

Technology Fact Sheet for Adaptation

Sustainable Land Management ⁱ

1. <u>Sector:</u>	Food
2. <u>Technology Characteristics:</u>	Adaptation
2.1 Technology Name:	3. Sustainable Land Management
2.2 Introduction: <i>low/high Brief introduction to the technology</i>	Land is a limited natural resource on which agriculture and livestock activities are carried out. It is interconnected with other natural resources, which are also essential for human life, such as the air, water, fauna and flora. If the land is well managed, the effects of agriculture on the environment will be acceptable and, conversely, if it is badly managed agriculture will deteriorate other natural resources. Land degradation is among the most environmental problems in the country and sustainable management of land is of high national priority. Land degradation is occurring in several ways; those are heavy soil losses, high sediment yields, soil fertility decline, landslides, salinization, alkalinization, acidification including both desertification and formation of acid sulphate soils, iron toxicity development, nutrient accumulation, water logging and indiscriminate disposal of waste. The most significant of these are heavy soil losses and high sediment yields, thus soil erosion should receive the highest attention. Presently, soil erosion in the hilly regions of the country is 100 tons/ha/yr. Sustainable land management techniques facilitate to increase land and agricultural productivity.
2.3 Technology Characteristics/Highlights: <i>Few bullet points, ie. low/high cost; advance technology; low technology.</i>	• Medium cost intervention (application of different measures are costly and labour consuming) • Soft technology
2.4 Institutional and Organizational Requirements: <i>How much additional capacity building and knowledge transfer is required for the adaptation option to be implemented.</i>	Capacity building is required at the institutional level and the organizational level for extension of research findings carried Field demonstrations

<u>3. Operations and maintenance</u>	
3.1 Endorsement by Experts:	Land degradation is taking place due to inadequate attention to sustainable land management practices and the effects of climate change would aggravate the situation further. The quality of land directly affects the level of food production. Therefore, the adoption of sustainable land management should receive high priority.
3.2 Adequacy for current climate: <i>Are there negative consequences of the adaptation option in the current climate? Some adaptation may be targeted at the future climate but may have costs and consequences under the current climate.</i>	Climate change exacerbates land degradation, which is already happening at an alarming scale, through alteration of spatial and temporal patterns in temperature, rainfall, solar radiation, and winds. Appropriate corrective action to address negative impacts of poor land management practices are considered already overdue. The technology is highly appropriate in the current situation and become more so with the effects of climate change.
3.3 Size of beneficiaries group: <i>Technology that provides small benefits to larger number of people will often be favored over those that provide larger benefits, but to fewer people.</i>	Synergetic and additive outcomes of the Sustainable Land management assure conservation of natural resources and agricultural productivity. All of these directly increase the nation's vulnerability to withstanding the negative impacts of climate change. Benefits will be widespread with producers as well as consumers benefitting from the technology adoption.
<u>4. Costs</u>	
4.1 Cost to implement adaptation options: <i>Cost measures</i>	Rs. 30.00M
4.2 Additional costs to implement adaptation option, compared to "business as usual":	Severity of CC impacts changes the sensitivity of vulnerability and areas affected. To carry out the adjustments, additional cost will be required to implement the adaptation option. .
<u>5. Development Impacts, indirect benefits</u>	
5.1 Economic benefits: Employment - Jobs Investment - Capital requirements	• Increased agricultural productivity • Creation of employment • Lowered reservoir de-silting and other off-site costs
5.2 Social benefits: Income - Income generation and distribution Education - Time available for education Health - Number of people with different diseases.	▪ Increased food security ▪ Increased profitability from farming ▪ Reduced food costs to consumers ▪ Improved livelihoods and social sustainability

5.3 Environmental benefits: <i>Reductions in GHG emissions, Local pollutants, Ecosystem degradation etc</i>	• Decreased land degradation • Reduced downstream sedimentation and siltation • Reduced contamination of soil and surface and ground water • Reduced GHG emissions • Minimize non point source pollution • Improve ecosystem sustainability
6. <u>Local context</u>	
6.1 Opportunities and Barriers: <i>Barriers to implementation and issues such as the need to adjust other policies.</i>	▪ Large investment costs may discourage adoption. ▪ Long gestation periods for the benefits to materialize may serve as a barrier to farmers with short term planning horizons.
6.2 Status: <i>Status of technology in the country</i>	Knowledge in the country on the adverse impacts of land degradation and technology measures to minimize impacts is high. The issue concerns more with poor adoption of technology than on the availability of appropriate technologies.
6.3 Timeframe: <i>Specify timeframe for implementation.</i>	Immediate commencement and continuation through lifetime of land utilization.
6.4 Acceptability to local stakeholders: <i>Whether the technology will be attractive to stakeholders</i>	Technology is acceptable and non-controversial. However, the adoption rates are poor due to long-term investment nature of the technology, which requires measures to incentivize the adoption.

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