

Best Practices



in the IAEA's technical cooperation programme

Drip irrigation technology for improved tea production for small scale farmers in Tanzania

Best Practice Description:

Description

Drip irrigation technology for improved tea production for small scale farmers in Tanzania.

Problem/Issue

Tea is Tanzania's fifth largest export crop; many small scale farmers depend on it for their livelihood. However, more than 80% of Tanzania's total tea area depends entirely on rainfall for its water needs, and only 20% is irrigated. Low yields, due to recurrent droughts, is a common problem that jeopardises the livelihood of many small scale tea farmers. The challenge is therefore to develop and implement efficient irrigation systems that have high water use efficiency and that are affordable for such farmers.

How & who

Through the IAEA technical cooperation regional project (RAF/5/058) on 'Enhancing the Productivity of High Value Crops and Income Generation with Small Scale Irrigation Technologies', the Tea Research Institute of Tanzania (TRIT) is introducing small-scale irrigation to small scale tea plantation farmers. Low cost, small-scale irrigation (SSI) along with expert knowledge to assist with irrigation scheduling to apply water directly to the roots of the plant, when and where the crop needs it most, will help to mitigate rainfall unpredictability and will avoid the high costs of modern large scale irrigation technologies.

Approach

The study compared rainfed crops with crops grown using the low cost, small scale drip irrigation system. Different irrigation application rates were tested and calibrated using nuclear isotope techniques to select the best irrigation rate and scheduling for the tea plantations.

TC project: RAF/5/058

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Category:

1. Country Programme Framework/Regional Profile Process
2. Programme Cycle Management (PCM)
3. Logical Framework Methodology
6. Partnership
7. Project Results

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Best Practice Description: cont'd:

How effective

Compared to rainfeeding, small scale drip irrigation improved tea yield by 40% and increased tea production from 1000 kg of tea/ha/year under rain-fed regime in 2010 to 4000 kg of tea/ha/year in 2012.

The project has generated tremendous interest from small scale farmers who are eager to adopt the technology, transforming the lives of small scale tea growers by increasing tea productivity and income generation, while removing fears of handling modern farming technologies such as drip irrigation equipment.

As a result of the project, Bosal Afrika (Pty) Ltd donated extra drip kits through the House of Irrigation, South Africa, to extend this work to other climatic ecological areas to test and demonstrate the performance of the drip systems. This will bring about better tea, higher production and improve the livelihood of small scale tea farmers, while adapting to the impact of climate change in Tanzania.

Sub Categories:

- Meeting current and emerging country or regional needs
- Implementation and monitoring
- Sustainability of outputs: outreach towards end-users and beneficiaries
- Implementation Process: Procurement
- Technical
- Adoption and utilization of technology by end-users

Lessons Learned

Tea production can be greatly increased if effort is put in to demonstrate the use of the drip irrigation system to small scale farmers. Farmers are keen to get out of poverty; the IAEA, through partnerships, can make a difference in helping these farmers.

Key Success factors

- Dedicated and determined counterpart, perseverance.
- PMO and TO who are supportive.
- Resources - availability of financial and human (knowledge and logistics)
- Drip system which is easy to operate, affordable and works!

Beneficiaries

Small scale tea farmers.

Quality Criteria

Relevance, effectiveness.

Special conditions

Availability of the drip system.
