We consider wave maps on \((1 + d)\)-dimensional Minkowski space. For each dimension \(d \geq 8\) we construct a negatively curved, \(d\)-dimensional target manifold that allows for the existence of a wave map which starts off smooth and blows up in finite time. Furthermore, such wave map is explicit and self-similar inside the backward lightcone of the blowup point and provides a stable blowup mechanism for the corresponding Cauchy problem. (Received July 25, 2017)