.651	2.722	2.798
UNICEF	3.214	1.225	-	-	-
WHO	5.107	-	-	-	-
総額 B	11.85	3.84	2.65	2.722	2.798
不足分 (A-B) (支援要請額)	24.9	26.9	28.6	28.6	29.2

不足分とは、現時点で今後 5 年間のプログラム運営にかかる費用と保健省の計画で負担可能資金との差であり、すでに、問題は明らかである。保健省は、財務省との協議に、当プログラムへの支援を重ねて要請している。以上のことから、必要性の意義は高いものの、すでに予想される絶対的な予算の不足は、将来的な事業の展開と自立発展性の観点からも、大きな負担となっている。

### 我が国援助方針との整合性

当案件は、ウガンダ国の国別援助計画において、援助重点分野の一つである「人的資源開発」のうち、「保健サービスの向上」という開発課題の「感染症対策」プログラムに属する。ウガンダにおいては、5歳未満の乳幼児死亡率が千人当たり 138 人 (2004 年) となっている等、子どもの健康に関わる状況が他のアフリカ諸国と比しても未だ厳しい状況にあり、予防接種率の向上は緊急性・裨益性が非常に高い課題である。

前述のとおり、予算不足の深刻なウガンダにおいては、プログラムの実施にかかる予算支出は、優先度の高い、ワクチンの購入や管理、人材の確保とその必要経費に費やされる傾向がある。当要請内容にある、コールドチェーン資機材の購入と配備は、ワクチンが安全に管理され、適正に利用されるために必要不可欠である。特に、新設県地方保健局は、いまだ十分なコールド・チェーンが配置されていない状況がある。これを支援することは、保健サービスの向上に大きく貢献でき、それはわが国援助方針とも整合するといえる。

### 案件概要

#### 1) 上位目標

ウガンダにおける予防接種率が向上する。

## 2) 案件の目標

予防接種実施体制が改善される。

## 3) 成果

コールド・チェーン関連機材(冷蔵庫、クーラーボックス等)が整備される。

## 4) 活動

- \*我が国への要請内容:コールド・チェーン機材供与
- \*相手国の事業計画 : 予防接種拡大計画実施にかかる経費全般

## 5) 投入

日本側投入: 機材供与にかかわる資金支援  
相手国側投入: 機材活用についての計画、予算、人材等の配備

## 6) 外部条件

保健政策に変更が無く、社会的・政治的平穏状態が維持される。

## 実施体制

EPI 全般の実施主体は、UNEPI が担っている。全国レベルの計画策定、ワクチンの調達、地方へのワクチン分配等は、UNEPI の所管。ウガンダでは地方分権化が進められており、地方における予防接種計画の作成および実施、ワクチン保管および末端の保健施設へのワクチンの分配等の管理は、各地方政府により行われる。四半期に一度ウガンダ保健省、UNEPI、NGO 代表、ドナーによる会合(Inter-Agency Committee Meeting)が行われており、右会合においてEPIのモニタリング、計画策定が行われている。当案件は、UNICEFとのマルチ・パイ事業であり、UNICEF は、機材購入と搬送についての業務を担当する。JICA と保健省、UNICEF の協調案件として、情報交換と計画の実施を推進している。前回の同様事業についても、問題なく実施されている。

## 協力期間

2007年4月～2011年3月

## 協力額概算

(内、19年度分実施予算)

(内、16年度以前実施予算)

100百万円(5年間)

20百万円

百万円

関連する援助活動 ●JBICとの連携の有無: 無 ●他ドナーとの連携の有無: 有

### 1) 我が国の援助活動

1. 個別専門家派遣(医療機材維持管理、2001年～2003)
2. 感染症対策特別機材(2001年度～2005年度:2005年度分については、要請書提出の遅れから実施は2006年度に順延されている)
3. 母と子の特別供与機材(Long Lasting Insecticide Net の北部ウガンダへの配布 2005年～2010年)
4. 技術プロジェクト/医療機材保守管理プロジェクト(2006年6月～2009年5月/プロジェクト専門家派遣)

## 2) 他ドナー等の援助活動

### 1. UNEPI 支援ドナー

- ・一般予防接種実施支援: WHO、UNICEF、GAVI/Vaccine Fund 等
- ・DPT-HepB-Hib の予防接種実施支援: GAVI/Vaccine Fund
- ・麻疹予防接種実施支援: EU/DANIDA、UNF
- ・日常診療相談: WHO、UNICEF
- ・その他補完的予防接種活動: DFID、CIDA、Rotary International、CDC、US Red Cross、UNF 等

### 2. 保健セクター一般

保健分野における主なドナーは、英(FY2002/03 保健セクター・ドナー代表)、米(FY2003/04 保健セクター・ドナー代表)、デンマーク、スウェーデン、アイルランド、世銀、WHO、UNICEF 等があげられる。ドナー間の連携・協調が活発に行われ、政府への意見等はドナー代表がとりまとめ提出することとなっている。ドナー会合や保健省とドナーの共同会合が毎月開催され、半年毎に行われているレビュー会合で合意された Undertaking の進捗確認、セクターの予算執行についてのモニタリング、緊急課題への対応方法、ドナーの新規事業の検討等が行われている。

### ミレニアム開発目標との関連 (関連性の深いと考えられる順に3つまでポップアップで入力可能)

5歳未満児死亡率削減	妊産婦の健康改善	HIV/AIDS、マラリア、その他の疾病の蔓延防止
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### 我が国重要開発課題との関連 (関連性の深いと考えられる順に3つまでポップアップで入力可能)

人的資源開発	保健医療サービスの向上	
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人間の安全保障の視点を踏まえた案件である ■(当てはまる場合はマーク)

### ジェンダー配慮について

予防接種の対象者は、男女乳幼児で、更に保護者となる両親はじめ同居家族に対する啓発、保健教育が、ジェンダー差別なく実施されているため、当案件についてジェンダー配慮は十分行われていると考える。

### 類似案件からのフィードバック

ウガンダの感染症対策を支援するための我が国による特別機材供与は、2006年度に終了することになっている。しかし、ウガンダ政府は、前述したような絶対的な予算不足から、安全なプログラム実施に不可欠な機材の確保がままならない状態であり、2007年以降も支援を継続していく必要性が認められる。これまでの供与機材は適正に活用されており、保守管理にも担当技術者が積極的に取り組んでいることから、継続支援実施においても、その体制は期待できると考えている。

### 裨益者グループの種類と規模(人数・人口) (可能な限りで男女別に記載)

全国レベルの活動への支援であり、特定対象は限定していない。

## 治安状況

本件の対象地域は全国であることから、一部危険地域も含まれることとなる。ウガンダ全土における現在の外務省危険情報は以下の通りである。

- ・ 退避勧告：アジュマニ、グル、キトゥグム、パデル、リラ、アパッチ
- ・ 渡航延期：アルア、ユンベ、モヨ、ネビ、コボコ、カボング、コティド、モロト、ナカピリビリティ、ブンディブギョ
- ・ 渡航の是非を検討：カタクイ、アムリア、カベラマイド、カセセ、キノロ、ルクンギリ、カヌング
- ・ 十分注意：上記以外

## その他

特になし

優先順位（先方政府順位） A B C （我が方順位） A B C

## 在外(現地ODAタスクフォース)コメント

当国保健セクターにおいて、予防接種拡大計画の再活性化は、最重要課題のひとつとして取り上げられており、ウガンダ政府も厳しい予算状況の中で優先的に予算を配分している。WHO、UNICEF が当該活動では積極的に関与していることもあり、90年代後半に低下した予防接種普及率も現在では徐々に向上していることから、高い協力効果の発現が期待できる。我が国も2001年以降本活動に対する機材等（コールド・チェーン）の供与を行ってきたが、コールド・チェーンを供与しているのは我が国のみであり、ウガンダ側からの評価も高いことから、来年度も継続した採択をお願い申し上げる。

