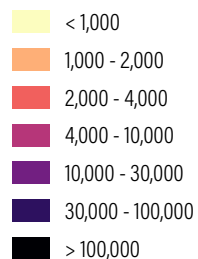


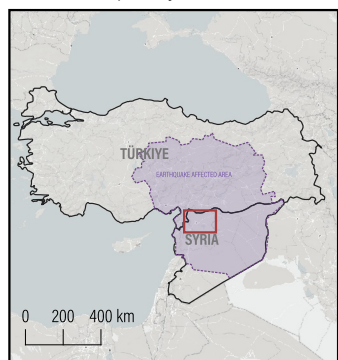
This initial quantification of earthquake generated debris in selected towns and villages in Northwest Syria is derived from building footprint data provided by UNOPS/ UNDP along with satellite imagery. This data was combined with an above surface height model, derived from the difference between a Digital Terrain Model (SRTM) and a Digital Surface Model (ALOS World 3D). For visualization and modeling purposes, results were aggregated into an hexagonal 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.

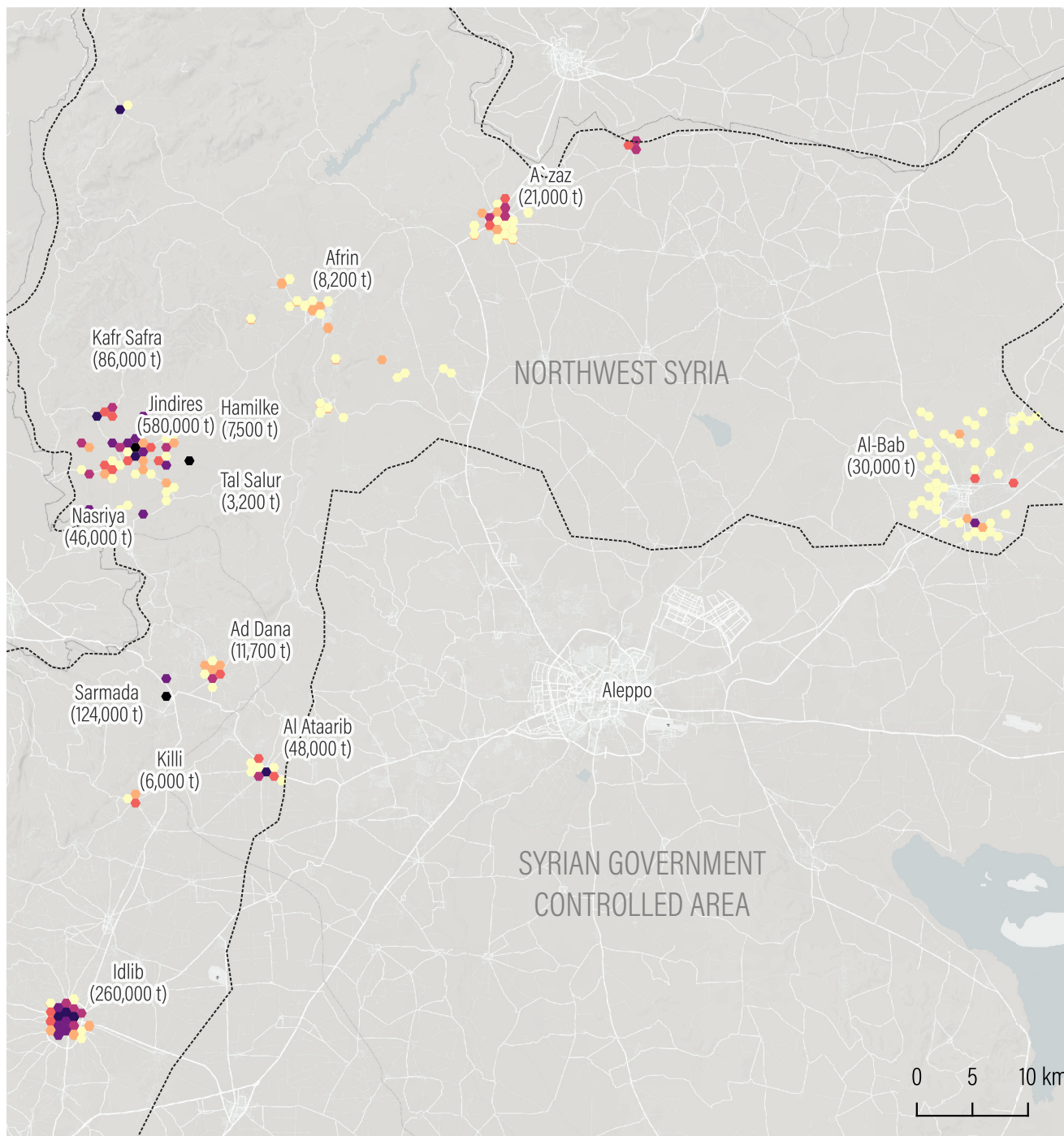
Estimated debris quantities (tonnes)



Total debris quantity **1,480,540 t**



Datum: WGS 1984
 Coordinate System: Universal Transverse Mercator 37N



Debris management - Preliminary outputs

Total debris quantity	1,480,540 t	
	Scenario 1	Scenario 2
Time to clear (months)	5	5
Time to recycle (months)	0	21
Total time to clear and recycle (months)	5	21
Total cost (US\$)	2,207,800	2,815,500
Revenue from recycling (US\$)	0	1,554,000
Cost less revenue (US\$)	2,207,800	1,260,500
Total distance covered (km)	673,000	673,000
CO2e from trucking (tCO2)	1,268	1,268
Cost of haulage (US\$)	2,207,800	2,207,800
Material recovered for reconstruction *	0	520,000
Cost of processing of debris (US\$)	0	607,600
Value of recovered material in market (US\$)	0	1,554,500
Total cost saving of natural raw materials substituted (US\$)	0	2,600,000
Material disposed (tonnes)	1,480,500	962,500
Total space required for disposal (ha)	18.5	12

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