Appendix B: Framework on Distribution Outsourcing in Government Run Distribution Systems

March 2011

About MIT-Zaragoza

The MIT- International Zaragoza Logistics Programme at Zaragoza Logistics Center (ZLC) is a research institute established by the Government of Aragón in Spain in partnership with the Massachusetts Institute of Technology and the University of Zaragoza. The ZLC hosts the MIT-Zaragoza International Logistics Program. The Center is acknowledged for its excellence in supply chain research and education in Europe and other parts of the world. The center has a core group of faculty and researchers from leading institutions who are considered global experts in their respective fields.

About Transaid

Transaid is an international development charity which seeks to reduce poverty and improve quality of life through providing better access to basic services such as health, education and economic opportunities in Africa and the developing world. Transaid achieves this by building local skills and knowledge to make transport safer, cheaper and more effective. Specifically Transaid specializes in the following: building capacity of the public health authorities to provide effective, safe and cost efficient transport management systems to promote equitable access to primary health care services; developing and improving logistics and supply chain systems to enhance the delivery of medicines, equipment and relief services to vulnerable communities; providing technical and financial analysis of the transport component of relief and emergency programmes; promoting effective partnership to support and enhance community participation in developing sustainable transport solutions in rural areas; developing and delivering transport and logistics training and qualifications for public and private sector operators.

About VillageReach

VillageReach is a nonprofit organization with a hybrid, interdisciplinary approach to improving access to healthcare for remote, underserved communities around the world. Our model combines the creation of social businesses that address infrastructure gaps with health system strengthening programs that benefit communities at the last mile. VillageReach partners with governments, businesses, and nonprofit organizations to provide innovative, efficient and sustainable improvements to health systems. Our solutions are scalable, replicable, and produce measurable improvement.

Acknowledgements

The authors are grateful to: Ebere Anyachukwu, DFID; Abdel Raouf Qawas, PATHS2; Vimal Pant, PATHS2; Dr. O. Ishola PATHS2; Mike Egboh, ABT Associates; Garba Safiyanu PATHS2 state coordinator; Dr Abubakar Izge, PATHS2 Team Leader; Phrm Kabir Yusuf, PATHS2; Phrm Auwalu Abdulsalam, PATHS2; Phrm Tukur Ibrahim, Hospital Management Board; Benson Obonyo, PATHS2; Phrm Kamilu Mudi Salisu, DMA deputy director drugs; Hajiya Amina Jibrin, DMA chief accountant; Alhaji Tajudden Gambo*, Permanent Secretary, Kano of Health Ministry of Health (KMOH);* Pharm. Tijjani Nasidi*, Director Pharmaceutical Services (KMOH);* Dr Said Muhammad, Zonal Director, Hospital Management Board, Zone 5 Gaya, Kano; *Pharm Ali Adamu, DMA director of drugs; Dr. Umar Mustafa, Managing Director, Mentholatum; Dr Carolyn Sonners, DFID medical advisor, Northern Nigeria; Jane Miller, DFID; Saul Walker, DFID; Cheri Grace, DFID.*

This assessment would not have been possible without the tireless efforts and impressive dedication of the field survey team including Adesoji Adegbulugbe and Tukur Ibrahim and planning support of Kabir Yusuf and Auwalu Abdulsalam. Finally, the study design, data analysis, and report writing team

were critical to completing the assessment. The team included Noel Watson from MIT-Zaragoza; Gary Forster from Transaid; and Leah Hasselback from VillageReach.

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Appendix B.1: Assessment Survey

B.1.1 Basic Warehouse Assessment Survey

	Basic WH Capabilithy Assessment Tool			
	Name of Warehousing Provider:			
	Address:			
	Date			
	Names of interviewees:			
	Instructions:			
	1) This basic warehouse capability assessment, if possible, should be given to Gen. management and direct operational management positions preferably at the same time.			
	2) The existence of documents that is questioned in the assessment should be verified as much and as conveniently as possible. These documents include but are not limited to: documented standard operating procedures (S0P)for receiving side thing, storage, use of inventory management information system, security, disposal expired/spoiled medicines.			
	3) Answers to questions on physical infrastructure should be verified by a tour of the facilities.			

A	Warehousing Capabilities	Yes = y, No = n,	Points awarde	Max Sco
PART I	Basic Operational			
1	Receiving &Shipping			
1.1	**Physical Infrastructure**			
1.1.1	Do you have appropriate space for receiving and issuing stocks? (i.e. easy to offload trucks and position delivery trucks for off-loading)		0	2
1.1.2	Is receiving and issuing area large enough to handle large consignments at least 6 cubic meters?		0	1
1.1.3	Is receiving and issuing area protected from adverse weather conditions such as rain or sunshine?		0	2

1.1.4	Do you have furniture and other receiving /shipping equipment?		0	1
1.1.5	Is receiving and shipping area separated?		0	2
1.1.6	Are receiving/shipping doors wide enough?		0	1
	Total Score		0	9
1.2	**Informational Infrastructure**			
1.2.1	Is there a system for recording all medicines received into the warehouse?		0	2
1.2.2	Is there a documented SOP for receiving and issuing medicines?		0	2
	Total Score		0	4
1.3	**Roles and Responsibilities**			
1.3.1	Do you have trained receiving and shipping staff?		0	2
1.3.2	Have you replaced less than 50% of your receiving/issuing staff in the past year		0	3
1.3.3	Is the receiving process supervised by personnel with pharmaceutical experience?		0	2
1.3.4	Is the issuing process supervised?		0	2
1.3.5	Are incentives in place to ensure proper receiving and shipping?		0	1
	Total Score		0	10
1.4	**Processes**			
1.4.1	Are the receiving and issuing areas prepared and cleaned regularly?		0	2
1.4.2	On receiving is there an inspection for damages and expiration?		0	2
1.4.3	If damage or expiry is discovered when the truck is at your site, do you refuse to accept products and note the problems on the delivery note?		0	1
1.4.4	If damaged or expire is discovered after the delivery truck has left, is the SOP for handling damaged or expired stock always followed?		0	1
1.4.5	Does the receiving staff verify the medicines received against the delivery note and copy of purchase order issued to supplier?		0	2
1.4.6	kept in medical store?		0	1
1.4.7	Are both quality assurance and warehouse staff involved in receiving and verifying medicines received from supplier?		0	1
	Total Score		**0**	10
	Total Score - Receiving &Shipping			33
2	**Storage**			
2.1	**Physical infrastructure**			
2.2.1	Are products stacked at least 10 cm (4 inches) off the floor?		0	1
2.2.2	Are products stacked at least 30 cm (1 foot) away from the walls and other stacks?		0	1
2.2.3	Are products stacked no more than 2.5 m (8 feet) high?		0	1
2.2.4	Are shelves arranged with a passageway not less than 90 cm wide?		0	1

2.2.5	Are liquid products placed on lower shelves or on bottom of stacks?		0	1
2.2.6	Is the warehouse clean and dry?		0	1
2.2.7	Is the warehouse well-lit?		0	1
2.2.8	Do you have cold storage infrastructure?		0	2
2.2.9	Do you have temperature monitoring equipment in the warehouse and cold rooms?		0	2
2.2.10	Is there a humidity control system in the warehouse(s)?		0	2
2.2.11	Can the temperature of the warehouse be kept from rising above 28 degree Celcius, e.g., is the roof insulated, is their A/C?		0	3
2.2.12	Do you have a separate area for quarantine of expired/spoiled medicines?		0	2
2.2.13	Are photosensitive products protected from direct sunlight?		0	1
2.2.14	Are storage slots well labelled?		0	1
2.2.15	Do you have goods handling equipment (forklifts, pallet movers, Ladders, trolleys)?		0	2
2.2.16	Are pest control measures in place?		0	2
	Total Score		0	24
2.2	Informational Infrastructure			
2.2.1	Does a master map showing location of medicines exist?		0	1
2.2.2	Is there an inventory management information system in place, e.g., bin cards etc?		0	1
2.2.3	Is there documented SOP for use of the inventory management information system?		0	2
2.2.4	Is the inventory management information system updated with each transaction?		0	3
2.2.5	Is there a standard list of stock items handled at the medical store?		0	2
2.2.6	Does the inventory management system provide information on the following elements:			
	a) stock on hand		0	1
	b) product name		0	1
	c) receipts		0	1
	d) issues		0	1
	e) maximum stock		0	1
	f) minimum stock		0	1
	e) losses/adjustments		0	1
	f) Frequency of ordering?		0	0.5
	g) Re-order quantity?		0	0.5
	h) item codes		0	0.5
	i) Expiry dates?		0	0.5
	j) special storage conditions (e.g., 2° to 8°C)?		0	1
2.2.7	Is there a system in place to track movement of goods from warehouse to health facilities?		0	1

2.2.8	Is there documented SOP for using the system for tracking movement of goods to health facilities?		0	2
2.2.9	Does the system above include information on the following:			
	a) Facility supplied?		0	1
	b) Type and amount of medicines that left the warehouse?		0	1
	c) Name of person who verified the medicines dispatched?		0	1
	d) Name of intended recipient of medicines at facility?		0	1
	Total Score		0	26
2.3	Roles and Responsibilities			
2.3.1	Are storage personnel trained?		0	1
	Have you replaced less than 50% of your storage staff in the past year?		0	3
2.3.2	Are new staff members train within two weeks of being hired?		0	2
2.3.3	Are all employees aware of the classifying or organizing system for medicines?		0	2
2.3.4	Are store staff generally supervised?		0	1
2.3.5	Are incentives in place to ensure adherence to good storage practices?		0	2
	Total Score		0	11
2.4	Processes			
2.4.1	Is there a systematic and orderly shelving of products in warehouse(s)?		0	2
2.4.2	Are manufacturer or shipper's directions follow when stacking or storing product?		0	1
2.4.3	Are high security/high-value products stored in appropriate security zones?		0	2
2.4.4	Are cartons arranged so that identification labels, expiry dates and manufacturing dates are visible?		0	1
2.4.5	Are medicines in the warehouse organised systematically according to dosage forms such as tablets&capsules, syrups&suspensions, creams & ointments, injectables etc?		0	3
2.4.6	Is the temperature in cool/cold environments monitored?		0	1
2.4.7	Is the overall products arrangement based on therapeutic action?		0	1
2.4.8	Are products arranged taking into account expiry dates to ensure FEFO System?		0	2
2.4.9	Is a complete physical inventory taken at least once a year?		0	2
2.4.10	Are physical counts for fast-moving items done more frequently than slow-moving items?		0	2
2.4.11	Are inventory records reconciled with physical cycle or random counts at least every three months?		0	2
2.4.12	Are discrepancies found from physical counts handled appropriately?		0	2
2.4.13	Are products examined regularly for damage?		0	2
	Total Score		0	23
	Total Score - Storage			84

3	**Security**			
3.1	**Physical infrastructure**			
3.1.1	Do you have a secure room with controlled access for narcotics?		0	2
3.1.2	Do you have a specially designed room for flammable products?		0	1
3.1.4	Is an alarm system in place?		0	2
3.1.5	Are fire extinguishers in place and inspected regularly?		0	2
3.1.6	Is there an area set aside for storage of hazardous materials?		0	3
3.1.7	Are emergency exits and checked regularly?		0	2
3.1.8	Do you have a back-up power generator?		0	2
3.1.9	Is there a well-stocked first-aid kit??		0	1
	Total Score		**0**	15
3.2	**Information Infrastructure**			
3.2.1	Is there documented SOP for handling security issues, such as narcotics, fires etc?		0	3
3.3.3	Is insurance provided for goods in storage or in transit?		0	2
3.3.4	Is insurance provided for the warehouses?		0	2
	Total Score		**0**	7
3.3	**Roles and responsibilities**			
3.3.1	Is overall security an assigned reponsibility to a person or group of persons?		0	3
3.3.2	Are staff trained in all aspects of security including firefighting?		0	2
3.3.3	Is smoking strictly prohibited in the store?		0	2
3.3.4	Do you ensure goods that left warehouse are same ones received at the health facility?		0	2
	Total Score		**0**	9
3.4	**Processes**			
3.4.1	Do you monitor entry and exit in and out of warehouses?		0	2
3.4.2	Do you carry out searches by security personnel for those leaving warehouses?		0	2
3.4.3	Are security personell available 24 hours a day?		0	2
3.4.4	Do you ensure limited/ controlled access to unauthorised persons?		0	2
3.4.5	Do you have warehouse locks with controlled key distribution?		0	2
3.4.6	Are controlled sustances such as narcortics separated and secured?		0	2
3.4.7	Do you conduct fire drills at least every six months?		0	2
3.4.8	Do you service fire extinguishers and smoke detectors at least every 12 months?		0	2
3.4.9	Do you use packing seals?		0	2
	Total Score		0	18
	Total Score - Security			49

4	Disposal of expired/spoiled medicines			
4.1	Physical infrastructure			
4.1.1	Do you have a special storage area for expired/spoiled medicines separated from the actual ?		0	2
4.1.2	Do you have the appropriate equipment for disposal according to national guidelines?		0	2
	Total Score		0	4
4.2	Informational infrastructure			
4.2.1	Is there a mechanism for identifying medicines for disposal?		0	2
4.2.2	Is there documented SOP for disposal of expired/spoiled medicines?		0	2
4.2.3	Are records of disposal taken and names and quantity of disposed medicines recorded?		0	2
	Total Score		0	6
4.3	Roles and responsibilities			
4.3.1	Is medicines disposal supervised?		0	2
4.3.2	Is management of medicine disposal an assigned responsibility to one person or group of persons?		0	3
4.3.3	Is training provided to staff on identifying and disposing of expired/spoiled medicines?		0	3
	Total Score		0	8
4.4	Processes			
4.4.1	Is non-medical nonhuman waste burned or buried?		0	1
4.4.2	Is human waste disposed of using pit latrines or toileting facilities?		0	1
4.3.1	Does a mechanism exist to notify regulatory authority of expired/spoiled medicines exist?		0	2
4.4.3	Is stock adjustment done immediately after the disposal process?		0	2
	Total Score		0	6
	Total Score - Disposal of expired/spoiled medicines			24
	Total Score - Part I: Basic Operational Capabilities (Summation of 1,2,3,4)			190

B.1.2 Advanced Warehouse Assessment

Advanced WH Capacity Assessment Tool			
Name of Warehousing Provider:			
Address:			
Date			
Names of interviewees:			
Instructions:			
1) This advanced warehouse capability assessment, if possible, should be given to Gen. management and direct operational management positions preferably at the same time.			
2) For yes or no questions, where possible and as time allows, engage interviewees to provide examples of past situations as corroborating evidence of ability.			
3) Answers to questions on physical infrastructure should be verified by a tour of the facilities.			
4) Where cell is blacked out, it means that the question does not apply to that service.			
Warehousing Advanced Operational Capabilities			
Service Offerings	Public warehousing	Contract Warehousing	Cross-Docking
Do you provide these services?			
Experience			
For how many customers do you currently provide this services?			
Could you provide 3 refences if asked?			
How many years has this organization been offering this service in pharmaceutical supply chain business?			
How many years has this organization been offering this service for public sector pharmacuetical distribution?			
How many years has the owner/CEO been involved with this type of service the pharmaceutical supply chain business, including time employed at other organizations?			
Roughly how much revenue did your business generate last year?			
Do have experience in handling bulky and hard to manage pharamceutical products in this service?			
How well do you understand the medicines regulatory framework in Nigeria? (National Agency for Food and Drug Administration and Control (NAFDAC), PCN, FDA, DEA type regulations)			

1.2	Business Setup			
1.2.1	On average in how many months could you begin to offer these services on a basic contract for a 200 square meter facility?			
1.2.2	If you provide lease contracting, what is the maximum term for a lease in months?			
1.2.3	If you provide lease contracting, what is the shortest term for a lease in months?			
1.2.4	Can you be engaged using cost-plus contracts?			
1.2.5	Can you be engaged using fixed-price contracts?			
1.2.6	For public warehousing, how is the contract enforced to ensure full adherence by all parties involved?			
1.2.7	For public warehousing, how do you keep track of what area of warehouse belongs to whom?			
1.3	Client Management (3PL)			
1.3.1	Do you provide client dedicated representatives/agents as points of contact?			
1.3.2	Can submit to key performance indicator monitoring and conformance requirements?			
1.3.3	Do you provide quarterly or monthly reports forlong term customers?			
1.3.4	Can you accommodate various client reporting requirements, e.g.,formal financial reporting for participating donors?			
1.4	Physical infrastructure			
1.4.1	How much space (cubic meter) do you have for this service?			
1.4.2	How many separate warehouse buildings do you have for this sevice?			
1.4.3	How much of that space is currently being used (percentage?			
1.4.4	Do you have cold chain equipment?			
1.4.5	Do you have trolleys?			
1.4.6	Do you have fire and safety equipment?			
1.4.7	Does the warehouse have storage racks?			
1.4.8	Can you create temporary divisions in your warehouse to keep products separated between customers?			
1.4.9	Do you have specialized loading and offloading equipment?			
1.5	Operations			
1.5.1	Are the warehouse buildings fully insured?			
1.5.2	Can you insure goods in the warehouse against fire and damage on behalf of clients?			
1.5.3	What is the size of core workforce providing this service?			
1.5.4	What's the size of flexible workforce that can be added to this service over a period of one month?			
1.5.5	How much training would be done on the flexible workforce during the one month period?			
1.5.6	Can you accommodate standard operating procedures (SOP) from your customers?			
1.5.7	Can you provide inventory management services - general receiving/shipping?			
1.5.8	Can you provide inventory management services - storage?			
1.5.10	Can you provide inventory management services - pick & pack (pick different items from storage that should all be sent to the same destination)?			
1.5.11	Can you provide inventory management services - repackaging and relabelling?			
1.5.12	Can you provide transportation services - inbound?			
1.5.13	Can you provide transportation services - outbound?			
1.5.14	Can you group orders outgoing to different facilities and make efficient use of available truck?			
1.5.15	Do you own a transportation fleet?			
1.5.16	Is independent audit of warehouse(s) allowed?			
1.5.17	Do you make use of computers in providing this service?			

2	Technological offerings	
2.1.1	Do you have access to the Internet?	
2.1.2	Do you have an intranet?	
2.1.3	Do you have a website?	
2.1.4	Do you use e-mail for client contact?	
2.1.5	Do you have a fax machine?	
2.1.6	Do you have a document scanner?	
2.1.7	Do you keep information on customers on computer?	
2.1.8	Do you keep inventory information on computer?	
2.1.9	Do you have backups for the information on computer?	
2.1.10	Do you have in-house technical support for your computer system?	
2.1.11	To provide any other technology-based benefits for your customers?	

B.1.3 Third Party Management Capability

	3PL Warehouse Management Assessment Tool			
	Name of 3PL Warehouse management:			
	Address:			
	Date			
	Names of interviewees:			
	Instructions:			
	1) This advanced warehouse capability assessment, if possible, should be given to Gen. management and direct operational management positions preferably at the same time.			
	2) For yes or no questions, where possible and as time allows, engage interviewees to provide examples of past situations as corroborating evidence of ability			
	3) Where cell is blacked out, it means that the question does not apply to that service?			
	4) The organization has never managed a 3PL, asked if there is any experience in the organization at all managing 3PLs of any kind. Then skip 1.1. For sections 1.2 -- 1.4, ask interviewee how difficult it would be for the organization to get to the place where they could answer yes to the question. Interviewees should then answer either i) easy, ii) challenging, iii) very difficult, to these new questions.			
PART II	Warehousing Advanced Operational Capabilities			
1	Service Offerings	Public warehousing	Contract Warehousing w/Pick and Pack	Cross-Docking
	Do you manage 3PL offering these services?			
	If no to question above, asked if there is any experience in the organization at all managing 3PLs of any kind. Then skip 1.1. For sections 1.2 -- 1.4, as interviewee how difficult it would be for the organization to get to the place where they could answer yes to the question. Interviewees should answer either i) easy, ii) challenging, iii) very difficult, to the revised question.			
1.1	Experience			
1.1.1	How many 3PL providers do you manage offering this service?			
1.1.2	Could you provide 3 provider refences if asked?			
1.1.3	How many years has this organization been managing 3PLs in pharmaceutical supply chain business?			
1.1.4	How many years has this organization been managing 3PLs for public sector pharmacuetical distribution?			
1.1.5	How many years has the senior manager been involved with managing 3PL in the pharmaceutical supply chain business, including time employed at other organizations?			
1.1.6	Roughly how much revenue did your business generate last year?			
1.1.7	How well do you understand the medicines regulatory framework in Nigeria? (National Agency for Food and Drug Administration and Control (NAFDAC), PCN, FDA, DEA type regulations)			

		All Services
1.2	3PL identification and selection	
1.2.1	Does a documented SOP for identification and selection exist?	
1.2.2	Prior to identifying and selecting 3PL provider are qualifying criteria identified for a suitable 3PL provider?	
1.2.3	Are all key stakeholders involved in the identification of these quantifying criteria??	
1.2.4	Is 3PL experience a strong qualifying criteria?	
1.2.5	Are prior references a strong qualifying criteria?	
1.2.6	Are requests for bids written such that all operational expectations were listed?	
1.2.7	Are requests for bids written such that insider information is not needed for 3PLs to understand the requirements of the bid?	
1.2.8	Are requests for bids advertised in national and community outlets?	
1.2.9	Are references checked for each 3PL?	
1.2.10	Are terms for interaction and control of 3PL included in the information package provided to potential3PL providers?	
1.2.11	Are 3PL operations visited and assessed according to standard warehousing requirements?	
1.2.12	Are all key stakeholders involved in the final selection of 3PL?	
1.3	Risk Management	
1.3.1	Are financial sources of risk continually being identified and assessed throughout the term of selecting and engaging 3PLs?	
1.3.2	Are operational sources of risk, e.g., availability of fuel, continually being identified and assessed throughout the term of selecting and engaging 3PLs?	
1.3.3	Where feasible and affordable, are multiple 3PLs being identified and selected for the engagement?	
1.3.4	Are financial contingencies in place in case of operational disruption?	
1.4	Interaction with and Control of 3PL	
1.4.1	Is a manager/point of contact identified to work with the 3PL once selected?	
1.4.2	Is this manager/point of contact trained to work with3PL providers?	
1.4.3	Is there any other specific management structure in place to deal/manage with 3PLs?	
1.4.4	Can the accounting/finance department adequately deal with a 3PL?	
1.4.5	Are planning/review meetings held with the 3PL at least once a month?	
1.4.6	Is there an ability (manpower) to review and randomly audit the 3PL at least once a month?	
1.4.7	Are there legal capabilities in dealing with possible financial or contractual disagreements?	

B.1.4 Forecasting and Procurement Survey

	PART I: Forecasting process	**Response**	**Score**	**Max. Score**	**Example**	**Comment**
a)	**Learning**					
1	Are the forecasting approaches used by various forecasters, partners and stakeholders consistent from one year to another?	☐Yes ☐No		4	Are the same forecast methods used every year?	
2	Are the forecasting approaches consistent among all forecasters, partners and stakeholders involved in the forecasting process?	☐Yes ☐No		4	Are same forecast methods used by all partners?	
3	a) Is there an established forecast accuracy metric?	☐Yes ☐No				
	b) What is that metric?			1	Are forecasts validated by comparing previous estimated consumption with actual consumption?	
	c) Is there a target accuracy?	☐Yes ☐No		1		
	d) What is your current forecast accuracy performance?			1		
	e) Is forecast accuracy increasing/ decreasing over the last 3 yrs?	☐Increase ☐Decrease		1		
4	If forecast target accuracy is missed;					

	a) Are there any regular assessments done to understand why forecast accuracy is missed?	☐Yes ☐No		1.33		
	b) Are assessment results used to refine the forecasting process?	☐Yes ☐No		1.33		
	c) What is the example of revisions being made as a result of the assessment?			1.33		
5	a) Is there any other measure being used in addition to the established forecast accuracy metric?	☐Yes ☐No		2	Do you match planned consumption of medicines to actual medicines used for last year?	
	b) Is this alternative metric at least monitored during the forecast process?	☐Yes ☐No		2		
6	Are forecast assumptions regularly evaluated?	☐Yes ☐No		4	Are forecast assumptions being regularly compared with consumption data?	
b)	**Data/Assumption Collection/Sharing**					
7	Is there a standard data collection tool used for collecting data for forecasting purposes?	☐Yes ☐No		4	a) Does data collection across stakeholders use the same tool? b) Do the data collectors use similar formats for data collection tools?	
8	Are the following data types used in forecasting?					
	a. Demographic	☐Yes ☐No		1	Are changes in human population considered when performing forecasts for health	

					products?	
	b. Disease prevalence	☐Yes ☐No		1	Is rate of disease spread used when forecasting for health products?	
	c. Morbidity	☐Yes ☐No		1	Is the number of sick people considered when forecasting for health products?	
	d. consumption	☐Yes ☐No		1	Is amount of medicines used in previous months or years considered in forecasting for medicines for future periods?	
9	Is there an accuracy verification at service delivery point of:	☐Yes ☐No				
	a) Demographic data?	☐Yes ☐No		1	Is the accuracy of population figures at health facilities checked?	
	b) Disease prevalence data?	☐Yes ☐No		1	Is data on spread of diseases at health facilities checked?	
	c) Morbidity data?	☐Yes ☐No		1	Is the number of sick people at health facilities know to be correct?	

	d) Consumption data?	☐Yes ☐No		1	Is the amount of medicines used at facilities believed to be correct?	
10	Does the existing information system (e.g. at districts and service delivery points) have the ability to provide timely information for forecasting purposes?	☐Yes ☐No		3	a) Is the existing information system easily accessible? b) Is the existing information system containing data in formats that are easy to understand?	
11	Are there assumptions being considered in the quantification process about:			5		
	a) Field worker behavior, if appropriate?	☐Yes ☐No			Are there assumptions about theft of medicines by health workers when conducting forecasts?	
	b) Mix of field diagnostic technologies, if appropriate?	☐Yes ☐No			Are there assumptions about Clinical and equipment based diagnosis at health facilities when forecasting?	
	c) Health delivery capacity?	☐Yes ☐No				
	d) Funding: out of pocket, gov't or external donor?	☐Yes ☐No				
	e) Treatment guidelines?	☐Yes ☐No				
	f) Supply chain efficiency?	☐Yes				

		☐No				
	g) Attributes of the healthcare product?	☐Yes ☐No				
	h) Patient treatment seeking behavior?	☐Yes ☐No				
	i) Standard treatment guidelines?	☐Yes ☐No				
	j) Standard clinical testing protocols?	☐Yes ☐No				
	k) Standard laboratory testing menus?	☐Yes ☐No				
c)	**Quantification/Verification**					
12	Are quantification formulas used consistently over the last 3 years?	☐Yes ☐No		4	Has the same method for calculating forecasts been used over the past 3 years?	
13	Are quantification formulas relatively;					
	a. Easy to understand?	☐Yes ☐No		2		
	b. Easy to explain?	☐Yes ☐No		2		
14	a) Do the numbers generated make sense as compared to previous years?	☐Yes ☐No		2	Do you normally evaluate forecasting formulas used to ensure that reasonable results are generated?	
	b) Are there other types of reality checks done?	☐Yes		2	Do the forests change with disease prevalence?	

		☐No				
15	a) Is sensitivity analysis done to identify major assumptions?	☐Yes ☐No		2		
	b) Are the major assumptions identified by sensitivity analysis re-verified?	☐Yes ☐No		2		
16	Are forecast given as a range or as a point forecast?	☐range ☐point		4		
	Total score			63		
	Total score percentage – Part I.			**100%**		

	Part II: **Procurement plan Generation**	**Response**	**Score**	**Max. Score**	**Example**	**Comment**
1	Are there any documented procurement planning processes and templates created to guide and expedite current and future planning cycles?	☐Yes ☐No		5	Are there procurement manuals?	
2	Are procurement mechanisms defined for each product?	☐Yes ☐No		4	Are there procurement guidelines for each product or groups of products?	
3	Are procurement lead times for each procurement mechanism reviewed and considered in subsequent procurement planning processes?	☐Yes ☐No		4	Does the timing of procurement order placement take into account the procurement lead times?	
4	Are forecasts generated combined with inventory data to determine procurement orders?	☐Yes ☐No		4	Are medicines forecasted matched with the balances in warehouses before procurement orders are placed?	
5	Are multiple forecast scenarios created and implications of each scenario understood while generating procurement plans?	☐Yes ☐No		4	Are Changes in health delivery capacity considered when generating procurement plans?	

6	Are procurement orders based on appropriate inventory targets?	☐Yes ☐No		4	Are procurement orders placed when the minimum stock level is reached?	
7	Is there a mechanism for monitoring & calibrating pipelines?	☐Yes ☐No		5	Do the suppliers regularly notify the Procurement agent of how much has been delivered to the Carriers and when shipments are likely to reach destination?	
8	If yes, is the mechanism being appropriately used to monitor pipeline inventory levels?	☐Yes ☐No		4	Does the procurement agent always rely on the information from the Suppliers?	
9	Are adjustments made for any inaccuracies in data on pipeline inventory levels?	☐Yes ☐No		4	Are order files updated when the Suppliers dispatch quantities less than ordered?	
10	a) Is there established procurement planning performance accuracy metric?	☐Yes ☐No		1	Are items procured being delivered on time to the facilities?	
	b)What is that metric			1		
	c) Is there target accuracy?	☐Yes ☐No		1		
	d) What is your current procurement planning performance accuracy performance?			1		
	e) Is procurement planning performance accuracy increasing/ decreasing over the last 3 yrs?	☐Increase ☐Decrease		1		
11	Is there any additional procurement planning metric in use?	☐Yes ☐No		3	Are costs of items procured not exceeding the budgeted funds for the purpose?	
	Total score			46		
	Total score percentage – Part II.			**100%**		

B.1.5 Data Management Capability Survey

	Data Management Capabilities	Yes = y, No = n, non applicable = NA	Points awarded for a y =1; n=0; NA=0	Max Score
1.1	Is there an inventory management information system in place, e.g., bin cards etc?		0	1
1.2	Is there documented SOP for use of the inventory management information system?		0	2
1.3	Is the inventory management information system updated with each transaction?		0	3
1.4	Is there a master list/database of stock items handled at this location?		0	2
1.5	Does this master list/database of stock items have the following details:			
	a) volume information			2
	b) weight information			2
1.6	Does the inventory management system provide information on the following elements:			
	a) stock on hand		0	1
	b) product name		0	1
	c) receipts		0	1
	d) issues		0	1
	e) maximum stock		0	1
	f) minimum stock		0	1
	e) losses/adjustments		0	1
	f) Frequency of ordering?		0	0.5
	g) Re-order quantity?		0	0.5
	h) item codes		0	0.5
	i) Expiry dates?		0	0.5
	j) special storage conditions (e.g., 2° to 8°C)?		0	1
1.7	Is system paper-based?			
1.8	Is system computer-based?			
1.9	How long would it take for an inventory report on all medicines held to be generated?			
1.10	What percentage of these records is considered accurate?			
1.11	Are there any tests of this accuracy?		0	3

2.1	Is there a system in place to record transactions/movement of medicines?		0	1
2.2	Is there documented SOP for using the system for recording transactions/movement of medicines?		0	2
2.3	Does the system above include information on the following:			
	b) Type and amount of medicines distributed?		0	1
	c) volume of medicine distributed			
	d) weight of medicine distributed			
	c) Name of person who verified the medicines dispatched?		0	1
	d) Name of recipient of medicines		0	1
	e) cost paid or received for medicine?			
2.4	Is system paper-based?			
2.5	Is system computer-based?			
2.6	How long would it take for a report on all transactions in one month for one medicine to be generated?			
2.7	What percentage of these records is considered accurate?			
2.8	Are there any tests of this accuracy?		0	3
3.1	Is there a mechanism for identifying medicines for disposal?		0	2
3.2	Is there documented SOP for disposal of expired/spoiled medicines?		0	2
3.3	Are records of disposal taken and names and quantity of disposed medicines recorded?		0	2

B.1.6 Fleet management Survey

Abridged Transport Management System Assessment Tool		
Note: This is a much simplified version of the standard Transport Management Assessment Tool, to be of value supporting evidence should be provided for each question		
S/N	**Question**	**Y/N**
1	Does the organisation have an up to date record of all of the vehicles in the fleet?	
2	Does the organisation have a transport policy dictating the use of vehicles in the fleet?	
3	Is there a budget for the transport operation?	
4	Is there a transport manager, or someone else with final responsibility for the management of the fleet?	
5	Are vehicles equipped with logbooks?	
6	Do drivers undertake daily vehicle checks?	
7	Is there a maintenance schedule dictating when vehicles require maintenance or servicing?	
8	Are any Key performance Indicators calculated on a monthly basis i.e. Fuel consumption, running costs, distance travelled, utilisation etc?	
9	Have the drivers received formal training?	

Appendix B.2: Costing Surveys

B.2.1 Commodity Distribution Costing Surveys

B.2.1.1 Transport Costing Survey

Cost Study

Transport Costing Survey (TCS)

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	Annual maintenance costs	9
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	Most difficult problem costing	12
	Easiest problem costing	14

Directions:
Step 1: Complete this questionnaire at locations using transport for collection or delivery of DRF items. In the table starting with question 2.2, complete section A for all facilities with transport. Complete section B only if you have not yet established maintenance and repair costs for that type of vehicle
Step 2: Once the paper-based survey has been completed, input the information into the excel spreadsheet.
Step 3: When all the information has been inputted into the excel file, email it to...

Section 1 Basic Information.

1.1 Today's Date (dd/mm/yy)	[_][_]-[_][_]-[_][_]
1.2 Interviewer's Name:	[_____]
1.4 LGA Name:	[_____]
1.5 Health Facility Name:	[_____]
1.5 Time Begin Survey (hh:mm) *In 24 hour format*	[_][_]:[_][_]

Section 2. Transport Vehicle Information

I'd like to talk to you about the different forms of transport you use to distribute DRF items in this state / that would be used to distribute DRF medicines in this state.

2.0 What type of vehicles do you use/plan to use for procurement/distribution of DRF items? *Select all that apply.* 0=Trucks 1=Boats 2=Motorcycles 3=Bicycles 4=Public Transportation 9=Don't know *If response is 9=Don't know, then select a different person to interview who can answer the question.* *If responses includes 0=Trucks, 1=Boats, 2=Motorcycles or 3=Bicycles, but NOT 4=Public Transportation, then proceed to question 2.3.*	[_] [_] [_] [_] [_]
2.1 What is the current price of fuel here for petrol and diesel? *Enter the price in Naira.*	Petrol [₦_____] Diesel [₦_____]
2.2 Please list the most commonly used types of vehicles above. Complete the table below.	N/A – Complete the tables below based on the responses. List the specific transport in the top row and complete the questions for each specific transport in the following rows.

Vehicle Costing Table

Note: If a box is open, the question is not recorded in the costing model, but used as a transition to answer following questions.

2.2 Vehicle type, make, and model	1.	2.	3.	4.	5.	6.
2.3 How many vehicles of this time do you have? *Enter a whole number. If a range is given, enter the average.*	Number:	Number:	Number:	Number:	Number:	Number:
Section 2A: Basic vehicle information *Complete this section for all vehicles.*						
2.4 Does this vehicle use petrol or diesel? 0=petrol 1=diesel	[__]	[__]	[__]	[__]	[__]	[__]
2.5 What is the odometer reading for this vehicle:	Km:	Km:	Km:	Km:	Km:	Km:
2.6 How many km did this vehicle drive in 2009? *Enter a number in km. If the respondent gives a range, enter the average.*	Km:	Km:	Km:	Km:	Km:	Km:
2.7 Age of the vehicle in years	Years:	Years:	Years:	Years:	Years:	Years:

2.8 What is the condition of this vehicle? 0=Excellent – less than 1 year old 1=Good - only routine service required 2=Fair – ok but major work required in 6 months 3=Poor – used locally as it is unreliable 4=Under repair 6=Beyond repair	[__]	[__]	[__]	[__]	[__]	[__]
2.9 What is the storage capacity of this vehicle in cubic meters?	m^3	m^3	m^3	m^3	m^3	m^3
2.10 Purchase price of the vehicle. *Enter the price of the vehicle in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.11 How many breakdowns did this vehicle have in the last year? *Enter a number. If a range is given, enter the average.*	Number:	Number:	Number:	Number:	Number:	Number:
2.12 Annual cost of insurance for the vehicle. *Enter the annual cost of the insurance in Naira. If a range is given, enter the average .Enter 0 if vehicle is not insured.*	₦	₦	₦	₦	₦	₦

2.13 How many kilometers per liter of fuel for this type of vehicle? *Enter the number of kilometers. If a range is given, enter the average.*	KM/L:	KM/L:	KM/L:	KM/L:	KM/L:	KM/L:
2.14 How many years do you expect to be able to use this vehicle? *Enter the useful life of the vehicle in years. If a range is given, enter the average.*	Years:	Years:	Years:	Years:	Years:	Years:
Section 2B: Maintenance and Repair Costs ***Stop the survey here if you already have maintenance and repair costs for these vehicle types.*** **This section is if records are available** *Complete this section if maintenance and repair records are available. If the records are not available, then skip this section and complete the rest of the survey.*						
2.15 What was the total cost of maintenance for the vehicle in 2009? *Enter an amount in Naira based on vehicle records. If no records are available, complete the maintenance section of this table below (section 2.6).*	₦	₦	₦	₦	₦	₦
2.16 What was the total cost of vehicle repairs in 2009? *Enter an amount in Naira based on vehicle records. If no records are available, complete the breakdown repair section of*	₦	₦	₦	₦	₦	₦

this table below (section 2.7).						
2.17 Was the maintenance and repair work performed in-house? 0=no 1=yes 2=combination *If no, then you are finished with this survey. If yes or a combination, finish section 2.5.*						
2.18 For each person who performed in-house maintenance or repairs list the job/salary grade.	1[_____] 2[_____] 3[_____] 4[_____] 5[_____] 6[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____] 6[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____] 6[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____] 6[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____] 6[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____] 6[_____]
2.19 *Interviewer: If the maintenance & repair work is performed in-house, what is the monthly salary of the person who performs the work?* *Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.20 On average, what is the time required per month for the in-house maintenance and repair activities? *Enter the amount of time in*	Days:	Days:	Days:	Days:	Days:	Days:

days. If a range is given, enter the average.						
Section 2B: Maintenance Costing (if no records are available) *Now I'd like to talk to you about the maintenance of the vehicle.*						
2.21 When was the last maintenance performed on this vehicle? MM/YYYY	[_ _ / _ _ _ _]	[_ _ / _ _ _ _]	[_ _ / _ _ _ _]	[_ _ / _ _ _ _]	[_ _ / _ _ _ _]	[_ _ / _ _ _ _]
2.22 Is there regular maintenance of this vehicle?	1 Yes [_] 2 No [_] 9 Don't know [_]	1 Yes [_] 2 No [_] 9 Don't know [_]	1 Yes [_] 2 No [_] 9 Don't know [_]	1 Yes [_] 2 No [_] 9 Don't know [_]	1 Yes [_] 2 No [_] 9 Don't know [_]	1 Yes [_] 2 No [_] 9 Don't know [_]
2.23 What are regular maintenance activities? *List maintenance activities*						
2.24 On average, how often is maintenance performed? *Select all that apply.*	0 Never [_] 1 Weekly [_] 2 Twice/month [_] 3 Monthly [_] 4 Quarterly [_] 5 2x per year [_] 9 Don't know [_]	0 Never [_] 1 Weekly [_] 2 Twice/month [_] 3 Monthly [_] 4 Quarterly [_] 5 2x per year [_] 9 Don't know [_]	0 Never [_] 1 Weekly [_] 2 Twice/month [_] 3 Monthly [_] 4 Quarterly [_] 5 2x per year [_] 9 Don't know [_]	0 Never [_] 1 Weekly [_] 2 Twice/month [_] 3 Monthly [_] 4 Quarterly [_] 5 2x per year [_] 9 Don't know [_]	0 Never [_] 1 Weekly [_] 2 Twice/month [_] 3 Monthly [_] 4 Quarterly [_] 5 2x per year [_] 9 Don't know [_]	0 Never [_] 1 Weekly [_] 2 Twice/month [_] 3 Monthly [_] 4 Quarterly [_] 5 2x per year [_] 9 Don't know [_]
For weekly, twice/month, and monthly maintenance.						

2.25 Who performs the regular maintenance? *List company or staff person. If done by a service provider, skip to question 2.26. If done in-house, skip to question 2.2.27.*						
2.26 If the maintenance is performed by a service provider, what is the price of that service per month? *Enter amount per incidence in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.27 Please list the job/salary grade for each person who performed the maintenance identified above. *Enter the grade for the person associated with the numbers in 2.25.*	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]
2.28 *Interviewer: If the maintenance is performed in-house, what is the monthly salary of the person who performs maintenance? Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦

2.29 What is the cost of the parts for 1 month of the regular maintenance? *Enter the amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.30 What is the time required per month for regular maintenance activities? *Enter the amount of time in days. If a range is given, enter the average.*	Days:	Days:	Days:	Days:	Days:	Days:
For quarterly maintenance.						
2.31 Who performs the regular maintenance? *List company or staff person. If done by a service provider, skip to question 2.32. If done in-house, skip to question 2.33.*						
2.32 If the maintenance is performed by a service provider, what is the price of that service? *Enter amount per incidence in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦

2.33 Please list the job/salary grade for each person who performed the maintenance identified above. *Enter the grade for the person associated with the numbers in 2.6k.*	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]
2.34 *Interviewer: If the maintenance is performed in-house, what is the monthly salary of the person who performs maintenance? Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.35 What is the cost of the parts for the regular maintenance? *Enter the amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.36 What is the time required for regular maintenance activities? *Enter the amount of time in days. If a range is given, enter the average.*	Days:	Days:	Days:	Days:	Days:	Days:
For annual maintenance.						

2.37 Who performs the regular maintenance? *List company or staff person. If done by a service provider, skip to question 2.38. If done in-house, skip to question 2.39.*						
2.38 If the maintenance is performed by a service provider, what is the price of that service? *Enter amount per incidence in Naira. If a range is given, enter the average. Skip to section 2.43.*	₦	₦	₦	₦	₦	₦
2.39 Please list the job/salary grade for each person who performed the maintenance identified above. *Enter the grade for the person associated with the numbers in 2.37.*	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]
2.40 *Interviewer: If the maintenance is performed in-house, what is the monthly salary of the person who performs maintenance? Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦

2.41 What is the cost of the parts for the regular maintenance? *Enter the amount in Naira. If a range is given, enter the average.*	~~₦~~	~~₦~~	~~₦~~	~~₦~~	~~₦~~	~~₦~~
2.42 What is the time required for regular maintenance activities? *Enter the amount of time in days. If a range is given, enter the average.*	Days:	Days:	Days:	Days:	Days:	Days:
Section 2B: Repair Costing (if no records are available) *Now I am finished asking questions about maintenance, and I'd like to ask you about the vehicle breakdowns and problems. A vehicle breakdown is a mechanical problem that causes the vehicle to be out of use for at least 1 day, but less than permanently.*						
Most common problem						
2.43 What is the most common problem with this vehicle? *Write in the problems.*						
2.44 How often does most common problem occur in one year? *Enter the number of instances. If a range is given, enter the average.*	Number of instances:	Number of instances:	Number of instances:	Number of instances:	Number of instances:	Number of instances:

2.45 Who performs the breakdown repair? *List company or staff person. If done by a service provider, skip to question 2.46. If done in-house, skip to question 2.47e.*						
2.46 If the problem is fixed by a service provider, what is the cost of that repair? *Enter the cost in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.47 Please list the job/salary grade for each person who performed the maintenance identified above. Enter the grade for the person associated with the numbers in 2.45.	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]
2.48 *Interviewer: If the repair is performed in-house, what is the monthly salary of the person who performs maintenance? Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦

2.49 What is the cost of the parts for the repair? *Enter the amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.50 What is the time required for the repair? *Enter the amount of time in days. If a range is given, enter the average.*	Days:	Days:	Days:	Days:	Days:	Days:
Most difficult problem *Group the vehicles in this table together as types of vehicles. For example, if there are two Toyota Hilux vehicles in this table, only complete the table for one.*						
2.51 What is the most difficult problem with this type of vehicle? *Write in the problems.*						
2.52 How often does most common problem occur in one year? *Enter the number of instances. If a range is given, enter the average.*	Number of instances:	Number of instances:	Number of instances:	Number of instances:	Number of instances:	Number of instances:
2.53 Who performs the breakdown repair? *List company or staff person. If done by a service provider, skip to question 2.54. If done in-house, skip to question 2.55m.*						

2.54 If the problem is fixed by a service provider, what is the cost of that repair? *Enter the cost in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.55 Please list the job/salary grade for each person who performed the maintenance identified above. *Enter the grade for the person associated with the numbers in 2.53.*	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]
2.56 *Interviewer: If the repair is performed in-house, what is the monthly salary of the person who performs maintenance? Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.57 What is the cost of the parts for the repair? *Enter the amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦

2.58 What is the time required for the repair? *Enter the amount of time in days. If a range is given, enter the average.*	Days:	Days:	Days:	Days:	Days:	Days:
Easiest problem *Group the vehicles in this table together as types of vehicles. For example, if there are two Toyota Hilux vehicles in this table, only complete the table for one.*						
2.59 What is the easiest problem with this type of vehicle? *Write in the problems.*						
2.60 How often does most common problem occur in one year? *Enter the number of instances. If a range is given, enter the average.*	Number of instances:	Number of instances:	Number of instances:	Number of instances:	Number of instances:	Number of instances:
2.61 Who performs the breakdown repair? *List company or staff person. If done by a service provider, skip to question 2.62. If done in-house, skip to question 2.63.*						
2.62 If the problem is fixed by a service provider, what is the cost of that repair? *Enter the cost in Naira. If a range is given, enter the average. Finished with survey.*	₦	₦	₦	₦	₦	₦

2.63 Please list the job/salary grade for each person who performed the maintenance identified above. *Enter the grade for the person associated with the numbers in 2.61.*	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]	1[_____] 2[_____] 3[_____]
2.64 *Interviewer: If the repair is performed in-house, what is the monthly salary of the person who performs maintenance? Enter amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.65 What is the cost of the parts for the repair? *Enter the amount in Naira. If a range is given, enter the average.*	₦	₦	₦	₦	₦	₦
2.66 What is the time required for the repair? *Enter the amount of time in days. If a range is given, enter the average.*	Days:	Days:	Days:	Days:	Days:	Days:

1.6 Time End Survey (hh:mm)	[_][_]:[_][_]

B.2.1.2 Cold Chain Costing Survey

Cold Chain Costing Survey (CCCS)

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Directions:
Complete this survey at the SHC's that use cold chain for their DRF drugs.

Section 1 Census Information.

1.2 Today's Date (dd/mm)	[_][_]-[_][_]
1.2 Interviewer's Name:	[_____]
1.3 LGA Name:	[_____]
1.4 Health Facility Name:	[_____]
1.5 Time Begin Survey (hh:mm) *In 24 hour format*	[_][_]:[_][_]

Section 2. Cold Chain Costing Information

2.0 What type of refrigerators and how many of each type do you use in the for DRF drugs? *List the number of refrigerators of each type that are used.* Electric Gas Petrol Solar Solar/Electric Gas/Electric	[__] [__] [__] [__] [__] [__]
2.1 What percentage of these refrigerators are used for DRF drugs? *Enter the amount as a percentage of refrigerator capacity used. For example, if the drug has 50% DRF drugs and 50% free MCH drugs, enter 50% even if only half of the refrigerator capacity is used.*	Refrigerator 1: [__%] Refrigerator 2: [__%] Refrigerator 3: [__%] Refrigerator 4: [__%] Refrigerator 5: [__%] Refrigerator 6: [__%] Refrigerator 7: [__%]
2.2 What is the purchase price of the refrigerator? *Enter the price in Naira for each type of refrigerator selected in question 2.0. If a range is given, enter the average. If the price is unknown, enter 9999.* 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	[₦_____] [₦_____] [₦_____] [₦_____] [₦_____] [₦_____]
2.3 What is the average life span of a refrigerator in years for the refrigerators listed in question 2.0? *Enter the time in years. If a range is given, enter the average. If the time is unknown, enter 9999.* 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	[Years_____] [Years_____] [Years_____] [Years_____] [Years_____] [Years_____]

2.4 If the refrigerator is gas, what is the price per gas per month in Naira?	[₦_____]
2.5 In the case that the refrigerator(s) used are electric, what is the monthly price of electricity?	[₦_____]
2.6 On average, how often does a refrigerator break down in a year? *If a range is given, enter the average. If the answer is not known, enter 9999.* 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	 [#_____] [#_____] [#_____] [#_____] [#_____] [#_____]
2.7 What is the easiest refrigerator breakdown to fix? (e.g. a broken burner) 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	 [_____] [_____] [_____] [_____] [_____] [_____]
2.8 What is the most difficult refrigerator breakdown to fix? 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	 [_____] [_____] [_____] [_____] [_____] [_____]
2.9 For the easiest refrigerator breakdowns, what is the time required for repair in days? *Enter the time it takes to complete the repair once a technician and the parts are available. If a range is given, enter the average. Enter the time in days.* 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	 [Days_____] [Days_____] [Days_____] [Days_____] [Days_____] [Days_____]

2.10 For the most difficult refrigerator breakdowns, what is the time required for repair in days? *Enter the time it takes to complete the repair once a technician and the parts are available. If a range is given, enter the average. Enter the time in days.* 0=Electric 1=Gas 2=Petrol 3=Solar *(Price including battery)* 4=Solar/Electric 5=Gas/Electric	[Days_____] [Days_____] [Days_____] [Days_____] [Days_____] [Days_____]
2.11 Who repairs the broken refrigerators? *Enter the position next to the number, up to 5 people.*	[1:_____] [2:_____] [3:_____] [4:_____] [5:_____]
2.12 What is the monthly net salary for these people? *Enter the monthly net salary in ₦ for each of the people listed in 2.11.*	[1:_____₦] [2:_____₦] [3:_____₦] [4:_____₦] [5:_____₦]
2.13 Do they receive a per diem for traveling to fix the refrigerator? If yes, enter the average per diem rate. *Enter the per diem rate in ₦ for each of the people listed in 2.11.*	[1:_____₦] [2:_____₦] [3:_____₦] [4:_____₦] [5:_____₦]
2.14 Fill out the table below with the prices of spare parts. *If a range is given, enter the average.*	N/A – Fill out the table below.

Table 2.14 **Refrigerator Type**	**Most Common Spare Part**			**Second Most Common Spare Part**			**Third Most Common Spare Part**		
	Part Name	**Price of Spare Part in ₦** *If a range is given, enter the average.*	**Frequency of Spare Part** *What percent of repairs use this spare part?*	**Part Name**	**Price of Spare Part in ₦** *If a range is given, enter the average.*	**Frequency of Spare Part** *What percent of repairs use this spare part?*	**Part Name**	**Price of Spare Part in ₦** *If a range is given, enter the average.*	**Frequency of Spare Part** *What percent of repairs use this spare part?*
Electric									
Gas									
Petrol									
Solar									
Solar/Electric									
Petrol Electric									

1.6 Time End Survey (hh:mm) *In 24 hour format*	[_][_]:[_][_]

B.2.1.3 Distribution costing survey public sector

Cost Study
Distribution Costing Survey (DCS) Public Sector

Table of Contents:

Section	Contents	Page
1	Basic Information	2
2	Basic Distribution Information	3
3	Distribution in the Last 3 Instances	5

Directions:
Step 1: Follow the flow chart below to determine if you need to fill out this questionnaire. The basic principle is that you fill this out at any location (state SR, LGA-level, or facility-level) if they are responsible for moving commodities from one location to replenish another.

Complete this questionnaire with the person responsible for stock replenishment. The appropriate person to respond to this questionnaire is someone who manages the process of restocking their facility or another facility.

At the state, LGA, and facility level, attempt to obtain a list of per diem rates for each job grade. If the facility does not have this information, the state or LGA should provide it. This will be used to provide data for questions 3.9, 3.10, and 3.14 in this survey.

Step 2: Once the paper-based survey has been completed, input the information into the Excel spreadsheet.

Step 3: When all the information has been inputted into the excel file, email it to…

<u>When do I use this survey?</u>

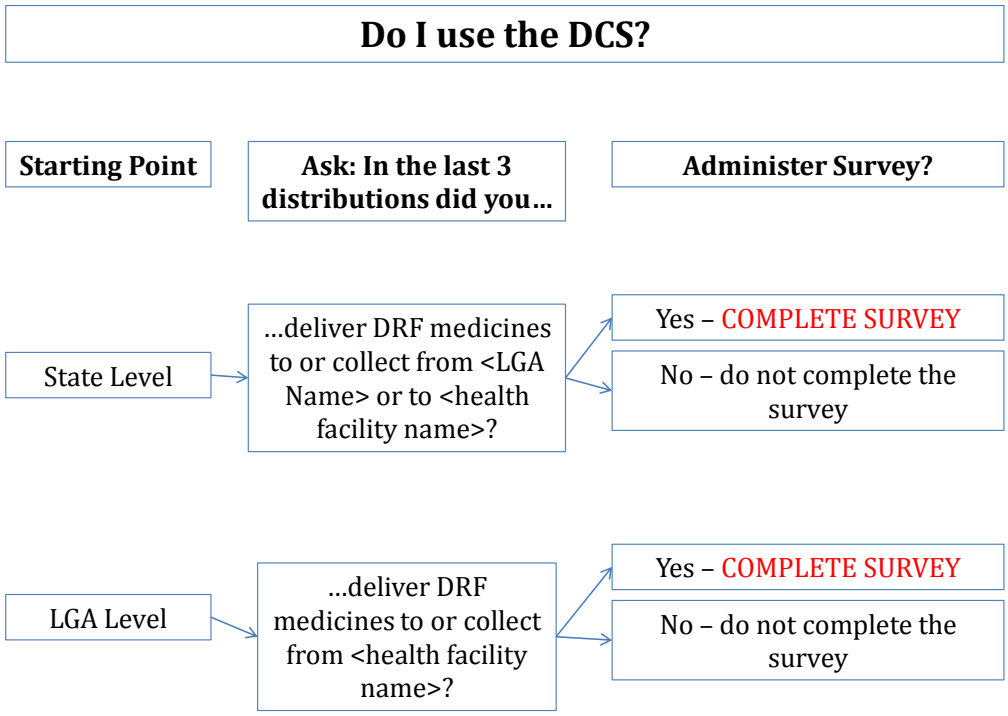
Follow the flow chart below to determine if you need to complete this survey at a given location.

First identify your supply chain based on the list of health facilities in the study:
State _____
LGA _____
Health Facility _____

Throughout the survey, fill in the specific names of the state, LGA, and health facility where you see them written as <state>, <LGA>, or <health facility>.

Note: If a location qualifies more than once for this survey, fill out one survey for each qualification.

- For example, if an LGA both collected DRF medicines from the state and delivered them to a health facility, fill out this questionnaire once for collecting DRF medicines from the state and once for delivering them to a health facility.
- Another example is a state that delivered DRF medicines to the LGA in the study and the health facility in the study. One survey should be completed for the state delivering to the LGA and another survey for the state delivering to the health facility.



Section 1 Basic Information.

1.3 Today's Date (dd/mm/yy)	[_][_]-[_][_]-[_][_]
1.2 Interviewer's Name:	[_____]
1.3 LGA Name:	[_____]
1.4 Health Facility Name:	[_____]
1.5 Time Begin Survey (hh:mm) *In 24 hour format*	[_][_]:[_][_]

Section 2. Basic Distribution Information

2.0 How does this facility receive their DRF drugs? 0=State delivers to PHC 1=PHC that collects from the state 2=Combination of collection & delivery from the state *Note: throughout this survey use this information to fill in the <collect/deliver> and <location>.*	[_]
2.0a *Interviewer: Enter the LGA for the supply chain this questionnaire applies to.*	[_____]
2.0b *Interviewer: Enter the health facility name for the supply chain this questionnaire applies to.*	[_____]
2.1 What are the distances (in km) to the 4 closest PHCs?	[_____km] [_____km] [_____km] [_____km]
2.2 What are the distances (in km) the 2 closest PHCs using DRF?	[_____km] [_____km]
2.3 What is the distance in km from your facility to the following cities? 0=Gwarzo 1=Danbatta 2=Rano 3= Gaya	 [_____km] [_____km] [_____km] [_____km]
2.4 What is the distance in hours from your facility to the following cities? 0=Gwarzo 1=Danbatta 2=Rano 3= Gaya	 [_____hours] [_____hours] [_____hours] [_____hours]

2.5 Of the closest city above, what form of transport would you use to get there if you had to pick up DRF drugs there? *Select the most commonly used.* 0=ambulance, facility owned 1=truck, facility owned 2=truck, personal owned 3= motorcycle, facility owned 4=motorcycle, personal owned 5=bicycle, facility owned 6=bicycle, personal owned 7=walk 9=public transportation 9=ambulance 10=other:_____	[____]
2.6 How many store keeping staff does this facility have? Store keeping staff manages inventory, completes bin cards, counts staff, etc. *Enter a number of staff. If the respondent gives a range, enter the average.*	[___]
2.7 Please list the titles of each store keeping staff. *Enter a each unique title by a unique number.*	[1: _____] [2: _____] [3: _____] [4: _____] [5: _____]
2.8 Please list the job/salary grade for each store keeping staff. *Enter the grade for the person associated with the numbers in 2.7*	[1: _____] [2: _____] [3: _____] [4: _____] [5: _____]

2.9 For each store keeping staff, what is their monthly net salary? *Enter the salary in Naira next to the number that corresponds with their job title. If they provide an annual salary, divide it by 12.*	[1: _____] [2: _____] [3: _____] [4: _____] [5: _____]
2.10 For each store keeping staff, what percentage FTE (full time equivalent) spent on store keeping? *Enter the percent that corresponds with their job title. If they give a range, enter the average.*	[1: _____%] [2: _____%] [3: _____%] [4: _____%] [5: _____%]

MIT ZARAGOZA
International Logistics Program

Section 3. Distribution in the last 3 instances.

Question	Procurement 1 Requisition	Procurement 1 Procurement	Procurement 2 Requisition	Procurement 2 Procurement	Procurement 3 Requisition	Procurement 3 Procurement
3.0 a Enter the procurement date. (dd/mm/yy) *If respondent recall is not sufficient for the month, enter 9999 and stop completing the questions for that procurement.*	[_][_]-[_][_]-[_][_]	[_][_]-[_][_]-[_][_]	[_][_]-[_][_]-[_][_]	[_][_]-[_][_]-[_][_]	[_][_]-[_][_]-[_][_]	[_][_]-[_][_]-[_][_]
3.0b In this delivery/collection, did you make 1 trip for the requisition and replenishment/payment? 0=yes 1=no *If yes, then complete the columns for requisition.*	[_____]		[_____]		[_____]	
3.1 When you delivered/collected DRF items in this procurement, did you also collect other items? 0=no 1=yes 9=Don't know *If 0 or 9, skip to question 3.2*	[_]	[_]	[_]	[_]	[_]	[_]
3.1a Approximately what portion of your trip was for DRF items? 0=25% (a little) 1=50% (half)	[_]	[_]	[_]	[_]	[_]	[_]

Question	Procurement 1		Procurement 2		Procurement 3	
	Requisition	Procurement	Requisition	Procurement	Requisition	Procurement
2=75% (most) 3=100% (all)						
3.2 How many forms of transport did you use for the delivery in <month>? 1=1 2=2 3=3 9=Don't know *If 1 form of transport, fill out section 3.3* *If 2 forms of transport, fill out section 3.3 and 3.4.* *If 3 forms of transport, fill out section 3.3, 3.4, and 3.5.*	[_]	[_]	[_]	[_]	[_]	[_]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
Used 1 form of transport						
3.3 What kind of transport did you use for the delivery/collection? 0=truck, facility owned 1=truck, personal owned 2= motorcycle, facility owned 3=motorcycle, personal owned 4=bicycle, facility owned 5=bicycle, personal owned 6=walk 7=public transportation 8=ambulance 9=other:_____ *Select one only. If public transportation, select public transportation (even if it is a truck, boat, etc.) and complete 3.3a.*	[_]	[_]	[_]	[_]	[_]	[_]
3.3a What was the price of the public transportation? *Enter an amount in Naira.*	[₦_____]	[₦_____]	[₦_____]	[₦_____]	[₦_____]	[₦_____]
3.3b What was the one way distance you traveled using this form of transport?	[_____km]	[_____km]	[_____km]	[_____km]	[_____km]	[_____km]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
Enter an amount in km.						
Used 2 forms of transport. Complete for second form of transport.						
3.4 What was the second kind of transport you used for the delivery/collection? 0=truck, facility owned 1=truck, personal owned 2= motorcycle, facility owned 3=motorcycle, personal owned 4=bicycle, facility owned 5=bicycle, personal owned 6=walk 7=public transportation 8=ambulance 9=other:_____ 9999=Not applicable *Select one only. If public transportation, select public transportation (even if it is a truck, boat, etc.) and complete 3.4a.*	[_]	[_]	[_]	[_]	[_]	[_]
3.4a What was the price of the public transportation? *Enter an amount in Naira.*	[₦_____]	[₦_____]	[₦_____]	[₦_____]	[₦_____]	[₦_____]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
3.4b What was the one way distance you traveled using this form of transport? *Enter an amount in km.*	[_____km]	[_____km]	[_____km]	[_____km]	[_____km]	[_____km]
Used 3 forms of transport. Complete for third form of transport.						
3.5 What was the third kind of transport you used for the delivery/collection? 0=truck, facility owned 1=truck, personal owned 2= motorcycle, facility owned 3=motorcycle, personal owned 4=bicycle, facility owned 5=bicycle, personal owned 6=walk 7=public transportation 8=ambulance 9=other:_____ 9999=Not applicable *Select one only. If public transportation, select public transportation (even if it is a truck, boat, etc.) and complete 3.5a.*	[_]	[_]	[_]	[_]	[_]	[_]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
3.5a What was the price of the public transportation? *Enter an amount in Naira.*	[₦_____]	[₦_____]	[₦_____]	[₦_____]	[₦_____]	[₦_____]
3.5b What was the one way distance you traveled using this form of transport? *Enter an amount in km.*	[_____km]	[_____km]	[_____km]	[_____km]	[_____km]	[_____km]
End of questions on the form of transport. *Now I would like to ask you about how much time the trip took.*						
3.6 How many days did it take to make the delivery/collection trip? *Enter a number in days with 8 hours = 1 day. Portions of days are acceptable (e.g. 0.25, 0.5, 0.75). If the respondent gives a range, enter the average.*	[___days]	[___days]	[___days]	[___days]	[___days]	[___days]
3.6a How much time (in hours) did you wait at the DMA? *Enter the time in hours. If the respondent gives a range, enter the average.*	[___hours]	[___hours]	[___hours]	[___hours]	[___hours]	[___hours]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
3.6b How many facilities did you deliver to/collect for in this trip? *Enter a whole number. If the respondent gives a range, enter the average.*	[___facilities]	[___facilities]	[___facilities]	[___facilities]	[___facilities]	[___facilities]
3.7 How many people went on the delivery/collection trip? *Enter a whole number.*	[_]	[_]	[_]	[_]	[_]	[_]
3.8 Please list the titles of each person who went on the trip. *Enter each unique title by a unique number.*	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]
3.8a Please list the job/salary grade for each person who went on the trip. *Enter the grade for the person associated with the numbers in 3.8.*	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]
3.9 For each person who went on the trip, what is their monthly net salary? *Enter the salary in Naira next to the number that corresponds with their job title. If they provide an*	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
annual salary, divide it by 12.						
3.10 For each person on who participated in the trip, what amount did they receive for their expenses? *Enter the amount in Naira next to the number that corresponds with their job title and salary.*	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]
End of questions on the staff participating on the trip. *Now I would like to ask you about any management (facility DRF committee) and store keeping staff involved in the distribution.*						
3.11 Were any facility DRF committee members used in the preparations for this procurement? For example, for approving requisitions, signing checks, etc. This includes the Local Health Committee (LHC), but does not include store keepers. *Enter a number of members. If the respondent gives a range, enter the average.*	[___members]	[___members]	[___members]	[___members]	[___members]	[___members]
3.12 Please list the titles of each facility DRF committee members (including LHC) involved in the procurement.	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
Enter each unique title by a unique number.						
3.12a Please list the job/salary grade for each person who managed the preparations for the procurement. *Enter the grade for the person associated with the numbers in 3.12. If they are volunteer, enter 9999.*	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]	1[_____] 2[_____] 3[_____] 4[_____] 5[_____]
3.13 For each facility DRF committee members involved in the procurement, what is their monthly net salary? *Enter the salary in Naira next to the number that corresponds with their job title. If they provide an annual salary, divide it by 12.*	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]	1[₦_____] 2[₦_____] 3[₦_____] 4[₦_____] 5[₦_____]

Question	Procurement 1 Requisition	Procurement	Procurement 2 Requisition	Procurement	Procurement 3 Requisition	Procurement
3.14 For each facility DRF committee members, how many hours did they spend managing in the procurement? The requisition includes all the activities from selection, quantification, submission to DMA for costing. Procurement includes from the time the check is written until the DRF items are received in the store. *Enter the number of hours in that corresponds with their job title. If they give a range, enter the average. If they respond in days, multiply by 8.*	1[___ hours] 2[___ hours] 3[___ hours] 4[___ hours] 5[___ hours]	1[___ hours] 2[___ hours] 3[___ hours] 4[___ hours] 5[___ hours]	1[___ hours] 2[___ hours] 3[___ hours] 4[___ hours] 5[___ hours]	1[___ hours] 2[___ hours] 3[___ hours] 4[___ hours] 5[___ hours]	1[___ hours] 2[___ hours] 3[___ hours] 4[___ hours] 5[___ hours]	1[___ hours] 2[___ hours] 3[___ hours] 4[___ hours] 5[___ hours]

Ask to take photos of bin cards for:

1. Albendazole
2. Multi-vitamin syrup

Take photos of the bin cards for the data going back one year.

Time End Survey (hh:mm)	[_][_]:[_][_]

B.2.2 Warehouse Costing Surveys

This survey was created for the Kano, Nigeria Case Study. It would be modified to match the setting of another country.

DMA Warehouse cost assessment survey

Date	
Address	
Names of interviewees	
Interviewer	

Instructions

Please try to get any electronic documentation on sales and inventory from the DMA which shows this information broken down for PHCs and SHCs for year 2009.

Management/financial records survey

1) Please provide the following for the essential drug DRF program to PHCs and SHCs:

a) total sales (₦) to PHCs for the period Jan 1, 2009 to Dec. 31, 2009	
b) total sales in volume (m^3) to PHCs for the period Jan 1, 2009 to Dec. 31, 2009[1]	
c) total sales (₦) to SHCs for the period Jan 1, 2009 to Dec. 31, 2009	
d) total sales in volume (m^3) to SHCs for the period Jan 1, 2009 to Dec. 31, 2009	
e) total area (m^2) dedicated to storage for the period Jan 1, 2009 to Dec. 31, 2009 (including receiving/shipping area)	
f) for e), how many buildings comprise storage?	
g) average utilization of dedicated storage area for the period Jan 1, 2009 to Dec. 31, 2009	
h) average inventory (₦) for the period Jan 1, 2009 to Dec. 31, 2009	
i) average inventory in volume (m^3) for the period Jan 1, 2009 to Dec. 31, 2009	
j) inventory losses (₦) (expiry, damaged, leakage, etc.) for the period Jan 1, 2009 to Dec. 31, 2009:	
k) Number of PHCs receiving sales for the period Jan 1, 2009 to Dec. 31, 2009:	
l) Number of SHCs receiving sales for the period Jan 1, 2009 to Dec. 31, 2009	

[1] If DMA is unable to supply volume then we need to get from the DMA sales in units for all products along with a master list which contains the volume for a packet of these products. The sales in volume can then be backed out.

2) Are any expenses for administration ,receiving, storage, and issuing of Essential Drugs shared with other health programs?
    a. If yes, please provide the following:

Expense	Expense amount (₦) for the period Jan 1, 2009 to Dec. 31, 2009	Total storage area (m^2) of all programs sharing expense for the period Jan 1, 2009 to Dec. 31, 2009	Total sales (₦) of all programs sharing expense for the period Jan 1, 2009 to Dec. 31, 2009
Lease cost[2]			
Building Depreciation[3]			
General Structural Maintenance			
Electricity			
Water			
Security			
Pest control			
Other utilities			
Refrigeration maintenance			
Refrigeration depreciation[4]			
Other storage equipment maintenance			
Other storage equipment depreciation[5]			
Administration salaries			

[2] Either warehouse is leased or owned, so either there is a lease cost or business depreciation.
[3] Assume useful life of warehouse is 40 years. Annual depreciation cost = Current construction cost/ number of years useful life. If construction cost of building is unavailable, provide general description of buildings: size, construction material, rough age, quantity, etc.
[4] Assume average life of refrigerators and freezers is about 7 years.: Annual depreciation cost = Current purchase cost of refrigerators and freezers/ number of years useful life. If purchase cost of equipment is unavailable, provide general description of equipment, make,, model, age, quantity, etc.
[5] Again annual depreciation cost = Current purchase cost of equipment/ number of years useful life. If useful life is unknown, determine purchase cost of equipment. If purchase cost of equipment is unavailable, provide general description of equipment, make,, model, age, quantity, etc.

and benefits			
Basic Storage management salaries and benefits			
Advanced Storage management salaries and benefits[6]			
Other			

Notes:_____

_____

_____

_____

b. For shared salaries, please provide the following breakdown:

Salaried Positions – Title	Number of Positions	Salary Grade / Annual Salary

[6] Advanced storage management includes such additional warehouse related services such as cross docking,

3) For expenses that are not shared please provide the following:

Expense	Expense amount (₦) for the period Jan 1, 2009 to Dec. 31, 2009	Volume of dedicated area if different from 1c)	Utilization of dedicated area if different from 1d)
Lease cost[7]			
Building Depreciation[8]			
General Structural Maintenance			
Electricity			
Water			
Other utilities			
Security			
Pest control			
Refrigeration maintenance			
Refrigeration depreciation[9]			
Other equipment maintenance			
Other equipment depreciation[10]			
Administration salaries and benefits			
Storage management salaries and benefits			
Other salaries and benefits			

[7] Either warehouse is leased or owned, so either there is a lease cost or business depreciation.
[8] Assume useful life of warehouse is 40 years. Annual depreciation cost = Current construction cost/ number of years useful life. If construction cost of building is unavailable, provide general description of buildings: size, construction material, rough age, quantity, etc.
[9] Assume average life of refrigerators and freezers is about 7 years.: Annual cost = Current purchase cost of refrigerators and freezers/ number of years useful life
[10] Again annual depreciation cost = Current purchase cost of equipment/ number of years useful life. If useful life is unknown, determine purchase cost of equipment. If purchase cost of equipment is unavailable, provide general description of equipment, make,, model, age, quantity, etc.

Other			

Notes:_____

_____

_____

_____

a. For dedicated salaries, please provide the following breakdown:

Salaried Positions - Title	Number of Positions	Salary Grade/Annual Salary

4) For PHC types please provide the following:

PHC type	Total sales (₦) for essential drugs for the period Jan 1, 2009 to Dec. 31, 2009	Total sales in volume (m^3) for essential drugs for the period Jan 1, 2009 to Dec. 31, 2009	Total issuance in units for free antimalarials for period Jan 1, 2009 to Dec. 31, 2009[11]
Dispensary			
Health Post			
Basic Health Center			
Primary Health Center			

5) For the sample PHCs please provide the following:

PHC	Total sales (₦) for essential drugs for the period Jan 1, 2009 to Dec. 31, 2009	Total sales in volume (m^3) for essential drugs for the period Jan 1, 2009 to Dec. 31, 2009	Total issuance in units for free antimalarials for period Jan 1, 2009 to Dec. 31, 2009[12]
1.			
5.			

[11] Units or volume (m^3) would be appropriate here. Please specify if volume is used here instead.
[12] Units or volume (m^3) would be appropriate here. Please specify if volume is used here instead.

10.			

Notes:_____

_____

_____

_____

6) For the all SHCs and sample SHCs please provide the following:

SHC	Total sales (₦) for essential drugs for the period Jan 1, 2009 to Dec. 31, 2009	Total sales in volume (m^3) for essential drugs for the period Jan 1, 2009 to Dec. 31, 2009	Total issuance in volume (m^3) for free antimalarials for the period Jan 1, 2009 to Dec. 31, 2009	Total issuance in volume (m^3) for Free Maternal and Child health for the period Jan 1, 2009 to Dec.

				31, 2009
All SHCs				
1.				
5.				

Notes:_____

_____

_____

_____

7) For the sample products please provide the following:

Products	Total number of facilities receiving product	Total sales (₦) for for the period Jan 1, 2009 to Dec. 31, 2009	Total sales in volume (m^3) for the period Jan 1, 2009 to Dec. 31, 2009	Total issuance in volume (m^3) for Free Maternal and Child health for the period Jan 1, 2009 to Dec. 31, 2009
Multi-Vitamin Syrup to all PHCs				
Multi-Vitamin Syrup to all SHCs				
Albendazole Tablets 200 mg[13] to all PHCs				
Albendazole Tablets 200 mg to all SHCs				

Notes:_____

_____

_____

___

[13] anti- worm

Visual Inspection of Storage Area

8) Please observe the following:

a. for each building comprising dedicated storage list the following dimensions:

building	length (m)	Width (m)	Height of shelving stacks (m)	Percentage of area comprised of aisles	Percentage of storage area comprising receiving/shipping area	Construction material for building

b. confirm size of the other storage areas that share expenses with essential drugs:_____

Appendix B.3: Costing Model

This Excel Spreadsheets for this costing model are found in "Modeling Costs."

B.3.1 Transportation Costing Model Worksheet

Instructions for Transportation Costing Model

The Transportation Costing model is the "Transport Model" Worksheet in the " Modeling Costs" Spreadsheet

In the transportation model, each column represents a network or a group of networks that is managed using the identical distribution system. Cells highlighted in yellow represent input data to describe the distribution system. Although most rows are self-explanatory, the following rows required a bit more instruction.

Explained Rows	Row Description
Number of networks in system	This input allows for more than one network that is identical to be captured with one column. This row has the number of such networks in effectively multiplies costs by the factor.
Maximum number of destinations per vehicle in one day (with capacity constraint)	This output row calculates the maximum number of destinations per vehicle in a one-day round-trip based on the capacity constraints of the vehicle. The formula here is not very accurate for less than full truckloads in a one-day trip.
Maximum number of destinations per vehicle in one day round-trip (without capacity constraint)	This output row calculates the maximum number of destinations per vehicle in a one-day round-trip based on travel times. It ignores truck low-volume capacity constraints.
Maximum feasible number of destinations per vehicle in one day	This output row is the minimum of the two maximum destinations calculated above. It is a reference.
Number of destinations for each vehicle in one-day	This input row gives the average number of destinations for each vehicle. It should be lower than the maximum feasible number of destinations calculated above. It does not have to be equal to the maximum feasible number.
Outsourced (y or n)	This input row indicates whether the distribution system is in-sourced or outsourced. Depending on the parameter, (y for outsourced, n for in-sourced) costs for the system will be calculated differently.
Number of Driver's mates	This input row is for the number of helpers who would accompany a driver on a round-trip. This number would affect per diem and salary costs
Average Cycle Inventory at a destination	This output row calculates the average inventory at a destination based on the frequency of replenishments.

Cumulative Sales across networks (y or n)	This input row indicates whether the sales through that network are cumulative for total sales or not. One common case where sales may not be cumulative is where a network represents downstream flow of inventory, but upstream flow of this inventory is already captured in another network
Cumulative Inventory across networks (y or n)	This input row indicates whether the inventory in that network is cumulative for total inventory or not. One common case where inventory may not be cumulative is where a network represents downstream flow of inventory, but upstream flow of this inventory is already captured in another network
Real Interest Rate	As opposed to the nominal interest rate, this is the nominal interest rate minus the inflation rate
Distribution Manager Operating Salary per day; management time per kilogram, kilometer, tripped, destination	A distribution manager for the distribution system is modeled by estimating management time based on the particulars of the distribution system and attributing a cost for the management time. As such, this management costs is modeled as a variable cost rather than a fixed cost.
Drivers Salary, driver's mate salary, insurance cost	It is possible for drivers and vehicles to be shared across networks. To indicate that these assets are indeed shared across networks, an "s" is placed at the end of the row. Total cost for these rows is the maximum of these costs across all networks.
3PL Details, cost per kilogram, cost per kilometer, cost per trip, cost per destination	These input rows allow for varying contract terms to be used to calculate the costs of the EPL engagement. These costs are only incorporated when the input outsourced row for that network is indicated "y".
3PL Management Training & Implementation Cost per day	A 3PL Management Training & Implementation Cost can be incorporated here as needed. It is modeled as a cost per distribution management time in days.

To add another transportation leg to model:

In order to add another transportation leg to the model select columns C and hit Ctrl C to copy. Insert the copied columns before the Total Cost column. The newly inserted columns can now be populated with the cost parameters of the new t ransportation leg. The Total Cost column should automatically now include the new transportation leg in the cost totals.

Screenshot of Transportation Costing Model

Network		outsourced	last mile delivery	Requisition collection
Source description (single node)	DMA	DMA	LGA	DMA
Destination description (single node or groups)	LGA	LGA	PHCs	PHCs
Number of destination points	14	30	1	155
Average distance from source (km)	30	87	5	67
Average distance between destination points (km)	15	15	0	5
Average yearly dollar shipment to 1 destination point	$ 604,795.45	$ 604,795.45	$ 171,683.87	$ -
Avg Dollar per unit volume (m3)	$ 769,230.77	$ 769,230.77	$ 769,230.77	$ 769,230.77
Average yearly shipment volume to 1 destination point (m3)	0.786234091	0.786234091	0.223189032	0
Typical Drug Density (Kg/m3)	100	100	100	100
Average yearly shipment Kg to 1 destination point	78.62340909	78.62340909	22.31890323	0
Number of Working days in a year	240	240	240	240
Number of networks in system	1	1	155	1
Policy				
Average number of visits to destination per year	4	4	4	4
Average volume shipment per visit (m3)	0.196558523	0.196558523	0.055797258	0
Average dollar shipment per visit	151198.8636	151198.8636	42920.96774	0
Average Kg shipment per visit	19.65585227	19.65585227	5.579725806	0
Number of vehicles	1	1	1	1
Average volume capacity of vehicles (m3)	2.5	2.5	2.5	2.5
Average time at each destination (hr)	1	1	0.33	0.33
Average time at source (hr) per destination	1	0.33	0.33	0.05
Average speed (kilometers per hour)	45	45	45	45
Average km per litre	8	8	8	8
Number of hours in one day	7	7	7	7
Heuristic optimization of number of destinations per vehicle by capacity	12.71885831	12.71885831	44.80506904	10000
Minimum time for one round-trip constrained by capacity (hrs)	30.77104995	24.78274822	29.79356779	4913.977778
Maximum number of destinations per vehicle in one day (with capacity constraint)	2.893369199	3.592499402	10.52695285	14.24507866
Maximum number of destinations per vehicle in one day round-trip (without capacity constraint)	2	2	10	8
Maximum feasible number of destinations per vehicle in one day	2	2	10	8
Number of destinations for each vehicle in one-day	2	2	1	8
Number of round trips in one-day for each vehicle	1	1	1	1
Outsourced (y or n)	n	y	y	n
Number of Driver's mates	1	1	0	1
Cumulative Sales across networks (y or n)	y	y	n	n
Cumulative Inventory across networks (y or n)	y	y	n	n
Operational stats				
Total utilization	12%	25%	2%	32%
Number of vehicle-days needed for distribution	28	60	620	77.5
Number of vehicle days available	240	240	37200	240
Total # of kilometres covered in one year	2100	11340	6200	13097.5
Total # of litres of fuel used in one year	262.5	1417.5	775	1637.1875
Total # of kg delivered	1100.727727	2358.702273	3459.43	0
Total # of trips	28	60	620	77.5
Total # of destinations	56	120	620	620
Total # of days at each Destination for loading in one year	8	5.657142857	0.188571429	4.428571429

Cost Parameters (assuming minimum # of days)						
Depreciation Cost per km	$ 30.00	$ 30.00	$ 30.00	$ 30.00		
Cost per litre of fuel	$ 65.00	$ 65.00	$ 65.00	$ 65.00		
Driver Operating Salary per day	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00		
Driver's mate operating Salary per day	$ 1,500.00	$ 1,500.00	$ 500.00	$ 1,500.00		
Perdiem Cost per day per individual	$ 500.00	$ 500.00	$ 500.00	$ 500.00		
Maintenance cost per km	$ 4.00	$ 4.00	$ 4.00	$ 4.00		
Breakdown costs per km	$ 0.22	$ 0.22	$ 0.22	$ 0.22		
Insurance per year per vehicle	$ 1,800.00	$ 1,800.00	$ 1,800.00	$ 1,800.00		
In Transit Insurance per $	$ 0.01	$ 0.01	$ 0.01	$ 0.01		
Real Interest Rate	0%	0%	0%	0%		
Inflation Rate	10%	10%	10%	10%		
Months of safety stock	1.5	1.5	1.5	1.5		
Distribution Manager Operating Salary per day	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00		
Distribution Management time per Kg (hrs)						
Distribution Management time per Km (hrs)						
Distribution Management time per trip (hrs)	1	1	0.33	0.33		
Distribution Management time per Destination (hrs)	1.33	0.66	0	0.2		
Cost Breakdowns						
Driver's Salary	$ 360,000.00	$ -	$ -	$ 360,000.00	$ 360,000.00	s
Driver's Mate Salary	$ 360,000.00	$ 360,000.00	$ -	$ 360,000.00	$ 360,000.00	s
Insurance cost	$ 1,800.00	$ -	$ -	$ 1,800.00	$ 1,800.00	s
Perdiem	$ 28,000.00	$ 30,000.00	$ -	$ 77,500.00	$ 135,500.00	
Depreciation	$ 63,000.00	$ -	$ -	$ 392,925.00	$ 455,925.00	
Fuel	$ 17,062.50	$ -	$ -	$ 106,417.19	$ 123,479.69	
Maintenance cost	$ 8,400.00	$ -	$ -	$ 52,390.00	$ 60,790.00	
Breakdown cost	$ 466.67	$ -	$ -	$ 2,910.56	$ 3,377.22	
GIT Insurance cost	$ 84,671.36	$ -	$ -	$ -	$ 84,671.36	
Foregone Interest Rate Costs	$ -	$ -	$ -	$ -	$ -	
Inflation Costs	$ 211,678.41	$ 453,596.59	$ -	$ -	$ 665,275.00	
Distribution Management time - hrs (based on kg moved)	0.00	0.00	0.00	0.00	0.00	
Distribution Management time - hrs (based on km travelled)	0.00	0.00	0.00	0.00	0.00	
Distribution Management Time - hrs (based on round trips)	28.00	60.00	204.60	25.58	318.18	
Distribution Management Time - hrs (based on # of destinati	74.48	79.20	0.00	124.00	277.68	
Total Distribution Management Time in days	14.64	19.89	29.23	21.37	85.12	
Total Distribution Management Cost	$ 43,920	$ 59,657	$ 87,686	$ 64,104	$ 255,366	
Insourced Cost Summaries						
Total Costs	$ 1,135,078.94	$ 843,596.59	$ -	$ 1,353,942.74	$ 2,506,184.70	
Total Sales	$ 8,467,136.36	$ 18,143,863.64	$ -	$ -	$ 26,611,000.00	
Total Costs per Total Sales	$ 0.13	$ 0.05	$ -		$ 0.09	
Total Cash Out Flows	$ 1,072,078.94	$ 843,596.59	$ -	$ 961,017.74	$ 1,794,893.27	
Total cash out Flows per Total Sales	$ 0.13	$ 0.05	$ -		$ 0.07	
3PL Details						
Cost per Kg		500				
Cost per Km						
Cost per trip			0			
Cost per Destination						
3PL Management Training & Implementation Cost per day		0		0		
Cost Breakdowns						
3PL Project Costs (based on kg moved)	$ -	$ 1,179,351.14	$ -	$ -	$ 1,179,351.14	
3PL Project Costs (based on km travelled)	$ -	$ -	$ -	$ -	$ -	
3PL Project Costs (based on round trips)	$ -	$ -	$ -	$ -	$ -	
3PL Project Costs (based on # of destinations)	$ -	$ -	$ -	$ -	$ -	
3PL Cost Summaries						
Total Costs	$ -	$ 1,179,351.14	$ -	$ -	$ 1,179,351.14	
Total Costs per Total Sales	$ -	$ 0.07	$ -		$ 0.04	
3PL Management Training cost per day	$ -	$ -	$ -	$ -	$ -	
Total Cost Summaries						
Total Costs	$ 1,135,078.94	$ 2,022,947.73	$ -	$ 1,353,942.74	$ 3,685,535.84	
Total Costs per Total Sales	$ 0.13	$ 0.11	$ -		$ 0.07	
Total Cash Out Flows	$ 1,072,078.94	$ 2,022,947.73	$ -	$ 961,017.74	$ 2,974,244.41	
Total cash out Flows per Total Sales	$ 0.13	$ 0.11	$ -		$ 0.11	

B.3.2 Warehousing Model Worksheet

Instructions for Warehousing Model Worksheet

The Warehouse Costing model is the "Warehouse Model" Worksheet in the "Modeling Costs" Spreadsheet.

In the warehousing model, each set of three columns (separated by the narrow red column) represents a warehouse/storage area or a group of such warehouses that is managed in an identical way, or can be assumed so for costing purposes. Cells highlighted in yellow represent input data to describe the distribution system. Although most rows are self-explanatory, the following rows and columns required a bit more instruction.

Columns	**Column description**
Shared Warehouse Occupancy	This column is for storage areas that are shared with other programs. Costs are prorated based on the storage area dedicated to the program in focus.
Prorated Costs	This column calculates the prorated costs for the program in focus where storage areas are shared with other programs.
Dedicated Warehouse occupancy	This column is for storage areas that are wholly dedicated to the program in focus. As such, cost do not have to be prorated.
Total Costs	This column is for total costs over all warehouses included in the model.
Rows	**Row descriptions**
Number of storage units	This row input captures the number of identical storage areas, acting as a multiplier on individual costs that populate the model.
Average Percentage of target program/products storage area utilized in a year	This row input captures the average utilization of the available warehouse space over a year. Too low a utilization suggests fixed costs that could be lowered by moving to a smaller warehouse space. Too high a utilization, could suggest capacity issues in periods of unusually high inventory levels, e.g., campaigns.
Warehouse Occupancy Prorate Percentage	Although the warehouse occupancy prorate percentage is usually calculated based on the fraction of storage space used by the program, this row input allows the prorated percentage to be changed if needed.
Salary Prorate Percentage	As with the Warehouse Occupancy Prorate Percentage row, this row input allows the salary prorated percentage to be set different to Warehouse Occupancy Prorate Percentage.
Inventory Cost Prorate	As with the Warehouse Occupancy Prorate Percentage row, this row input allows the inventory prorated percentage to be set different to

Percentage	Warehouse Occupancy Prorate Percentage.
Implied Insurance cost per $ of average monthly inventory (if no insurance paid)	In some cases where insurance is not purchased for inventory, it may be appropriate to include an implied insurance cost. This input row allows such a cost to be included in the model.
Cumulative Sales (y or n)	The row input indicates whether the sales across all the warehousing ares are to be aggregated to capture sales within the entire system (y) or sales across the entire supply chain should be calculated differently.

To add another warehouse to model:

In order to add another warehouse to the model select columns C-F and hit Ctrl C to copy. Insert these copied columns before the Total Cost column. The newly inserted columns can now be populated with the cost parameters of the new warehouse. The Total Cost column should automatically now include the new warehouse in the cost totals.

Screenshots of Warehousing Model

	Name of Depots	DMA
	Number of storage units	1
	Total Sales	$ 77,875,000
	COGS	$ 73,466,981

	Shared Warehouse Occupancy	Dedicated Warehouse occupancy
Total warehouse storage area (ft^2, m^2,…)		497
Warehouse storage area dedicated to target program/products		497
Warehouse Occupancy Prorate percentage based on storage area	0%	100%
Average Percentage of target program/products storage area utilized in a year		70%
Average percentage of rest of warehouse utilized in year		

Warehouse occupancy	Shared Warehouse Occupancy	Prorated Costs	Dedicated Warehouse occupancy
Warehouse Occupancy Prorate Percentage			
Lease cost[1]		$ -	
Building Depreciation[2]		$ -	
General Structural Maintenance		$ -	$ 738,550
Electricity		$ -	$ 180,000
Water		$ -	$ 144,000
Security		$ -	$ 240,000
Pest control		$ -	$ -
Other utilities		$ -	$ 6,500
Refrigeration maintenance		$ -	$ -
Refrigeration depreciation[3]		$ -	$ 139,764
Refrigeration Fuel		$ -	$ -
Other storage equipment maintenance		$ -	$ 443,650
Other storage equipment depreciation[4]		$ -	$ 279,807
Other		$ -	
		$ -	
Total		$ -	$ 2,172,271

Salaries and Benefits	Shared Warehouse Occupancy	Prorated Costs	Dedicated Warehouse occupancy
Salary Prorate Percentage			
Administration salaries and benefits		$ -	$ 1,750,000
Basic Storage management salaries and benefits		$ -	
Advanced Storage management salaries and benefits[5]		$ -	
Total		$ -	$ 1,750,000

Inventory Investment	Shared Warehouse Occupancy	Prorated Costs	Dedicated Warehouse occupancy
Real Interest rate			0%
Inflation			10%
Average Total Inventory			$ 185,910,713
Inventory Cost Prorate Percentage			
Foregone interests		$ -	$ -
Inflation		$ -	$ 18,591,071
Insurance		$ -	
Total Inventory losses		$ -	$ 3,536,640
Implied Insurance cost per $ of average monthly inventory (if no insurance paid)	0.01	$ -	$ 1,859,107
Total cost of inventory investment		$ -	$ 23,986,818

Summary of Warehouse Costs	Total Costs	Shared Warehouses	Dedicated Warehouses		Total Costs
Warehouse Occupancy	$ 2,172,271	$ -	$ 2,172,271		$ 2,172,271.00
Salaries and Fridge Benefits	$ 1,750,000	$ -	$ 1,750,000		$ 1,750,000.00
Inventory Investment	$ 23,986,818	$ -	$ 23,986,818		$ 23,986,818.48
Foregone Interests	$ -	$ -	$ -		$ -
Inflation Costs	$ 18,591,071	$ -	$ 18,591,071		$ 18,591,071.35
Inventory Losses	$ 3,536,640	$ -	$ 3,536,640		$ 3,536,640.00
Insurance/Implied Insurance	$ 1,859,107	$ -	$ 1,859,107		$ 1,859,107.13
Refrigerator Maintenance	$ -	$ -	$ -		$ -
Refrigerator Depreciation	$ 139,764	$ -	$ 139,764		$ 139,764.00
Refrigeration Fuel	$ -	$ -	$ -		$ -
Warehouse Occupancy less Refrigeration	$ 2,032,507	$ -	$ 2,032,507		$ 2,032,507.00
Total warehouse Cost	$ 27,909,089	$ -	$ 27,909,089		$ 27,909,089.48
Warehouse Cost per $ sales	$ 0.38	$ -	$ 0.38		$ 0.38
Cumulative Sales (y or n)	y				
Sales	$ 73,466,981.13				$ 73,466,981.13

Operating Statistics	Total	Shared Warehouses	Dedicated Warehouses	
Months of inventory	30.36641124	0	30.36641124	
Estimate of Unused Program Costs based on utilization	$ 588,341	$ -	$ 588,340.65	

B.3.3 Model Comparison Worksheet

Instructions for Model Comparison

Model Comparison is the "Model Comparison" Worksheet in the "Modeling Costs" Spreadsheet.

The "Model Comparison" worksheet allows for calculated costs of the supply chain network to recorded and then compared to the predicted costs of the warehousing and transportation models. The worksheet automatically references the warehousing and transportation model worksheets once the names of the worksheets are supplied.

Entering calculated costs of current supply chain network:

Enter costs is indicated by row descriptions in the cells colored in yellow. Rows can be hidden or made visible by grouping rows through clicks on the "+" or "–" boxes on the far left.

Referencing appropriate warehouse model worksheet:

Place the name of the warehousing model worksheet in the cell in row 1, column 3 (colored in yellow). Place the number of the column which calculates total costs for all warehouses in the "Warehouse model" worksheet in row 3, column 3.

Referencing appropriate transportation model worksheet:

Place the name of the transportation model worksheet in the cell in row 1, column 3 (colored in yellow). Place thr number of the column which calculates total costs for all transportation networks in the "Transport Model" worksheet in row 3, column 3.

Screenshot of Model Comparison

Warehouse Worksheet Name		Warehouse Model A	
Transportation Worksheet Name		Transport Model A	
Column for total costs in Warehouse Worksheet		7	
Column for total costs in Transportation Worksheet		6	
	Current System Costs	**Model Costs**	**System Savings**
Transport Costs			0
Vehicle Breakdown Cost	33,922	3,377	30,544
Public Transport Usage Cost	439,764		439,764
Fuel Costs	1,384,789	123,480	1,261,309
Vehicle Depreciation	1,834,828	455,925	1,378,903
Scheduled Vehicle Maintenance	369,815	60,790	309,025
Insurance Costs	688	1,800	(1,112)
Total Transport Costs	4,063,805	645,372	3,418,433
Distribution & Warehouse Personnel Costs			
Manager Salaries		255,366	(255,366)
Manager Per Diems			0
Distribution Salaries	6,414,993	720,000	5,694,993
Distribution Per Diems	3,326,263	135,500	3,190,763
Storekeeper Salaries			0
Storekeeper Per Diems			0
-			0
-			0
-			0
-			0
Total Distribution Personnel Costs	9,741,256	1,110,866	8,630,390
Total Distribution Personnel Salaries	6,414,993	975,366	5,439,627
Total Distribution Personnel Per Diems	3,326,263	135,500	3,190,763
Warehouse Personnel Costs			
Salaries and Fridge Benefits	17,616,424	1,750,000	15,866,424
-			0
-			0
Total Warehouse Personnel Costs	17,616,424	17,616,424	0
Total Personnel Costs	27,357,681	18,727,291	8,630,390

Total Occupancy Costs			
Scheduled Refrigerator Maintenance Costs		0	0
Refrigerator Depreciation		139,764	(139,764)
Refrigerator Fuel Costs		0	0
Refrigerator Breakdown Costs		0	0
Total Refrigeration Costs	0	139,764	(139,764)
Other Warehouse Occupancy Costs		2,172,271	(2,172,271)
Total Occupancy Costs	0	2,312,035	
Total Commodity Costs			
Commodity Purchases	26,611,532	26,611,000	532
Opportunity cost of holding iventory	0	0	0
Inflation (10%)	887,051	18,591,071	(17,704,020)
Inventory Losses		3,536,640	(3,536,640)
Insurance/Implied Insurance		1,859,107	(1,859,107)
Total Commodities Costs	27,498,583	50,597,818	(23,099,235)
3PL Costs Transportation		1,179,351	(1,179,351)
Grand Totals	58,920,069	73,461,867	(14,541,798)
Percentage of 2009 Sales	221.4%	276.1%	-54.6%