Committed action to deal with climate change requires reducing greenhouse gas emissions, i.e., mitigation, as well as dealing with its ensuing consequences, i.e., adaptation. To date, most policies and projects have promoted mitigation and adaptation separately, and they have very rarely considered integrating these two objectives. In this article, we develop a multi-dimensional framework to explore the extent to which climate mitigation forestry projects bring adaptation concerns into their design and implementation phases, using three Belizian projects as case-study material. We demonstrate that linking mitigation and adaptation has not been possible, because the mandate of forest carbon markets does not incorporate adaptation concerns. The projects’ contribution to forest ecosystems’ adaptation, for instance, by reducing human encroachments and by increasing ecosystem connectivity, has been limited. The projects’ contribution to improve local livelihoods has also been limited, and projects have even been contested by neighboring communities on the grounds of tenure conflicts and food security concerns. Furthermore, the projects’ mitigation potential is constrained by their poor additionality and lack of rigorous enforcement. We then conclude that the integration of mitigation and adaptation in Belize’s carbon forestry projects remains a laudable but elusive goal. Consequently, we request climate change donors to refrain from providing support to narrowly designed projects and we urge them instead to promote more holistic and territorial-based approaches targeting both mitigation and adaptation goals.