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Lay-flat Pipe Demonstration, Training, and Market Support

Background

Lay-flat pipe offers opportunities for farmers in Northern Afghanistan opportunity to cut both water loss and management cost for gravity and pumped water systems. It also offers new possibilities for how farmers access water, move and use water in those provinces. More than1900 farmers experienced the technology in a series of demonstration and training activities by JDA with IDEA NEW / ASAP support through 2009 / 2010.

Report of Completed Activities – (details in table 1).

1) 70 retailers of 6 associations attended from across 5 provinces attended an initial training including field demonstrations and a seminar.

2) JDA's lay-flat pipe team, collaborating with ag retailers, extension workers and farmers, surveyed 19 crop demo sites.

3) Pipe was installed at 11 locations.

4) More than 1900 farmers at 19 demonstration sites learned the lay-flat pipe technology and installation techniques over the course of at least a training day.

Table 1: Completed Activity Details

Location	Activity Record				Materials Used at Site					
Balk Province	Survey	Installed	Main Training Field Day	High Degree Of Interest Indicated	Tarp Dam	Elbows	Linkages	Pipe (m)	Term Clamp	Gates
Balkh	29-Apr-10	N	3-Mar-10							
Dawlatabad	7-Apr-10	N	6-Aug-10							
Dehdadi	25-Apr-10	Y	30-Mar-10		1	0	0	50	1	21
Kaldar	19-Apr-10	Y	25-Jul-10	Y		1	1	100	1	28
Kholm	31-Mar-10	Y	31-Mar-10		1	0	0	50	1	15
Nahr-e-Shahi	29-Apr-10	N	29-Mar-10							
Sholgra	26-Apr-1-	Y	24-Mar-10		1		1	50		
Shorteipa	14-Apr-10	Y	19-Jul-10	Y	1	1	1	120	1	6
JDA Training Center		Y				1	2	150	2	54
Jawzjan Province										
Anchah	25-Mar-10	N	25-Mar-10							
Faizabad	29-Apr-10	N	24-Mar-10	Y-Community						
Khamyah	25-Feb-10	Y	8-Apr-10	Y	1	1	1	100	1	10
Khwaja Dukoh	29-Mar-10	N	29-Mar-10							
Provincial Center	3-May-10	N	28-Mar-10	Y						
Qarqin	24-Feb-10	Y	7-Apr-10	Y	1	1	1	100	1	15
Samangan Province										
Feroz Nakhcheer	23-Jun-10	Y	1-Aug-10		1		1	100		
Hazrat-i-Sultan	11-Apr-10	N	11-Apr-10							
Aibak	18-Mar-10	N	24-Aug-10							
Sar-e Pul Province										
Provincial Center	31-Mar-10	Y	1-Apr-10	Y	1	0		50	1	16
Suzma Qula	4-Mar-10	Y	5-Apr-10		1		1	80	1	15
Total Inventory Out					9	5	9	950	10	180
Supplies In Store	*Last checked 27-Jul-10*				7	10	6	450	4	160

Findings

a. Reasons for Not Installing Pipe

Nine of the 19 locations did not get pipes installed. The final decision rested with the farmer concluding that the benefit would not outweigh perceived drawback. JDA's team recorded the stated reasons for each location. The field team and farmer generally agreed on the conclusion.

Table 2 Reasons for not Installing

	Sentiment	Frequency
1.	Water source too far from field	6
2.	Pipe may be stolen/damaged	4
3.	No need i.e. lots of water/near main canal	4
4.	Technically difficult - e.g. ditch low	2
5.	Land only watered once	3
6.	Too much effort required	2

b. Strong Interest

Installation in seven of the ten sites was followed by strong interest (see table 1). Four of these sites are characterised by sandy soils where water is pumped with diesel engines from hand dug, large shallow wells. Farmers in these locations spend a large amount of money pumping water for multiple irrigations and it can take an hour for water to travel in a 100m canal, thus a lot of water is wasted.

Interestingly, farmers in Faizabad, Jawzjan expressed interest in a communally owned, long pipe to improve water access.

The list of reasons that contributed to a decision not to install was turned into a tentative list of 'pre-requisites for installation' (see table 3). This is an important list because it is based on farmer's perceptions and will be typical of thinking patterns which would inform farmers as purchasers.

Table 3: Prerequisites for Installation

1.	The amount of pipe should be proportional to the size of land being watered
2.	The pipe should be easy to care for, e.g. area safe or homestead near
3.	There should be a significant benefit of saving water for the primary user
4.	Adequate static head is required and field layout may need adjustment
5.	Usually appropriate for land that receives multiple watering
6.	Circumstances should facilitate minimum effort for use of the pipe

c. Challenges and Lessons Learned

Since the beginning of the project, JDA has strongly recommended that lay- flat pipe would be made available in ag retailer outlets nearest to the demo sites but there is no evidence that this happened. A critical indicator of the success/potential for this pipe would be to see farmers procuring it from retailers.

JDA got positive feedback to the $1.00 per meter recommended retail price for the flexi flume, but the question remains what pipe would retail for without subsidy and what price farmers would accept. The project imported pipe currently being used for this report is heavily subsidized. The pipe was primarily used for water transport rather than for in-field irrigation, which is the first benefit that farmer would think of.

Recommendations

The flexi flume and accessories should be made available to ag retailers nearest to the 7 sites where we have found a high degree of interest. Extension agents for these locations can inform interested farmers that it is available.

It would be advantageous to research and demonstrate cheaper pipe that could be imported by established trading companies at acceptable prices for farmers. This cheaper alternative could offer significant savings particularly for the sandy areas south of the Amu Darya River where pipe would be used for transporting water.

Equipment in Use



Picture 1: Inserting bank turnout with tarp



Picture 2:Rolling out pipe



Picture 3: Bank turnout with tarp dam



Picture 4: Bank turnout with tarp dam open



Picture 5: Bank turnout with tarp dam



Picture 6: In line tarp intake



Picture 7: Inline tarp intake: excess water is from previous tests; there is no leakage here



Picture 8: Simple pipe turnout with siphon created from up-stream inline tarp intake



Picture 9: Watering from pipe turn out- siphon



Picture 10: Preparing pipe for outlet



Picture 11: Pipe in use



Picture 12: Bank turnout tarp dam