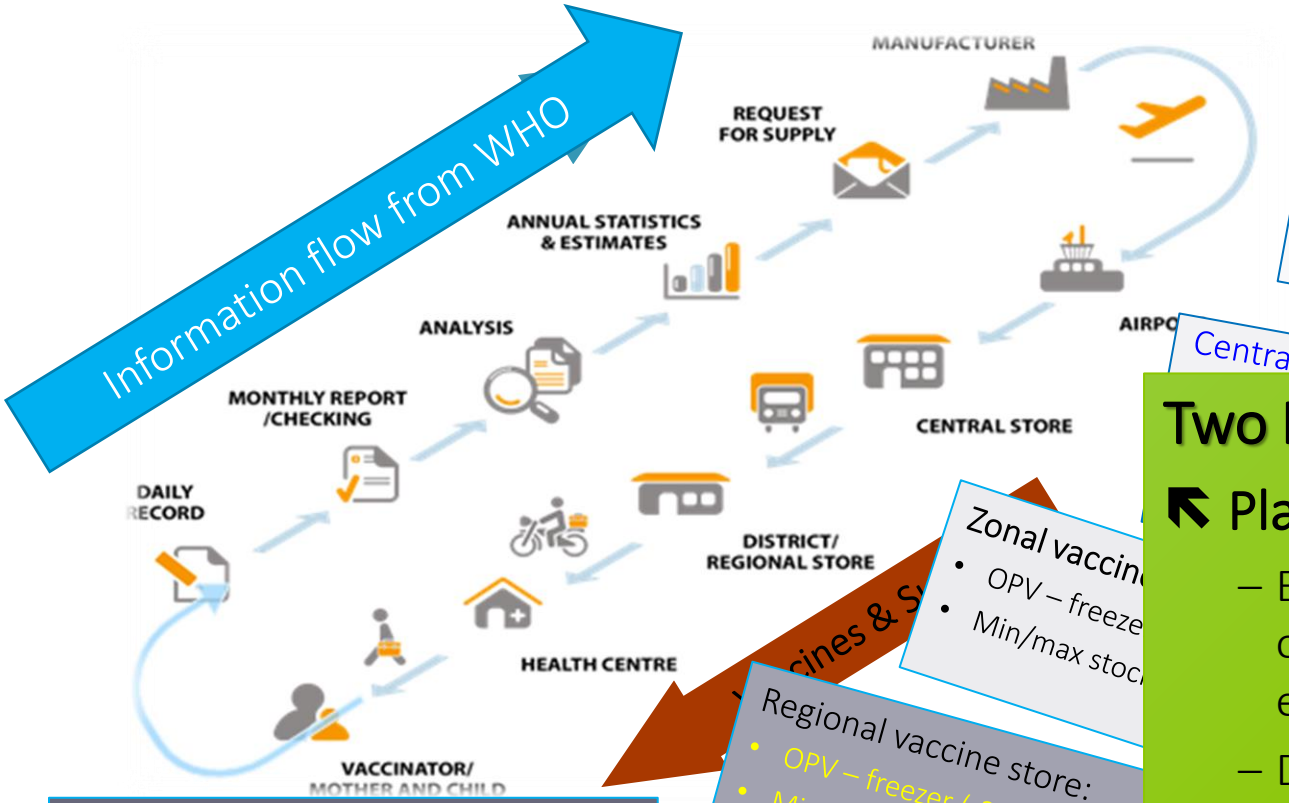
Immunization Supply Chain Challenges in Fragile State

UNICEF – Somalia

12 th May 2015

Presenter: Douglas Mukwaya

The vaccine Supply chain system in Somalia



Shipment & arrival procedures:
- ✓ International packaging & shipping
- ✓ VAR procedures

Central store

Zonal vaccine
- OPV – freeze
- Min/max stock

Regional vaccine store:
- OPV – freezer (-20°C)
- Min/max stock levels: 1-2 mon

Districts and MCH (health facilities):
- Most of the MCHs in CSZ are run by partners
- In NWZ & NEZ MCHs are run by government institutions
- OPV for the campaign only issued

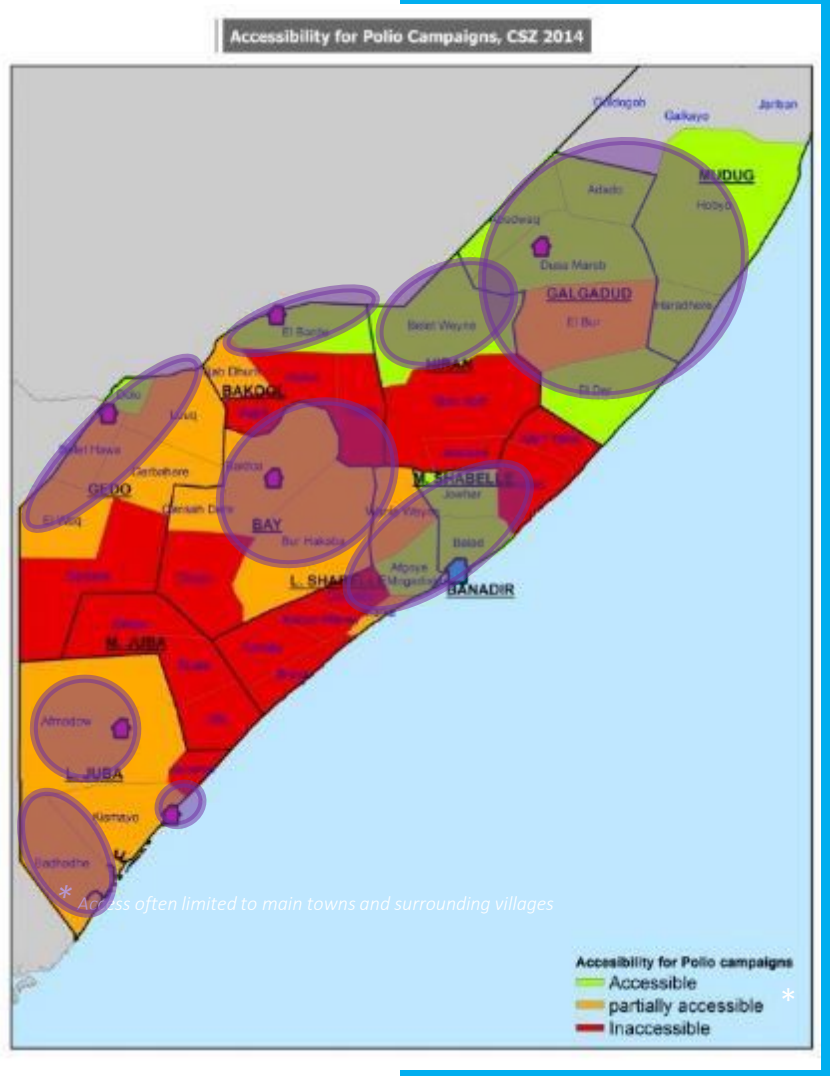
Two Key activities

↖ Planning done by UNICEF:
- Estimating adequate quantities of vaccines & safe injection equipment
- Defining adequate capacities for storage & transport

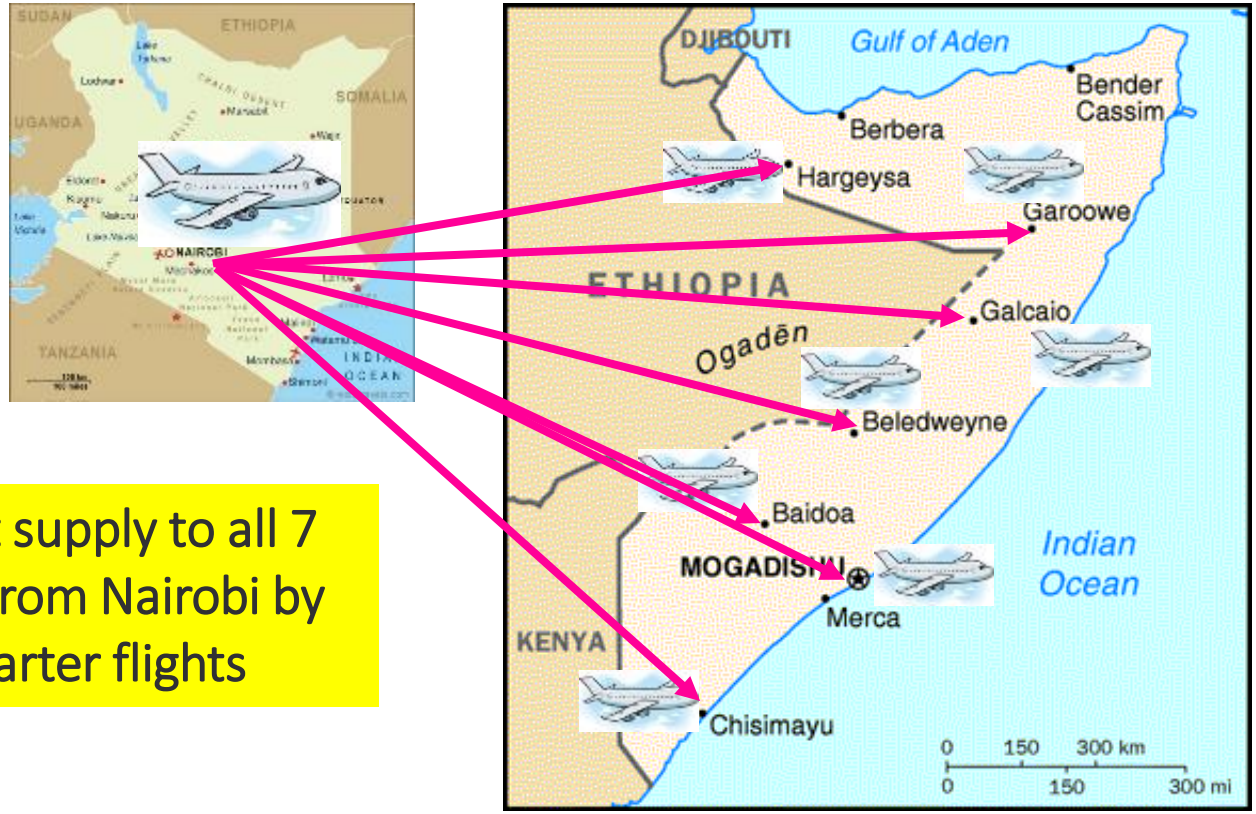
↖ Monitoring done by WHO:
- Collecting consistent data
- Processing relevant indicators
- Taking action

Cold Chain Hubs - SCZ
Regions covered

1. Mogadishu
   - Banadir
   - Lower Shabelle
   - Middle Shabelle
2. Dusamareb
   - Galgaduud
   - Hiraan (8. Beletwein)
   - South-Mudug
3. Elberde
   - Bakool
4. Baidoa
   - Bay
5. Belethawa
   - Gedo
6. Kismayo
   - Eastern part of Lower Juba (i.e. Kismayo Town)
7. Afmadow
   - Western and southern parts of Lower Juba (i.e. Afmadow and Badade districts)

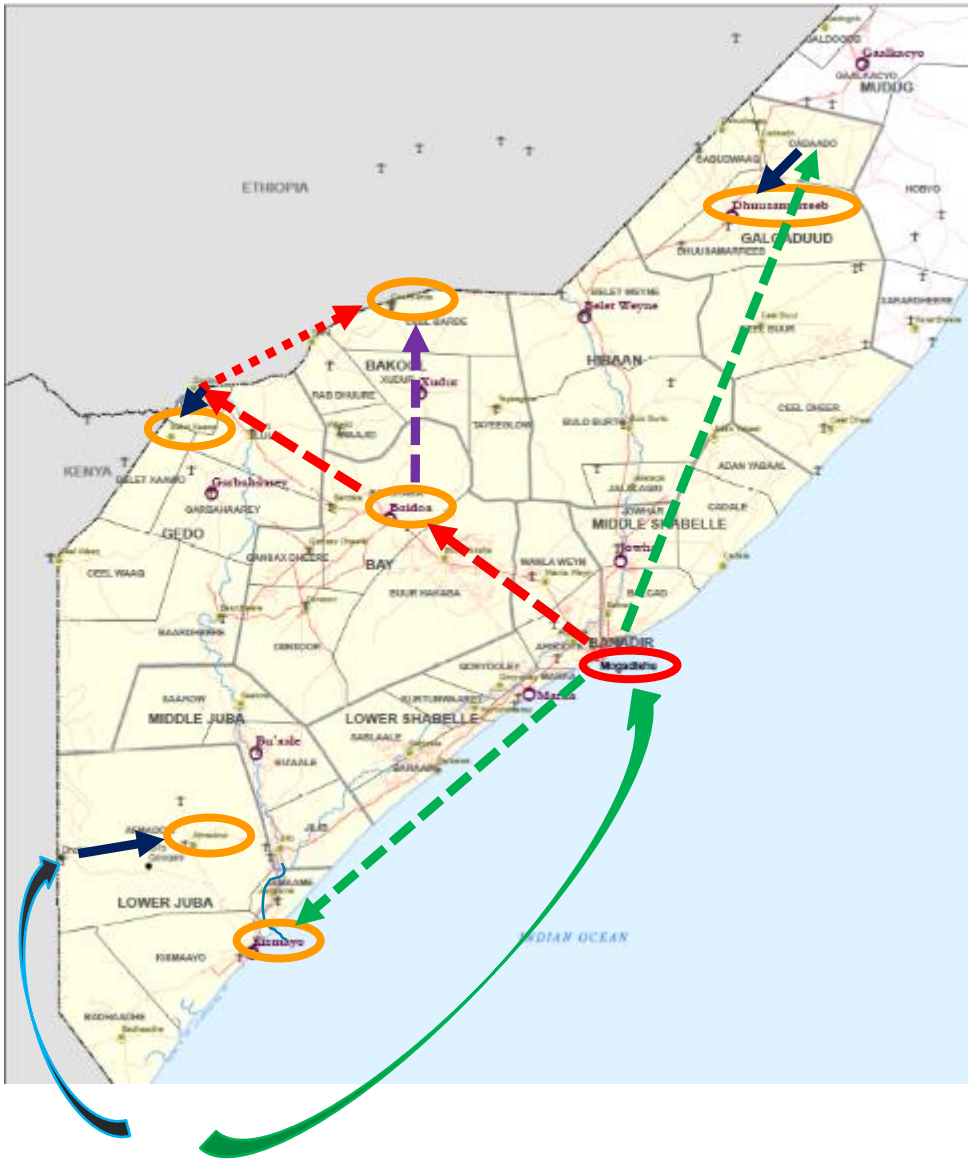


Vaccine Supply Management – Model A



Direct supply to all 7 hubs from Nairobi by charter flights

Vaccine Supply Management – Model B



VACCINE SUPPLY ROUTES

1. Nairobi -> Mogadishu
2. Mogadishu -> cold chain hubs

Except

No regular flights -> Afmadow

Replenishment done using missions or UNHAS charters from available locations (Mogadishu, Nairobi, Baidoa)

BY AIR

IN-BOUND

Commercial (regular)

UNHAS (charter)

INTERNAL

Commercial (regular)

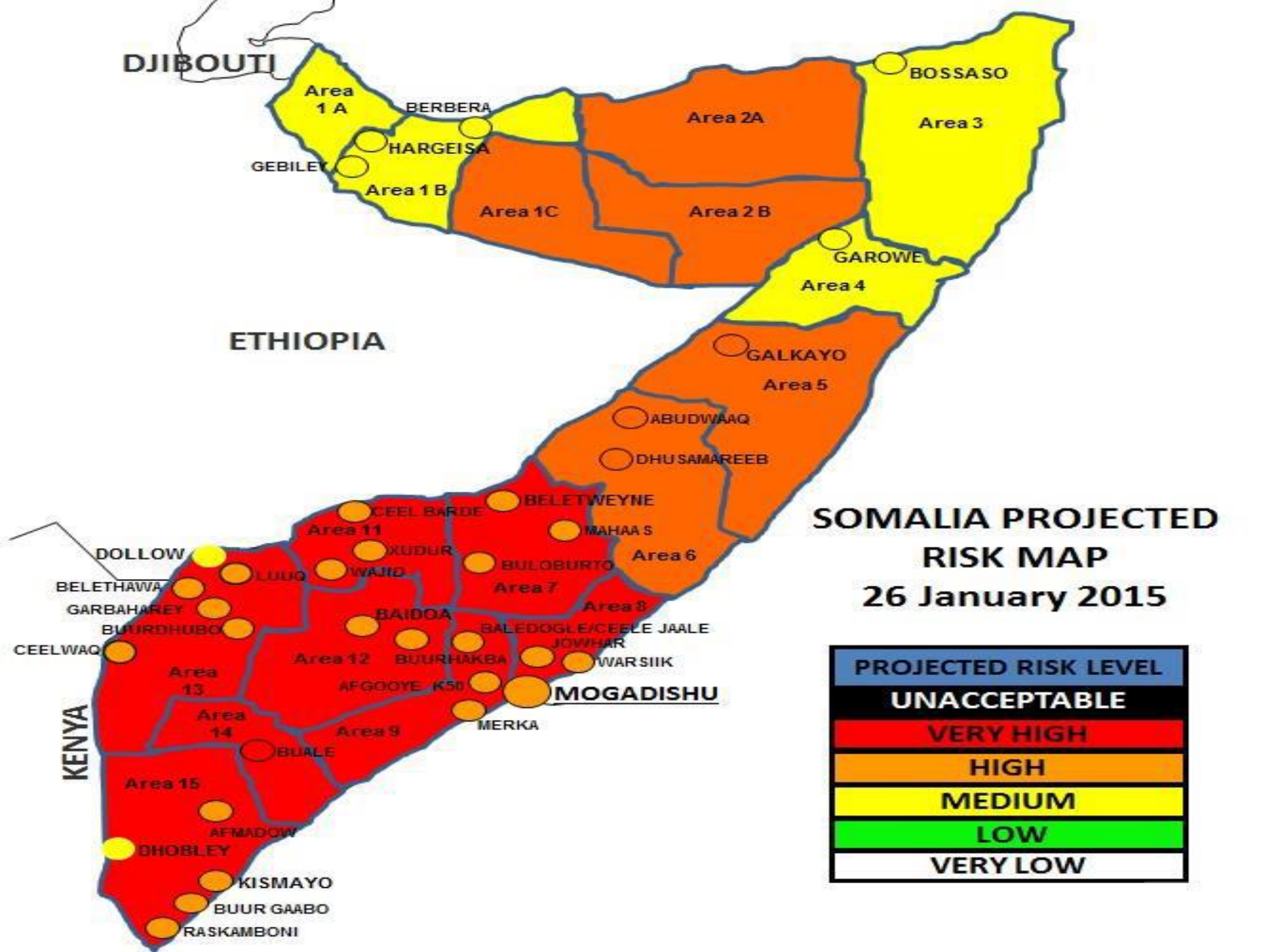
UNHAS (regular)

UN mission

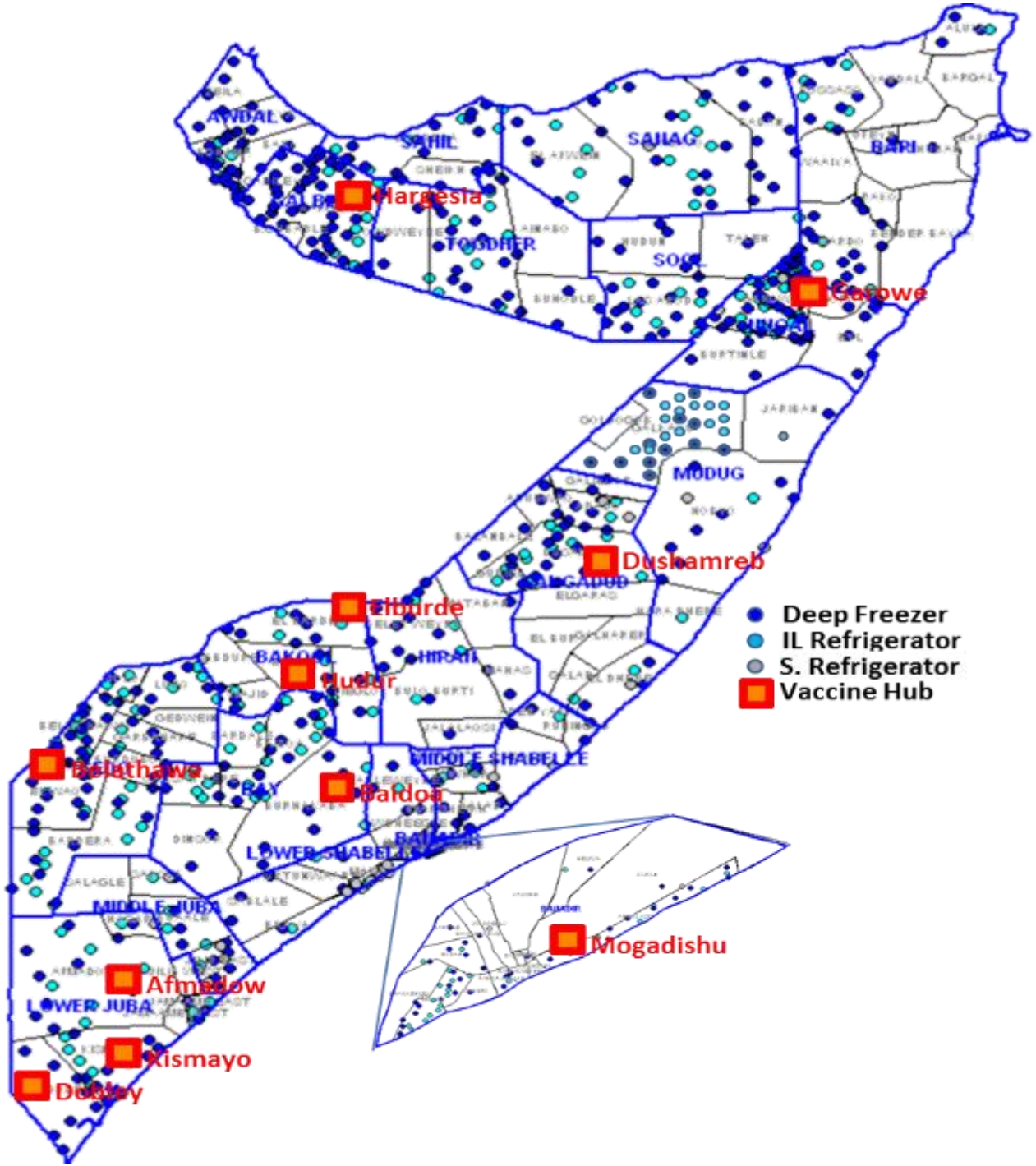
BY ROAD

Vaccine Supply Chain Management Transition

	BEGINNING OF OUTBREAK	IMPROVED VACCINE SUPPLY CHAIN MGMT
Availability & Flexibility	Mogadishu hub • 1 month of stock (SIAs; remaining balance used as rolling stock) Other hubs • 1 month of stock (SIAs; remaining balance used as rolling stock)	Mogadishu hub • 1-2 months of stock (SIAs and PVP) Other hubs • 2-3 months of stock (SIAs and PVP) • Optimized preparedness Additional cold chain capacity added Additional stockpile
Cost efficiency	Commercial round charter flight from NBO • Appr. USD 80,000 	Most cost efficient route available used 1. UN mission (free) 2. Commercial regular (USD 2/kg) 3. UNHAS regular (USD 5/kg) 4. UNHAS charter (cost depends on flight time and volume, <50% of commercial charter) 5. Commercial charter (cost depends on flight time, volume, type of aircraft)
Safety	Physical cold chain assessments not conducted	6/8 cold chain hubs assessed for capacity and quality • Equipment • Human resource • Security • Infrastructure 


DJIBOUTI
Area 1 A
BERBERA
HARGEISA
GEBILEY
Area 1 B
Area 1C
Area 2A
Area 2 B
BOSSASO
Area 3
GAROWE
Area 4
ETHIOPIA
GALKAYO
Area 5
ABUDWAAQ
DHUSAMAREEB
BELETWEYNE
CEEL BARDE
Area 11
MAHAAS
Area 6
DOLLOW
XUDUR
LUUQ
WAJID
BULOBURTO
Area 7
BELETHAWA
GARBAHAREY
BAIDOA
Area 8
BUURDHUBO
BALEDOGLE/CEELE JAALE
JOWHAR
CEELWAQ
Area 12
BUURHAKBA
WARSIIK
Area 13
AFGOOYE
K50
MOGADISHU
KENYA
Area 14
Area 9
MERKA
BUALE
Area 15
AFMADOW
DHOBLEY
KISMAYO
BUUR GAABO
RASKAMBONI
SOMALIA PROJECTED RISK MAP
26 January 2015
PROJECTED RISK LEVEL
UNACCEPTABLE
VERY HIGH
HIGH
MEDIUM
LOW
VERY LOW

Cold Chain Locations and vaccine hubs in Somalia



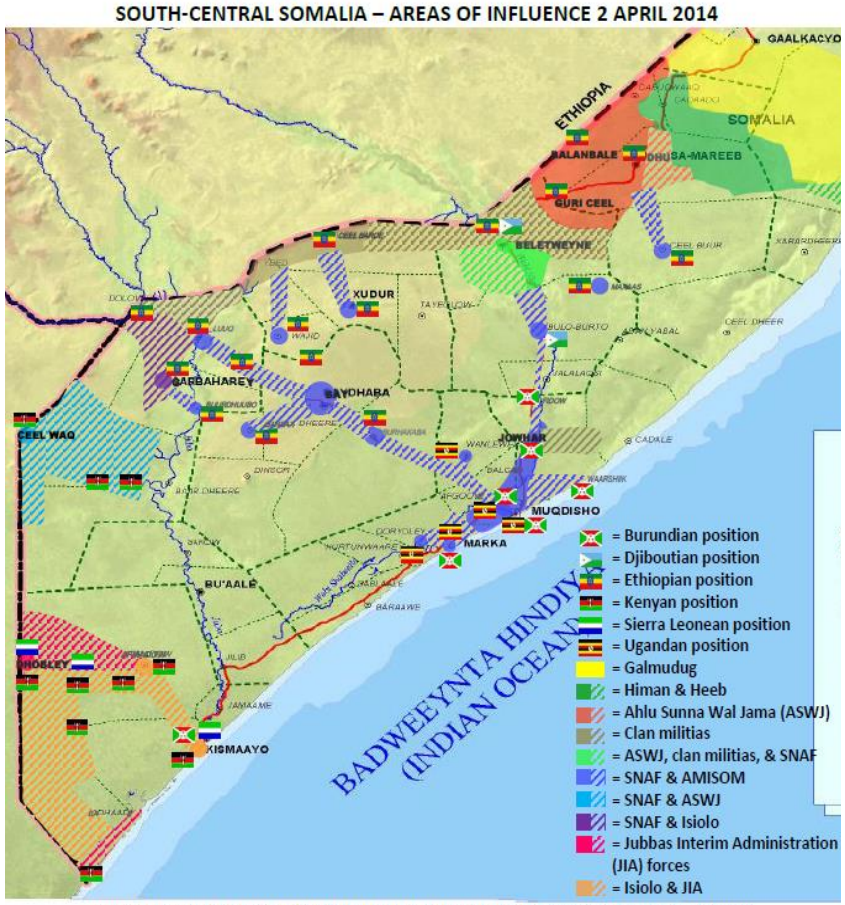
Vaccine supply in South Central Somalia

✓Challenges in delivery

- Limited safe road access
- Limited availability of regular commercial flights
- Changing security scenario requires dynamic planning

✓Changing access scenario

- Ensure vaccine availability for areas opening up



Areas with solid shading are controlled by the anti-al-Shabaab forces listed in the key (above)
Areas with striped shading are jointly influenced by al-Shabaab and the listed anti-al-Shabaab force(s)
Areas without any solid or striped shading are controlled by al-Shabaab
All markings are approximate and exact boundaries may fluctuate

What it takes?

Flight Date	Aircraft Type	Number of Units	Weight in Kgs	Volume CBM	From	To	Charter Cost
28-Sep-14	Cessna Caravan	24	722	3.656	Nairobi	Dusamareb	$ 16,880.00
28-Sep-14	Cessna Caravan	28	310	2.263	Nairobi	Baidoa	$ 12,750.00
28-Sep-14		30	285	2.279	Nairobi	Dollow	
28-Sep-14	Fokker F50	342	3,148.00	18.584	Nairobi	Garowe	$ 35,650.00
02-Oct-14	Beechcraft B-1900D	62	1,240.00	5.193	Nairobi	Mogadishu	$ 17,200.00
29-Oct-14	Dash 8 Q100	114	2,568.00	12.405	Nairobi	Garowe	$ 46,600.00
29-Oct-14		32	855	4.415	Nairobi	Hargeisa	
04-Nov-14	Cessna Caravan	11	235	1.31	Nairobi	Dusamareb	$ 23,870.00
04-Nov-14		2	45	0.28	Nairobi	Dhobley	
04-Nov-14		12	314	1.77	Nairobi	Baidoa	
04-Nov-14	Cessna Caravan	56	1,414.00	7.18	Nairobi	Mogadishu	$ 19,850.00
13-Nov-14	Cessna Caravan	18	546	2.125	Nairobi	Mogadishu	$ 24,840.00
13-Nov-14		1	23	0.118	Nairobi	Dollow	
13-Nov-14		3	74	0.354	Nairobi	Dusamareb	
13-Nov-14		1	28	0.118	Nairobi	Baidoa	

- ✓Staff time – planning, monitoring, on-going follow-up
- ✓Collaboration and engagement with
  - UN agencies (i.e. UNHAS, UNDSS, OCHA, WFP)
  - NGOs, Kenya customs, local transport companies
- ✓Cost impact
  - Commercial charter round flight: appr. USD 80,000
  - Present arrangement leading to cost reduction to: USD 10,000-20,000
- ✓System can be extended to EPI

Ongoing challenge: Reaching effective vaccine management standards

- Implementing the EVMA recommendations at **the** NVS is not as easy as planed due to the fact that this is a contracted facility hence have no direct control over it
- Lack of skilled technical human resource in relevant supply chain offices especially at the lower levels
- Planned actives are often not carried out as planned due to numerous reasons.
- Bureaucracy in accessing funds in order to implement activities is still a challenge

Challenges Faced are; information, resources and security

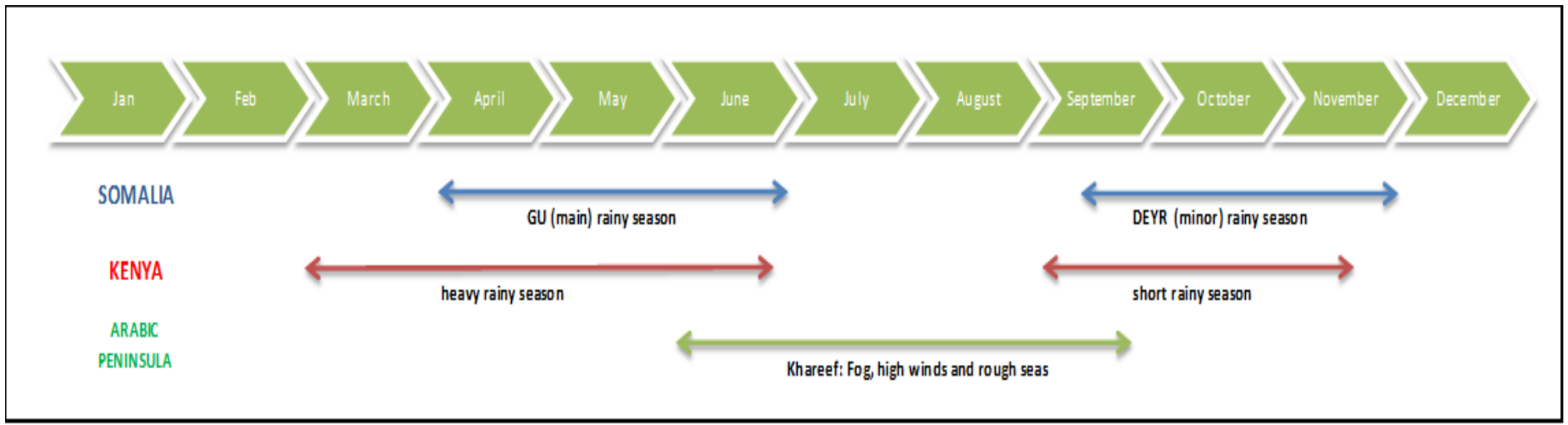
- Integrated CCE information Management:
  - Missing key data
  - Delay in verification
  - Difficulty in sharing information
  - Accessibility (WHO can but not for UNICEF)
- Monitoring: Old tools to monitor stock levels
- Funding gap – delay in procurement
- Lack of enough HR capacity for installation/repairs
- Late feedback/ attention in regards to faulty equipment.
- Security problems in accessing and delivering cold chain equipment especially in SCZ
- Lack of appropriate fuel to run the cold chain which lead to loss of 3HFs last year

SCZ HF which was burnt down due too cold chain related problems

Transport and Distribution Challenges
Access Constraints

Access Constraints: Security, Weather and Access constraints **impair service delivery** by **increasing lead-times** and **uncertainty** in the supply chain while concurrently increasing operating costs – flights, additional warehousing, higher costs to operate. They must be considered for all movements and plans made accordingly. Typical Constraints include:

1. Variable road access due to security constraints
2. Road Restrictions from Somaliland to Puntland
3. Limited Infrastructure with limited international shipping / airlines with direct calls in Somalia.
4. Monsoon/Rainy Season: Transport should be planned to avoid these periods as much as possible.



The 5 key focused area for 2014-2015

Capacity Building:

- Upgrade qualification of national logistics managers
- Provide pre/in-service trainings
- Develop networks for technical backup and support

Logistics Management Information System:

LMIS establishes data/information flow for real time tracking of supplies and achievements to ensure timely action taking and avoid that invested efforts not being wasted

Leads to informed management & decision

CCL gap analysis:

CC Capacity Assessment deals with the physical status of the infrastructure to store and transport the new vaccines under recommended conditions

Leads to CC rehabilitation

EVM follow-up assessment & improvement:

EVM Assessment looks at the quality of vaccine management processes to ensure that new expensive vaccines will be handled and used efficiently

Leads to EVM Improvement

Introduction of temperature monitoring system:

30 days temperature monitoring system

Central Temperature Monitoring system for cold rooms

Leads to quality and equipment performance

Recommendations for Fragile States

Using IT for real time monitoring

1. Having refrigerators installed with remotely controlled temperature monitoring devices
2. Having vaccine boxes with bar codes or chips that can be scanned as vaccine are loaded and offloaded from the refrigerators (especially solar fridges) – for vaccine stock balances

If this can be done, it will reduce staff risk exposure in fragile state.


The End