2023 Syria Earthquake – Preliminary Debris Quantification and Optioneering for selected sites in Latakia Governorate   April 2023   Page 1/1

UN environment programme

This initial quantification of earthquake generated debris selected towns and villages in Latakia Governorate is derived from building footprint data provided by Microsoft, damage assessments from UNOSAT. This data was combined with an above surface height model, derived from the difference between a Digital Terrain Model (SRTM) and a Digital Surface Model (ALOS World 3D). For visualization and modeling purposes, results were aggregated into an rectangular grid.

Two scenarios have been developed:
Scenario 1: 100% of debris is disposed of at disposal facilities.
Scenario 2: 50% of debris is recycled at a centralized recycling facility and remaining 50% is disposed of.
For modelling purposes, disposal and recycling facilities are assumed to be at a 10km distance from source of debris. Cost assumptions are based on local debris management costs provided by UNDP, and results will need to be refined based on local parameters.
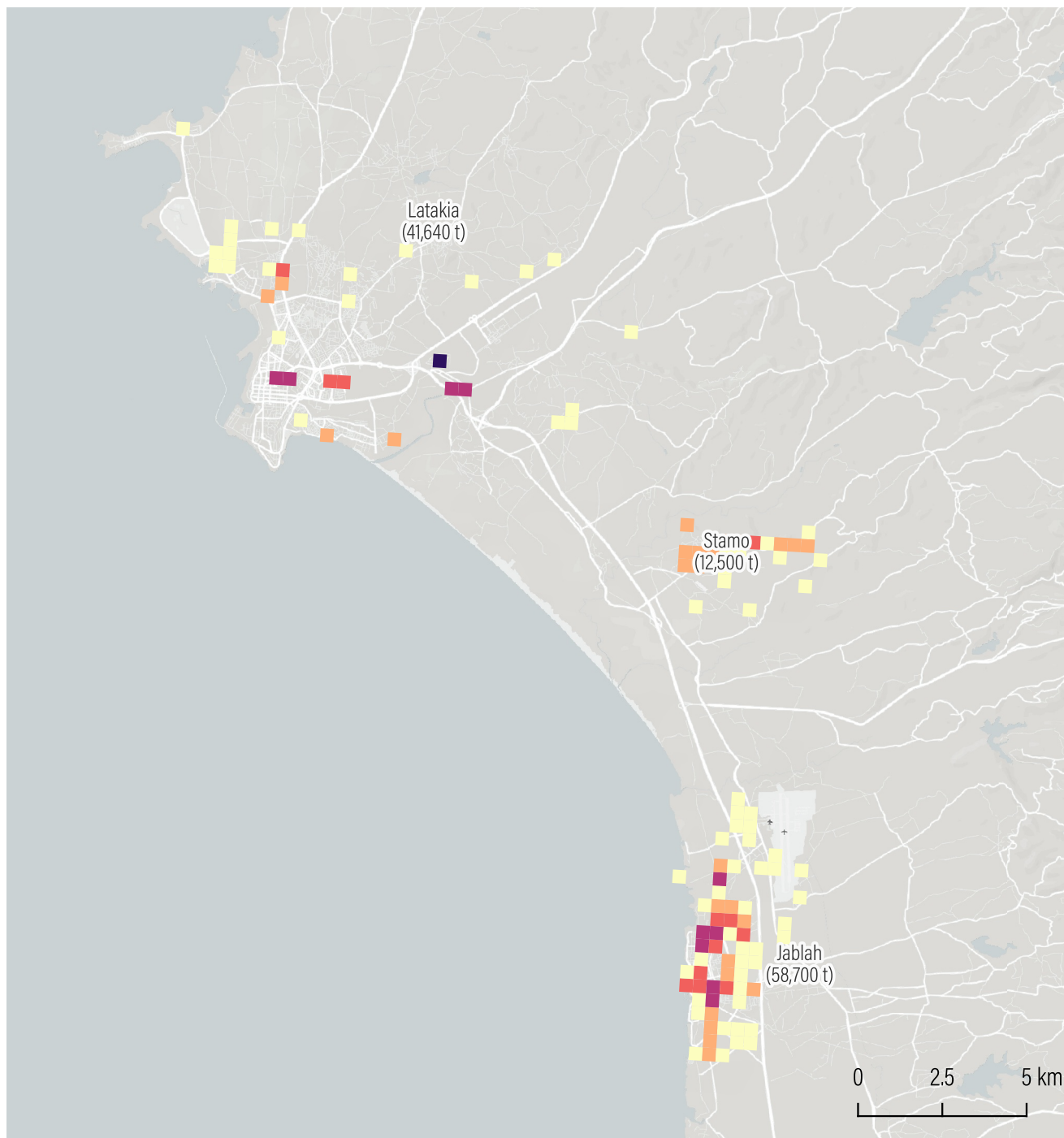
Estimated debris quantities (tonnes)

- □ < 1,000
- □ 1,000 - 2,000
- □ 2,000 - 4,000
- □ 4,000 - 10,000
- □ 10,000 - 30,000
- □ 30,000 - 100,000
- □ > 100,000

Total debris quantity **115,200 t**
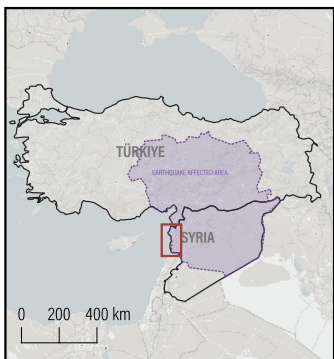
Datum: WGS 1984
Coordinate System: Universal Transverse Mercator 37N

Latakia (41,640 t)

Stamo (12,500 t)

Jablah (58,700 t)

0   2.5   5 km

Debris management - Preliminary outputs

Total debris quantity **115,200 t**

	Scenario 1	Scenario 2
Time to clear (months)	1	1
Time to recycle (months)	0	2
Total time to clear and recycle (months)	1	2
Total cost (US$)	108,000	223,000
Revenue from recycling (US$)	0	120,960
Cost less revenue (US$)	**108,000**	**102,040**
Total distance covered (km)	52,300	52,300
CO2e from trucking (tCO2)	98.6	98.6
Cost of haulage (US$)	108,000	108,000
Material recovered for reconstruction *	0	40,300
Cost of processing of debris (US$)	0	115,200
Value of recovered material in market (US$)	0	120,960
Total cost saving of natural raw materials substituted (US$)	0	201,600
Material disposed (tonnes)	115,200	74,880
Total space required for disposal (ha)	2	1

* 70% recycling rate (t) of debris brought for recycling

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.