

Technology Fact Sheet

Sector	Agriculture																	
Adaptation needs	<ol style="list-style-type: none"> 1. Higher adaptability to more frequent droughts 2. Higher adaptation to limited natural resources (water, nonrenewable sources of energy, soil) 3. Higher adaptation to prices vulnerability for agricultural products and resources (nonrenewable sources of energy) in globalized economy 																	
Technology Name	Conventional system of soil tillage for winter wheat ⁱ																	
How this technology contributes to adaptation	<ol style="list-style-type: none"> 1. Moldboard plow for winter wheat has some advantages and disadvantages. Among advantages we can mention: <ul style="list-style-type: none"> - possibility to control better weeds, especially perennial weeds - better control of pests and diseases - a deeper layer for root penetration etc. Among disadvantages: <ul style="list-style-type: none"> - higher vulnerability to wind and water erosion - higher consume of fuel - negative influence on earth warms etc 2. Sowing of winter wheat after early harvested predecessors allows to accumulate more soil moisture, thus reducing the vulnerability to droughts. 																	
Background notes. Short description of the technology	Moldboard plow is one of the most important technological operation in the existing technology of growing field crops in Moldova. Immediately after this operation we need to work soil with disks and after this with cultivator.																	
Implementation assumption.	This technology is already used on large scale in Moldova. The reason for this is missing of a balanced structure of sowing area with high percent of row crops. In order to implement alternative systems of soil tillage we need to make a transition to other agricultural equipments, which allows to keep crop residues on the surface of the soil.																	
Costs per 1 ha	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;"><i>Fuel, l/ha</i></th> <th style="width: 20%; text-align: center;"><i>Salary, lei/ha</i></th> </tr> </thead> <tbody> <tr> <td>1. Moldboard plow (MTZ-80+PLN-3-35)</td> <td style="text-align: center;">25,0</td> <td style="text-align: center;">41,3</td> </tr> <tr> <td>2. Disks, MTZ-80+BDT-3</td> <td style="text-align: center;">6,0</td> <td style="text-align: center;">10,9</td> </tr> <tr> <td>3. Cultivation, MTZ-80+KPG-4</td> <td style="text-align: center;">6,0</td> <td style="text-align: center;">10,9</td> </tr> <tr> <td>TOTAL</td> <td style="text-align: center;">37,0</td> <td style="text-align: center;">63,1</td> </tr> </tbody> </table>				<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
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Country social development priorities	<ul style="list-style-type: none"> • Reducing the poverty • Increasing the employment of people • Increasing the rates of burth and decreasing the mortality of people • Improving the system of health care for people 																	
Country economic priorities	<ul style="list-style-type: none"> • Increasing the sustainability of agricultural sector, including profitability • Reducing the dependence from nonrenewable sources of energy and their derivates (mineral fertilizers and pesticides) • Creating condition for the development of smal and medium enterprises 																	

economic benefits	
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 self – sufficiency at different levels
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	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/>