Abstract. We prove a Kawamata-Viehweg vanishing theorem on a normal compact Kähler space X: if L is a nef line bundle with $L^2 \neq 0$, then $H^q(X, K_X + L) = 0$ for $q \geq \dim X - 1$. As an application we complete a part of the abundance theorem for minimal Kähler threefolds: if X is a minimal Kähler threefold, then the Kodaira dimension $\kappa(X)$ is nonnegative.