

Technology Fact Sheet for Adaptation

Technology: Integrated Soil Nutrient Management ⁱ	
Technology characteristics	
Introduction	<p>Also referred to as integrated soil fertility management, the technology aims making efficient use of both synthetic and natural plant nutrient sources to enhance soil fertility towards improving and preserving soil productivity. The success of INM relies on the appropriate application and conservation of nutrients and transfer of knowledge to farmers. The technology enables the adaptation of plant nutrient and soil fertility management within a farming system to site specific characteristics; an important ingredient for climate change adaptation.</p> <p>Integrated soil fertility management in Ghana, has been widely promoted. There is availability of capacity for effective transfer of the technology to farmers. However the use of the technology is low compared to use of single nutrient sources.</p>
Institutional and organizational requirements	The technology requires a well resourced research and extension organization for its effective promotion and use. In addition there is the need for appropriate extension approaches and methodologies that provides opportunity for farmer experimentation and adoption of technology.
Operation and maintenance	The technology can be promoted using existing research, extension and farmer linkages for technology dissemination. This however needs to be supported by effective capacity building at various levels to support operations at farmer level.
Endorsement by experts	The technology has been endorsed as appropriate for effective management of soil resources for increased and sustainable productivity a necessity for climate change adaptation.
Adequacy for current climate	Integrated Soil Nutrient Management is relevant for addressing current climate change effects at farmer level. Its effectiveness will however be enhanced with combination with other related technologies.
Size of beneficiaries group	The technology has the potential of increasing the number of farmers achieving improved yields from their farms.
Disadvantages	A major disadvantage of the technology is the inadequacy of available organic nutrient sources.
Capital costs	
Cost to implement adaptation options	The technology will contribute to cost associated with use of soil nutrients on farmers' field. It will however require some level of invest for packaging aspects of the technology, awareness

	creation, training of extensionists and farmers; and demonstrations. It will require about US\$ 1,000,000 to be effectively disseminated and adopted.
Additional cost to implement adaptation option, compared to “business as usual” (extra storage capacity)	
Development impacts, indirect benefits	
Reduction of vulnerability to climate change, indirect	Contributes to reduction of vulnerability to climate change through improvements in soil resources and increases in productivity.
Economic benefits Employment	The technology can contribute to generation of employment at the community level sales of transformed organic sources e.g. compost
Investment	Requires low investment in tools and equipment; and training of farmers for transforming organic sources into easily usable forms.
Public and private expenditures	Reduce public and private expenditures in terms of expenditure on the use of inorganic soil nutrients.
Social benefits Income	Could provide a source of extra income for individuals and groups from sales of transformed organic materials into organic soil nutrients e.g. compost
Learning	Creates opportunity for increased group and individual learning at group and community level
Health	The technology could provide opportunity for reducing health risks within communities from improved sanitation achieved from processing of waste.
Environmental benefits	Integrated Soil Nutrient Management will contribute to reduction in the use of inorganic fertilizers hence reduce dangers of water pollution from poor handling and over use of chemical fertilizer.
Local context	
Opportunities and Barriers	The major opportunity for rolling out technology lies in the fact that farmers are already using one form of soil nutrient or the other. Additionally most farmers keep one type of livestock or the other as part of farming activities. The major barrier has is the limited integration of crops and animal production systems at the farmer level .

Market potential	The technology could create a market for organic soil nutrients
Status	The use of the technology is below average across the country.
Timeframe	The implementation can start now.
Acceptability to local stakeholders	The technology is acceptable to local stakeholders.

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