

Technology Fact Sheet

Sector	Agriculture		
Adaptation needs	1. Higher adaptability to more frequent droughts 2. Higher adaptation to limited natural resources (water, non renewable sources of energy, soil) 3. Higher adaptation to prices vulnerability for agricultural products and resources (non renewable sources of energy) in globalized economy		
Technology Name	Conventional system of soil tillage for sugar beet ⁱ		
How this technology contributes to adaptation	Moldboard plow for sugar beet has some advantages: - Perennial weed control - Better humification of crop residues and manure - More uniform distribution of organic fertilizers in deeper arable layer But, moldboard plow has also some negative consequences: - higher vulnerability to wind and water erosion - higher consume of fuel - negative influence on earth warms etc		
Background notes, Short description of the technology	Moldboard plow is one of the basic technological operation in the existing technology of growing sugar beet. After, moldboard plow it is necessary to do disking and cultivation (in the fall), but in the spring at least one cultivation before sowing.		
Implementation assumption.	This technology is already used on large scale in Moldova, but it has some drawbacks (uncompensated losses of soil organic matter, soil erosion, soil compaction etc). Our, task is to convince farmers to reduce the number of moldboard plow in crop rotation.		
Costs per 1 ha		<i>Fuel, l/ha</i>	<i>Salary, lei/ha</i>
	1. Moldboard plow (MTZ-80+PLN-3-35)	25,0	41,3
	2. Disks, MTZ-80+BDT-3	6,0	10,9
	3. Cultivation, MTZ-80+KPG-4	6,0	10,9
	TOTAL	37,0	63,1
Country social development priorities	• Reducing the poverty • Increasing the employment of people • Increasing the rates of birth and decreasing the mortality of people • Improving the system of health care for people		
Country economic priorities - economic benefits	• Increasing the sustainability of agricultural sector, including profitability • Reducing the dependence from non renewable sources of energy and their derivatives (mineral fertilizers and pesticides) • Creating condition for the development of small and medium enterprises		
Country environmental development (environmental benefits)	Achieving a more sustainable use of natural resources through preventing soil degradation, soil and water pollution, preservation of biodiversity etc.		
Social benefits	Maintaining the fertility of soil as the basis for maintaining and increasing productivity for achieving economic stability for the wellbeing of people.		

Other consideration and priorities	Providing food self – sufficiency at different levels (local, regional, country)
Capital costs for one unit of:	Moldboard plow – PR-4 – 82862 lei The required amount for the total area of field crops in Moldova 48571 (the productivity per day is 5 ha. The optimal time for doing such work is 7 days. The total cost of tillage equipment is: 335,4 mln.am.doll.
Operational costs (without maintenace costs)	Use of fuel per 1 ha 31 l x 15 lei = 465 lei

ⁱ This fact sheet has been extracted from TNA Report - Technology Needs Assessment for climate change adaptation - Republic of Moldova. You can access the complete report from the TNA project website <http://tech-action.org/>