

ABSTRACT. A higher dimensional analogue of Kodaira's canonical bundle formula is obtained. As applications, we prove that the log-canonical ring of a klt pair with $\kappa \leq 3$ is finitely generated, and that there exists an effectively computable natural number M such that $|MK_X|$ induces the Iitaka fibering for every algebraic threefold X with Kodaira dimension $\kappa = 1$.