



**Final Report for
Joint ASAP-ROP Trellis Project
Accelerating Sustainable Agriculture Program in Afghanistan
Forty Hectare Trellising Project in Shamali Plain**

USAID Prime Contract Number: 306-C-00-07-00501-00

Subcontract Number: ASAP-0001-C-07-RoP

Implementing Agency and Contact:

Agency Roots of Peace

Contact: Richard Thwaites

Mobile: 0799 322 943

Email: richard.thwaites@rootsofpeace.org

Total Project Budget: \$99,071.63

Project Life: May 9, 2007 – May 1, 2008

Reporting Period: Final Report

1. Introduction and Summary Tables

ROP completed all deliverables of the project. The 40 hectares trellised will return 3-4 times the budget amount every year in increased rural farm income starting in 2009. Total impact of the \$99,072 budget is \$1,716,741 (NPV over next 10 years).

Although Afghanistan has grown different types of grapes since time immemorial, farmers have been dissatisfied with their income. Traditional cultural methods of vineyard management has been the main reason for poor quality and low production.

The GRAPE project, USAID RAMP Chemonics/ Roots of Peace started to install a few wooden trellising trials during 2005 in the Shamali. At first the farmers were resistant to change and questioned the wisdom of cutting so many canes away from their “bush” trained vines. The farmers became satisfied of the production on both quality and quantity terms once they saw the results. During 2006 it was decided that the wooden posts should be replaced by concrete posts, to provide for a more long-lasting solution.

During 2007, USAID/ASAP planned to extend this program and instructed Roots of Peace (ROP) to install trellising in 40 hectares of vineyards. For the sustainability of the project and to expand the impact of the project, contributions of the farmers (50%) were implemented. Although in the original project design the number of posts budgeted was about 22,000, in fact, in order to do the job properly, we had to use about 36,000 trellising posts in order to complete the project well. The farmers insisted on tighter spacing between the trellis posts. 5-6 meters was the norm, as opposed to our planned 7.5-9 meters.

ROP started with a survey to determine interested farmers. Within one month more than 1,600 farmers were registered and willing to participate. Post production started in August and the distribution continued up to April 2008. A majority of the posts were installed in early spring of

2008. The program was implemented in five districts of Kabul and two district of Parwan province.

Training of farmers and technical assistance was included along with the trellis installation. Our Trellis Installation Team was able to double as extension agents. Post installation and technical assistance completed during the life of this project are shown in Table 1 and Table 2. In addition, a training course on grape production for governmental extension workers and PHDP horticulturist from six provinces was held in RoP Main Office.

Table 1: Deliverables Summary

Deliverable	Target	Actual	Percent Accomplished
Trellis grape vineyards	40 ha	40.56 ha	101%
Grape Production Training	17 extension activities	60	353%
Grape Health Training	17 extension activities	30	176%

Table 2: Post Distribution and Installation

Districts	Contributed farmers	Beneficiaries	Total vines owned	Trellised vines	No. post installed	Area under Trellis Ha.
Private Installations						
Shakardara	13	209	18,100	2,616	1,408	1.56
Guldara	2	28	1,465	420	210	0.23
Mir Bachakoot	111	1627	131,683	37,418	22,874	25.42
Kalakan	9	140	8,480	3,330	1,765	1.96
Qarabagh	54	923	98,071	12,240	6,120	6.80
Bagram	29	350	37,020	3,190	1,650	1.83
Charikar	23	276	18,985	3,240	1,620	1.80
Demonstration Vineyards						
Badam Bagh	0	demo plot	1,700	1,700	850	0.90
Mazar-e-Sharif	1	demo plot	unknown	90	45	0.05
Total	241	3,553	315,504	64,244	36,642	40.56

Table 3: Training and group meeting

Months	Trellis group training		Individual training	Vineyard Health Training	
	Groups	Participants		Groups	Participants
August	9	140	228		
September	10	168	207		
October	14	140	212		
November	16	178	207		
December	0	0	209	10	112
January	0	0	207	8	87
February	0	0	210	8	84
March	6	65	209	2	20
April	5	60	209	2	20
Total	60	751	1,898	30	323

2. Project Impact

The bush style of pruning and growing of vines produces low yields of grapes with poor quality. With certain varieties, the production is so poor and income generated so low that it will not cover the cost of production. With our trellising trials, the farmers agreed to pay the cost of posts after installation. Their hesitancy was eliminated after the first harvest. The trellis intervention increased the grape production up to 52% during the first year and 108% in the second year. Trellis system of vine cultivation has a positive affects on the quality of grape, berry size, dirt and disease free clusters. Table 3 shows the grape production of trellising vines compared with bush trained vines.

Table 4: Yields of trellising system versus traditional method (bush training) during 2006

Varieties	Trellised in 2006 (one year old)			Traditional method			Trellis vs. Traditional	
	Ave. Clusters per vine	Yield Kg.	Ave. cluster weight in gr.	Clusters per vine	Yield Kg.	Ave. cluster weight in gr.	Yield increment due to trellis	Increment of cluster weight due to trellising
Kishmishi	86	18.8	225	83	12.1	145	55.2 %	55.1 %
Taifee	24	18.8	786	27	12.3	459	53.4 %	71.3 %
Varieties	Trellised in 2005 (Two years old)			Traditional method			Trellis vs. Traditional	
	Ave. Clusters per vine	Yield Kg.	Ave. cluster weight in gr.	Clusters per vine	Yield Kg.	Ave. cluster weight in gr.	Yield increment due to trellis	Increment of cluster weight due to trellising
Kishmishi	73	19.3	264	78	9.3	121	109.3 %	121.5 %
Taifee	36	32.3	899	35	15.6	447	107.4 %	101.4 %

* The data collected from 8 demoplots in different locations during 2006,

For the project, ROP trellised 40 hectares of vineyards. Table 4 below calculates the overall economic impact of the project over 10 years. The project cost was just under \$100,000. For this \$100,000 of project funding, we increased rural small farmer income by \$361,800 per year after the first investment year incurring a loss of \$13,200. Over 10 years, the project generated over 18 times the budget in increased income (NPV).

Table 5: Economic Impact from Project

	Yield per vine (kg)	Number of vines in ha	Farm gate price (\$)	Gross Income (\$)	Cost of Trellising (\$)	Gross Income less trellis cost (\$)	Income from 40 hectares (\$)
Year 1							
Traditional Taifee	12.2	1,500	\$0.30	\$5,490		\$5,490	\$219,600
Trellised Taifee	18.8	1,500	\$0.30	\$8,460	\$3,300	\$5,160	\$206,400
Net Program Impact (year 1)							-\$13,200
Year 2 and Future							
Traditional Taifee	12.2	1,500	\$0.30	\$5,490		\$5,490	\$219,600
Trellised Taifee	32.3	1,500	\$0.30	\$14,535	\$3,300	\$14,535	\$581,400
Net Program Impact (year 2)							\$361,800
Total Income Increases (10 years)							\$3,243,000
Net Present Value (n=10 years, i= 10%)							\$1,870,195

3. Lessons Learned

There were a few lessons learned during this project and some progress noted.

1. Farmers in the Shamali have accepted trellising. 2005 ROP was able to entice 18 farmers to install trellises. 2006 we surpassed 1,000. 2007/08 we installed over 1600 and were limited by funding. Trellises are in the “hurricane” stage on the adoption curve, in Geoffrey Moore jargon. This is the aim of every intervention.
2. The 50% subsidy for trellis post cost and free delivery attracted more than enough farmers to participate in the program. Future programs in Shamali should consider a lower subsidy. Other regions like Mazar, Ghazni and Kandahar may require the 50% subsidy for one more year.
3. ROP has worked to establish multiple trellis manufacturing companies in the Kabul-Parwan region.
4. June through January are not good months for trellis installation. No real news here, but this needs to be emphasized as there are still some who miss this point. Yes installation is possible, but the ground is the hardest, the vines have fruit and the farmers are at their poorest time of the year. Post harvest things will pick-up, but the dominant practice with grapes is that heavy work like this happens in the late winter, early spring.
5. Farmers will implement the trellises the way they want. One example is trellis spacing. One trellis post every two vines has become the accepted spread. Although this is a bit over-engineered, it is now the standard. Some farmers are even installing one trellis post per vine.

6. The grape growing districts closer to Kabul, closer to the trellis manufacturer and with a higher amount of the grape varieties in demand, purchased the most trellises. Mir Bocha Kot was the first district which purchased more than 63% of the total posts and was followed by Qarabagh with 17%.

4. Recommendations

1. Future programs in Shamali should consider a lower subsidy. Other regions like Mazar, Ghazni and Kandahar may require the 50% subsidy for one more year.
2. Procurement for trellises should be run almost exclusively through the private sector to encourage a sustainable delivery vehicle. Care should be taken to ensure that distributors have the financial capacity to carry inventory prior to the late winter surge in demand.
3. Demo plots showing alternative trellis designs is badly needed throughout the grape growing regions. Each MAIL extension office location in the grape growing regions should feature these options.
4. Start trellis programs in the fall to allow the trellis manufacturers to make and stockpile trellises before the hard cold shuts down their activity. This way they will have inventory for the late winter installation window.

5. Case Studies

Mir Abdul Wahid, grape grower in Mir Bocha Kot District

One of the farmers, Mir Abdul Wahid (40 years old, former military) from Gozar village of Mir Bocha Kot district purchased more than 3,000 posts. He had established a vineyard beside the hilly field last year. He purchased in five separate occasions, as he mentioned many times he earned money and he planned to purchase more.



“During the war I fought for my home country and after the war again I started to work on land. My friends invested their money on making building and other business. I preferred to invest in agriculture. I started to establish this vineyard (3,000 vines) last year. Now my vines are two years old and every morning I am coming to see my vines grow. I heard RoP is selling the post with 50% subsidy. I started to purchase for all vines, but I did not have enough money. I purchased 1,000 post at first and then whenever I had a bit more cash I tried to purchase more and more. Now I purchased 3,000 post and I installed posts for all vines. It was a good chance [critical time] for my young vines to start growing on these posts. Without this help it was difficult for me to complete the installation of the whole vineyard during this year. Now I am very happy that I got sufficient posts and have been able to trellis my vineyard. Really I enjoyed and I expect my vines will start production next year. Most of my friends who are coming to meet me, find me in my vineyard. They feel how I am happy with my vineyard. Some of my friends say I am a lucky man that I restart working in the field. I also feel proud of my work as a progressive farmer. I am sure that introducing of trellising was a very good program for improving of vineyards in Shamali Plain and I wish this programme should extend for years.”

Now he has Taifee, Hossaini, Kandahari and Shondokhani varieties. Any time of the day you can find him either in his house or on his vineyard.

Mr. Shams-ul- Haq, Grape Grower in Bagram

Another farmer, Mr. Shams-ul- Haq in Qalabayazid of Bagram district who grafted his vines with Shondokhani on 2006, now has installed the rest of his vineyard with posts. He is a teacher and after school he and his family work on their vineyard. He was telling:

“Before the installation of post many times I was thinking to take out the vine from the field and plant wheat and other crops on it. When I grafted the vines and install the trellising, the vines produced better and with a bigger cluster. Last year the production was very good and it was quite sufficient for me. In this spring during pruning of my vines a few farmers came and asked me to provide them canes for nurseries. They offered to pay 2 Afs. for each cane. I also encouraged them to establish their own nurseries from my own cutting and I did. I sold the rest of the cuttings to them. This was the new income that I earned from my trellised vineyard”.

Although he has only about 0.4 h. of vineyard, he seems happy from his product and he believed every year his income will increase gradually. When we asked him to list any advantages of trellising he mentioned the following points.

- Trellis increases the yield more than double.
- Trellis improved the quality of grapes (berry size and cluster weight).
- Trellis avoid from yield losses.
- Easy control of pest and disease.
- Facilitates the cultural practices.
- In young vine inter-cropping is applicable.
- The new vineyards produce earlier

6. Attachments on CD

Provided along with this final report are the following items:

- ROP reports for project
- Photos of project
- Listing of participating farmers, along with their locations

7. Photo Gallery





End of report.