Expert meeting:
Model and Metrics on Pre-positioning

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Jason Acimovic

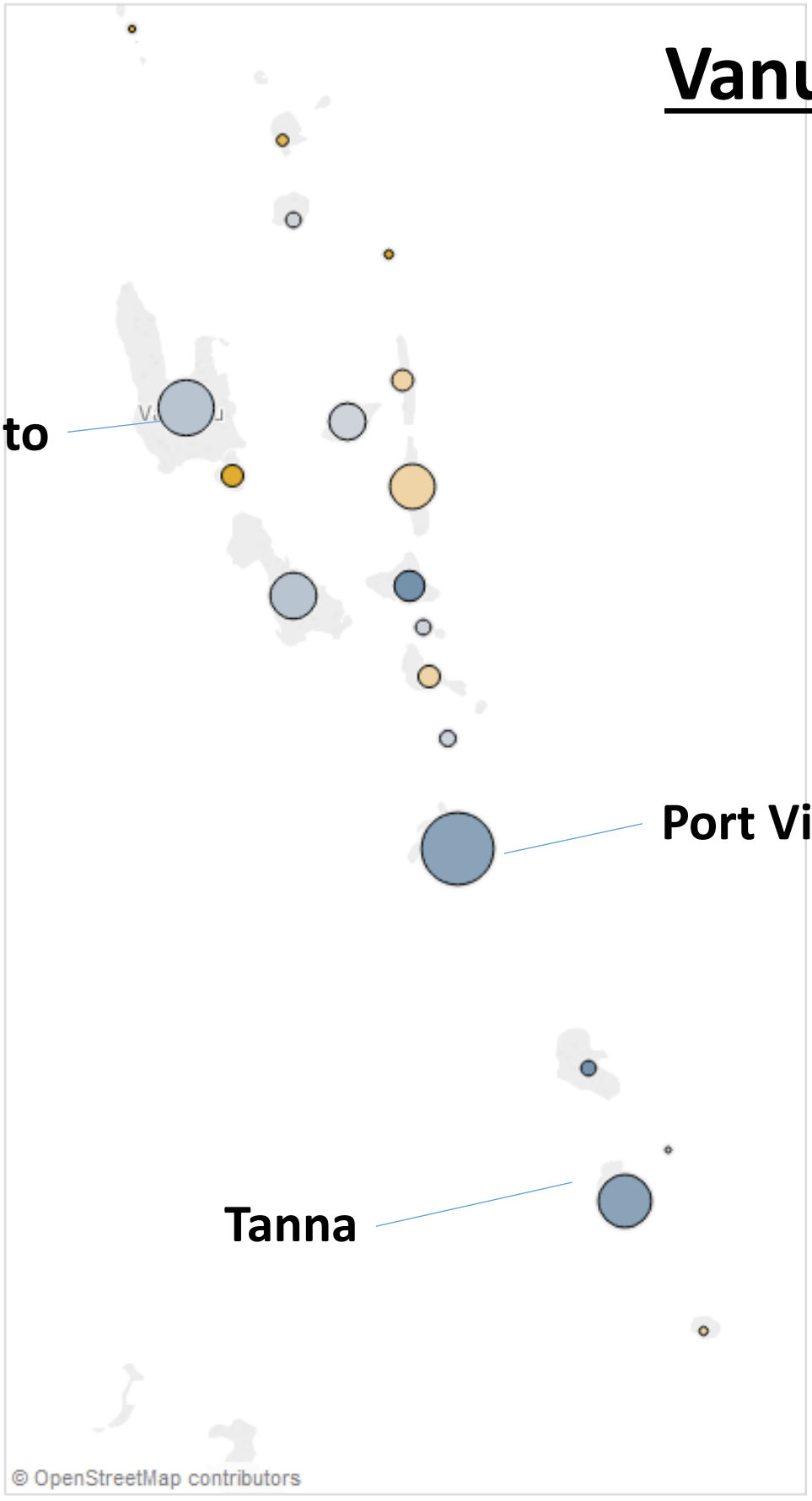
Breakout groups:

- The data on the following pages shows a illustrative (not real) allocation of inventory across warehouses in Vanuatu, and the resulting metrics that would be provided based on past disaster data and this current inventory allocation.
- Get with your neighbors and answer the following questions about Vanuatu pre-positioning.
- For some questions, there are no right or wrong answers, and this is intended to be open ended for discussion.
- You are also given one of four scenarios of an actual storm that affected Vanuatu.

Questions:

- Given the "summary metrics," what actions would you take?
- In the "summary metrics," what item would you address first:
  - In terms of rebalancing?
  - In terms of acquiring more units?
- In "summary metrics," why do you think JerryCans cover only 35% of demand by 77% of all disasters?
- The biggest disaster in history affected 188,000 people. How do you take this into account when deciding how much to stock in Vanuatu?
- In "Optimal Allocation," we see that the actual blanket distribution is split between Santo and Port Vila, whereas shelter kits are all in Port Vila. Yet, the balance metric shows that blankets are more out of balance than shelter kits. Why?
- In "Optimal Allocation," would you move items to the optimal warehouses?
  - If yes, why and what barriers might you face?
  - If not, why not?
- For the disaster scenario you were handed, assume that Blankets are distributed in the "optimal" locations.
  - What warehouses will you use to serve the affected population.
  - Given your allocation of on-hand inventory to the affected population, would you make any changes to the allocation of demand across the warehouses in the future?
- In terms of pre-positioning, what are some key pieces of information that are left out of these metrics that would be helpful?

Where disasters happen (The bigger the circle, the more people affected)



Vanuatu summary metrics of 8 key items

Vanuatu data - summary metrics – Optimizing time-to-respond

Item	Units	BalanceMetric	Fraction Of Demand Served	Percent of Disasters Covered
Blanket	7,496	1.49	0.82	91%
JerryCan	8,044	1.02	0.35	77%
KitchenSet	2,119	1.12	0.23	64%
MosquitoNet	3,777	1.18	0.22	64%
ShelterKit	1,409	1.23	0.18	59%
SleepingMats	1,145	1.17	0.04	27%
Tarpaulin4x6	8,056	1.31	0.35	77%
Tent	18	1.11	0.00	0%

(While total units are accurate, the actual locations of the units across Vanuatu are illustrative only.)

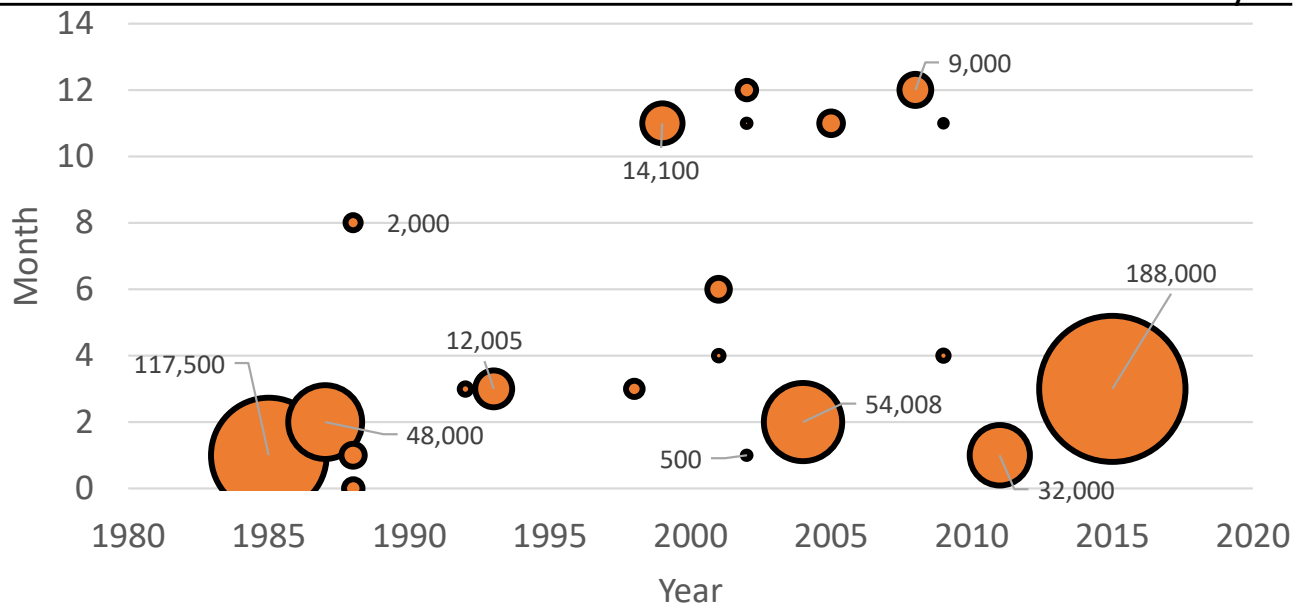
Definitions:

Balance metric: Ratio of average time-to-serve for actual inventory allocation versus optimal allocation

Fraction of demand served: Of all the demand (weighted across scenarios), what fraction of that weighted demand can be satisfied by the inventory in the system?

Percent of disasters covered: Of all the disasters scenarios, which can be satisfied completely by the inventory on hand?

Bubble chart of disaster size over time: historical scenarios used for analysis



Vanuatu optimal allocation of 8 key items

Item	Location	Actual inventory	Optimal inventory
Blanket	Port Vila, Vanuatu	6,630	3,270
Blanket	Santo, Vanuatu	860	2,710
Blanket	Tanna, Vanuatu	6	1,516
JerryCan	Port Vila, Vanuatu	4,560	4,219
JerryCan	Santo, Vanuatu	2,488	2,198
JerryCan	Tanna, Vanuatu	996	1,627
KitchenSet	Port Vila, Vanuatu	861	860
KitchenSet	Santo, Vanuatu	1,258	861
KitchenSet	Tanna, Vanuatu	0	398
MosquitoNet	Port Vila, Vanuatu	3,374	1,437
MosquitoNet	Santo, Vanuatu	0	1,630
MosquitoNet	Tanna, Vanuatu	403	709
ShelterKit	Port Vila, Vanuatu	1,409	536
ShelterKit	Santo, Vanuatu	0	608
ShelterKit	Tanna, Vanuatu	0	265
SleepingMats	Port Vila, Vanuatu	1,145	490
SleepingMats	Santo, Vanuatu	0	498
SleepingMats	Tanna, Vanuatu	0	157
Tarpaulin4x6	Port Vila, Vanuatu	7,976	4,225
Tarpaulin4x6	Santo, Vanuatu	0	2,202
Tarpaulin4x6	Tanna, Vanuatu	80	1,629
Tent	Port Vila, Vanuatu	18	10
Tent	Santo, Vanuatu	0	8
Tent	Tanna, Vanuatu	0	0

(While total units are accurate, the actual locations of the units across Vanuatu are illustrative only. However, the optimal locations and inventory levels will be accurate.)