The minority Tonga Community of the Great Zambezi River Basin (Basilwizi) in Binga District of north-western Zimbabwe suffer a double tragedy which threatens their livelihoods. First they were forcibly removed from the resource-rich flood plain of the Zambezi River to the dry, marginal escarpments of the same river to facilitate the construction of the Kariba Dam in the late 1950s. The same community is now suffering from the vicissitudes of climate change and variability which have rendered their environment even drier and less productive. In spite of this, and with little outside assistance, this subsistence, semi-pastoral community seems determined to prevail. This study assesses the relationship between climate change and environmental change in the context of Tonga minority rural community development. Interviews and questionnaires were used to collect qualitative data from Tonga elders and other key informants in the district. Direct observations were used to identify in-situ environmental changes and coping strategies used to ameliorate the effects of climate change and variability. Results show that although the Tonga community is getting some assistance from NGOs and Central Government, the assistance is not sustainable partly because it doesn’t incorporate Tonga traditional knowledge systems which have been the bedrock of Tonga Community resilience for generations. This study posits that for meaningful climate-compatible development to take place in Binga, a community derived development ‘basket of priorities’ identified be used as a basis for sustainable community development. An IDIL-PECF model is thus suggested to help the Tonga community cope with climate change impacts more sustainably.