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Abstract

Climate change and variability is a major threat facing humanity in the 21st century. It is threatening community livelihoods, food security, economic sectors, ecosystem sustainability and social groups. The phenomenon has been exacerbated by human induced activities that increase atmospheric greenhouse gases which disrupt the natural composition and balance of atmospheric gases. Developing countries, arid and semi arid lands and the poor in society are the most vulnerable and hardest hit due to their low adaptive capacities. Over 80% of Kenya's landmass is classified as Arid and Semi Arid Lands (ASALs) and characterized by prolonged and frequent droughts, erratic rainfall, high environmental degradation and resource generated conflicts. This study highlights some of the emerging climate change adaptation strategies spearheaded in the arid and semi arid lands of coastal Kenya. The work was done at Bamba division, Ganze district which is described as livestock millet zone. Two water pans were designed and excavated through the funding of Kenya Arid and Semi Arid Lands and Arid Lands Resource Management Projects. Similarly, drip irrigation systems under greenhouse and open field installed, water conservation structures namely Zai pits and furrows were established to boost crop and livestock productions. Vegetable crops were planted under drip irrigation system (tomatoes, amaranthus, okra and spinach) while major food crops and livestock fodders were planted using the water harvesting and conservation structures. The study found that there are enormous potentials that could be exploited in ASALs to adapt local communities from the effects of climatic changes and provide opportunities to increase their resilience to climatic changes. Water pans became sources of community socio-economic and livelihoods activities. Crops planted performed well off season despite the prevailing harsh climatic conditions in the area while production of pasture grasses and fodders planted under water conservation structures was enhanced.

Keywords: Climate change, Adaptation, Arid areas