Technology Fact Sheet for Adaptation

DRIP IRRIGATION [i]

1. TECHNOLOGY: DRIP IRRIGATION	
Introduction	Irrigation is an agricultural operation, supplying the need of a plant for water. Irrigation is necessary in a dry climate where natural rainfall does not meet plant water requirements during all or part of the year. In Kenya, land and water resources are becoming scarcer and arable land has decreased tremendously due to population increase, unreliable rainfall caused by periodic droughts and lack of appropriate technologies to cope with the situation. Persistent droughts due to climate change have led to persistent threat of household food security and exacerbated poverty in the country. The importance of irrigation and efficient use water due to water scarcity is being addressed through development of more efficient irrigation systems and methods such drip irrigation.
Technology Characteristics	A wide range of components and system design of drip irrigation are available. Drip irrigation zones can be identified based on factors such as topography, field length, soil texture. Drip irrigation provides: • Maximum efficiency in water use • Reliable heavy duty lines and high quality drippers with wide water passage • Easily filled and drained • Enables fertilization through the system • Simple in installation and maintenance • Gravity fed or low-head drip irrigation technologies
Country Specific Applicability and Potential	The agricultural sector in Kenya has continued to be the prime mover of the economy and provides about 55% of Gross Domestic Product (GDP) and about 80% of employment. About 20% of the total area in Kenya may be considered to be of medium –high potential rain-fed agricultural activity. A large proportion of the remaining arable land could be brought into productive use through irrigation. The irrigation potential in Kenya is estimated at between 360,000 and 540,000 ha with an additional 600,000 ha which can be made productive through irrigation. Use of the drip kit is spreading in Kenya and the majority of drip users (some 70-80%) are women. Women do most of the gardening in Kenya.
Benefits to Environmental, Economic/ Social Development	Drip irrigation can help use water efficiently. A well designed drip irrigation system reduces water run-off through deep percolation. It also reduces high water consumption and therefore production of crops is increased. Disease prevalence in drip irrigation is reduced contributing to high crop yields. Drip irrigation increases areas with permanent or seasonal water scarcity since crop varieties to plant can also be adaptable to these conditions. The drip system technology is adaptable to terrains where other systems cannot work well due to climatic or soil conditions. Drip irrigation system can be automated to reduce the requirements for labour.
Climate Change Adaptation Benefits	Drip irrigation technology can support farmers to adapt to climate change by providing efficient use of water supply. In seasonal droughts, drip irrigation reduces demand for water and reduces water evaporation losses by providing the necessary water resources direct to the plant when required.

Financial Requirements and Costs	The initial cost of drip irrigation systems can be higher than other systems. The technologies for drip irrigation are varied and some of them are including use of a plastic bucket are very cheap. The average cost of a drip irrigation is about US $ 250 A $ 15 bucket kit can also irrigate an area of about 15-20 meters square. Cost of installations is also compensated by high yields after the development.

[i] **This fact sheet has been extracted from TNA Report – Technology Needs Assessment Reports For Climate Change Adaptation – Kenya. You can access the complete report from the TNA project website http://tech-action.org/**