**Part 8 of the Report- Shelter**

The first input will always be:

* The Area Councils that have been affected by the Cyclone
* The Category of Cyclone for each Area Council
* The tables outlined below show every administrative boundary: National (Vanuatu), Province (Torba, Sanma, Penama, Malampa, Shefa, Tafea), and the Area Councils underneath their Province. However, the report should show the National, and only the Provinces and Area Councils affected by Cyclone.

Analysis:

* The analysis is four steps:

1. Baseline
2. Estimate Damage from Cyclone
3. Resources Needed to be Sent to Those Affected
4. Estimate Financial Damage from Cyclone

* The analysis will be carried out at the Area Council level as the primary unit.

1. Provincial figures will be generated by summing the results of all Area Councils within each province.
2. National figures (Vanuatu) will then be produced by summing the results across all provinces.
3. **BASELINE**

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| **Region** | **Number of Households** | | **Main Roof Materials** | | | **Main Wall Materials** | | |
|  | **Private Household** | **Institutions** | **Concrete** | **Metal** | **Wood** | **Concrete** | **Metal** | **Wood** |
| **Vanuatu** |  |  |  |  |  |  |  |  |
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| **Region** | **Rooms per Household** | | | **Number of Household Appliances in Working Condition** | | | |
|  | **0-3** | **4-6** | **7+** | **TV** | **Freezer** | **Radio** | **Refrigerator** |
| Vanuatu |  |  |  |  |  |  |  |

1. **ESTIMATING DAMAGE: Number of Damaged Households**

* Inputs:

1. Number of households (HHs) by Area Council (AC).
2. Main roof materials: concrete, metal, wood.
3. Main wall materials: concrete, metal, wood.
4. Cyclone category (with corresponding damage multiplier, e.g., Cat 5 = 0.8, Cat 4 = 0.7).

* Formulas:

1. Damaged households (private or institutional) = (Number of households × Damage multiplier).
2. Damaged households (by roof type) = (Number of HHs with given roof type × Damage multiplier).
3. Damaged households (by wall type) = (Number of HHs with given wall type × Damage multiplier).

* Example:

1. Cyclone Category 5 in Big Bay Coast (multiplier = 0.8).
2. Cyclone Category 4 in West Malo (multiplier = 0.7).

* Big Bay Coast (10 private HHs, 2 institutions, 5 HHs iron roof, 4 HHs timber roof, 0 concrete roof; 10 HHs iron walls, 4 HHs concrete walls, 2 HHs timber walls):

1. Households:
2. Private = 10 x 0.8 = 8
3. Institutions = 2 x 0.8 = 1.6
4. Roofs:
5. Metal = 5 × 0.8 = 4.0
6. Wood = 4 × 0.8 = 3.2
7. Concrete = 0 × 0.8 = 0
8. Walls:
9. Metal = 10 × 0.8 = 8.0
10. Concrete = 4 × 0.8 = 3.2
11. Wood = 2 × 0.8 = 1.6

* West Malo (40 private HHs, 5 institutions, 2 HHs metal roof, 3 HHs concrete roof, 30 HHs timber roof; 3 HHs metal walls, 4 HHs concrete walls, 10 HHs timber walls):

1. Households:
2. Private = 40 x 0.7 = 28
3. Institutions = 5 x 0.7 = 3.5
4. Roofs:
5. Metal = 2 × 0.7 = 1.4
6. Concrete = 3 × 0.7 = 2.1
7. Wood = 30 × 0.7 = 21.0
8. Walls:
9. Metal = 3 × 0.7 = 2.1
10. Concrete = 4 × 0.7 = 2.8
11. Wood = 10 × 0.7 = 7.0

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| **Region** | **Number of Households** | | **Main Roof Materials** | | | **Main Wall Materials** | | |
|  | **Private Household** | **Institutions** | **Concrete** | **Metal** | **Wood** | **Concrete** | **Metal** | **Wood** |
| **Vanuatu** |  |  |  |  |  |  |  |  |
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1. **RESOURCES NEEDED TO BE SENT TO THOSE AFFECTED**

* Formulas:

1. Tents = (# of households × Cyclone multiplier × 1 tent per household)
2. Kitchen sets = (# of households × Cyclone multiplier × 1 set per household)
3. Jerrycans = (# of households × Cyclone multiplier × 1 jerrycan per household)
4. Hygiene kits = (# of households × Cyclone multiplier × 1 kit per household)
5. Mats = (# of population × Cyclone multiplier × 1 mat per person)
6. Blankets = (# of population × Cyclone multiplier × 1 blanket per person)
7. Mosquito nets = (# of population × Cyclone multiplier × 1 net per person)
8. Solar lanterns = (# of households × Cyclone multiplier × 1 lantern per household)

* Example Scenario:

1. Cyclone Category 5 (multiplier = 0.8) hits Torres.
2. Cyclone Category 4 (multiplier = 0.7) hits Ureparapara.

* Torres (20 households, 100 people):

1. Tents = 20 × 0.8 = 16 tents
2. Kitchen sets = 20 × 0.8 = 16 sets
3. Jerrycans = 20 × 0.8 = 16 jerrycans
4. Hygiene kits = 20 × 0.8 = 16 kits
5. Mats = 100 × 0.8 = 80 mats
6. Blankets = 100 × 0.8 = 80 blankets
7. Mosquito nets = 100 × 0.8 = 80 nets
8. Solar lanterns = 20 × 0.8 = 16 lanterns

* Ureparapara (15 households, 70 people):

1. Tents = 15 × 0.7 = 10.5 ≈ 11 tents
2. Kitchen sets = 15 × 0.7 = 10.5 sets
3. Jerrycans = 15 × 0.7 = 10.5 jerrycans
4. Hygiene kits = 15 × 0.7 = 10.5 kits
5. Mats = 70 × 0.7 = 49 mats
6. Blankets = 70 × 0.7 = 49 blankets
7. Mosquito nets = 70 × 0.7 = 49 nets
8. Solar lanterns = 15 × 0.7 = 10.5 ≈ 11 lanterns

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| **Region** | **Type of resources for response** | | | | | | | |
|  | **Tents/Tarpulin** | **Mosquito Nets** | **Solar light/lantern** | **Kitchen set** | **Jerrycan 10L** | **Hygiene Kit** | **Sleeping mats** | **Blankets** |
| Vanuatu |  |  |  |  |  |  |  |  |

1. **Financial recovery**

* Formula:

1. Financial Damage per roof type = (Number of households with given roof type × Unit cost × Cyclone multiplier)
2. Financial Damage per wall type = (Number of households with given wall type × Unit cost × Cyclone multiplier)
3. Financial Damage per household appliance = (Number of households owning the appliance × Unit cost × Cyclone multiplier)

* Inputs Needed:

1. Number of households (by roof material: concrete, metal, wood; by wall material: concrete, metal, wood).
2. Number of households with household appliances (freezer, refrigerator, TV).
3. Unit cost (replacement value) for each item:

* Example values (to be refined with sector data):

1. Roof: Concrete = 300,000 VT; Metal = 200,000 VT; Wood = 150,000 VT
2. Walls: Concrete = 250,000 VT; Metal = 180,000 VT; Wood = 120,000 VT
3. Appliances: Freezer = 100,000 VT; Refrigerator = 80,000 VT; TV = 50,000 VT
4. Cyclone category multiplier (e.g., Cat 5 = 0.8, Cat 4 = 0.7).

* Example Scenario:

1. Cyclone Category 5 in Torres (multiplier = 0.8).
2. Cyclone Category 4 in Ureparapara (multiplier = 0.7).

* Torres (10 HHs with metal roofs, 5 HHs with wood walls; 3 HHs with refrigerators, 2 HHs with TVs):

1. Roofs:
2. Metal = 10 × 200,000 × 0.8 = 1,600,000 VT
3. Walls:
4. Wood = 5 × 120,000 × 0.8 = 480,000 VT
5. Appliances:
6. Refrigerator = 3 × 80,000 × 0.8 = 192,000 VT
7. TV = 2 × 50,000 × 0.8 = 80,000 VT

* Ureparapara (8 HHs with wood roofs, 6 HHs with concrete walls; 2 HHs with freezers, 4 HHs with TVs):

1. Roofs:
2. Wood = 8 × 150,000 × 0.7 = 840,000 VT
3. Walls:
4. Concrete = 6 × 250,000 × 0.7 = 1,050,000 VT
5. Appliances:
6. Freezer = 2 × 100,000 × 0.7 = 140,000 VT
7. TV = 4 × 50,000 × 0.7 = 140,000 VT

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| **Region** | **Main Roof Materials** | | | **Main Wall Materials** | | | **Household Appliances** | | |
|  | **Concrete** | **Metal** | **Wood** | **Concrete** | **Metal** | **Wood** | **Freezer** | **Refrigerator** | **TV** |
| **Vanuatu** |  |  |  |  |  |  |  |  |  |
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