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# DEVELOPMENT WORKS CANADA DEHYDRATES PROGRAM FINAL REPORT

**Report for RAMP-CLIN 0002-JO#26 -DWC**

**RAMP/DWC**

**JUNE 2006**



*Skilled staff producing first class product.*

## Dehydrates Program Final Report

### 1. Job Order Number

026-00, Dried Vegetable Program:  
(CLIN 0004: Agricultural Technology and Market Development)

### 2. Implementing Agency and Contact

Development Works Canada  
Drew Gilmour, Director  
[gilmour@developmentworks.cc](mailto:gilmour@developmentworks.cc)

### 3. Contract Line Item Number (CLIN)

306-C-00-03-00502-00-DWC

### 4. Reporting Period

February 29, 2004 – 31 January 06  
(with no-cost extension to the 30 June 06)

## 5. Total Project Budget

### Program investment:

Ramp (Year 1)	\$2,223,102
RAMP (Year 2)	\$799,785

RAMP contract	\$3,022,887 USD
Plus: DWC investment	\$835,000 USD (minimum)
USAID/RAMP/DWC co-investment	\$3,857,887 USD

## 6. Summary of Project Activities and Impact

### **Crate production**

The DWC Dehydrates Program established a short term crate production scheme which addressed the common problem of vegetable loss and damage during transport. This project saw the production of over 12,000 crates. Crates were made in Charikar in a fully integrated production line numbering about 90 men

and women. All employed in this project learned valuable metal working skills and most were subsequently employed in the factory production line.

The crates were extremely well received by participating farmers who report that losses to spoilage decreased dramatically.

### **Crop Cultivation**

The Dehydrates Program engaged the following contract farmers, in crop cultivation for the factory.

- DWC Harvest 1 (end of 2005) 853 Farms (4582 farm workers @ 5.4 per farm)
- DWC Harvest 2 (1st for 2006) 688 Farms (3264 farm workers @ 4.7 per farm)

Note: working with fewer, more loyal, farmers in Harvest 2 increase yields

Participating farmers received important inputs such as improved seeds, fertilizer, crates and instruction on production techniques and the appropriate use of nutrients.

- DWC Harvest Two (first in 2006) to service 688 contract farmers, distribution was made for:
  - Average 0.3 ha per contract farm;
  - Average distribution per farm: 3.6 kg of seeds; 69 kg Fertilizer

Farmers signed contracts with the Factory which indicated the crop to be grown, how much land would be used and the price the farmer would be paid. This method has introduced some stability to participating farmers who are no longer dependent on local market fluctuations which often do not benefit the farmer. Additionally, farmers were introduced to new crops and to high international quality control standards which gives them advantages over competing producers.

### **Factory Construction**



*World class agriproduction facility is fully operational and employs between 60 & 100 workers.*

A major accomplishment of the Dehydrates Program was the construction of a modern dehydration processing facility equipped with low-tech machinery spread on a 6 ha site that includes a research farm. The Factory is located just outside of Charikar on the main Charikar to Kabul road, on land donated by the Parwan government. The two-story building features sorting, cutting and drying areas, a warehouse, a small test laboratory to ensure quality control, a classroom for the research farm, offices, a cafeteria, employee locker rooms and a borehole to provide clean water to wash the produce and irrigate the research farm.

### **Vegetable Processing**

Depending on the production cycle, the factory employs between 60 and 105 workers year round to process the vegetables provided by area farmers. The facility is capable of 10 tonnes of fresh vegetables on a daily basis and operates at capacity for 10 to 11 months per year. Women, mostly from female headed households, make up at least half of the factory employees and also operate in management positions.

The low tech equipment used in the factory has proven to be a sustainable choice in Afghanistan, where spare parts and maintenance expertise are often in short supply. To date, factory employees trained by expatriate DWC staff have been successful in maintaining and fixing the processing equipment.

### **Sun Dried Tomato Project**

The complimentary sun dried tomato project during DWC's late harvest of 2005 involved over 450 women from 25 villages to sun dry tomatoes in their homes after receiving training and supplies from the factory. Participants received training in appropriate methods of sun drying for the European market, drying trays, salt, knives, soap and plastic bags for storage.



*Integrated production line usually operates 24 hours daily.*

Due to several factors, many participants did not honor their contracts and sold tomatoes on the fresh market. To ensure that this problem does not occur again in the future and to maintain greater control over product, DWC has altered this project so that fresh tomatoes are now purchased from farmers and are sun dried by up to 200 female employees on the factory grounds. This approach ensures that the factory receives adequate quantity, quality control and employs a greater number of female heads of households who are most needful of employment.

### **Research Farms**

Two functioning research farms (one over target) have been established in the Charikar area to research and illustrate new vegetables and a variety of growing alternatives. The farm located adjacent to the factory utilizes 8 acres and demonstrates new vegetables and a variety of cultivation and irrigation techniques. The second farm is located at the junction of the Bagram and Charikar roads and is accessible to a different group of participating and interested farmers. Outreach activities at both farms have included regularly organized visits by local farmers and larger community "open houses" at farm locations designed to introduce farmers to factory activities and benefits. Hundreds of farmers and community members have visited and benefited from the research farms.

### **Collection Centers**

DWC has established four collection centers which consist of concrete flooring, a basic roof and scales for weighing produce on site. In addition to being used for factory activities, the collection centers are used by community members to conduct additional trade and marketing within the villages.

Collection points have been established in 25 locales in the Charikar area and serve smaller populations than the 4 collection centers. The effectiveness of these facilities were not as expected and have been superseded by more convenient collection methods in arranging regular pick-up from farm gate.

### **Parwan Dehydrates Association**

Creating a viable vegetable cultivation network with Afghan management and ownership has always been the goal of this project.

In this project, the entire operation is just about to be transferred to the Parwan Dehydrate Company. Development Works, owing to its investment, owns 60 percent of stocks, while the Growers Association is entitled to 40 percent of remaining equity.

It was planned that farmers, after three solid year's of participation, would be able to assume the 40 percent equity stake.

Unfortunately, program delays caused by long winters, poor seeds and farmer default did not provide enough time to firm up a dependable base of participating farmers, increase yields and sufficiently engage participants enough to assume their equity stake.



*Quality Control – ensuring the best product possible.*

While DWC and the Ministry of Agriculture could have released the farmer block of shares during this project cycle, it would have been unethical as we found concerted efforts from local merchants to buy off individual shares at token price.

Instead, Development Works has been working in full concert with the Ministry of Agriculture to educate farmers to the advanced concept of stock ownership, its responsibilities and value.

Meetings were held in June & July with the Ministry of Agriculture, RAMP and a DWC representative to discuss and agree to the extension of the previously signed Grower's Association MOU for five months to allow the completion of the third DWC vegetable harvest and identification of final farmer member numbers to receive the 40 percent equity entitlement.

The Ministry of Agriculture is presently in the process of incorporating the Parwan Growers Group [PGG], which will be the Afghan body corporate to receive such 40 percent entitlement, previously held in trust.

Upon incorporation of PGG, the Ministry of Agriculture and RAMP with DWC endorsement will sign the extended MOU.

At that same time DWC shall sign over all rights to the factory, plant and equipment and non-expendable property to the Afghan registered Parwan Dehydrates Company [PDC] for which DWC will retain 60 percent equity participation and 100 percent operational control. The PDC was incorporated for that specific purpose, to receive the business assets as a going concern from the completed RAMP-DWC Vegetable Dehydrates program.

The Ministry of Agriculture shall continue to hold in trust the 40 percent equity entitlement in the Parwan Dehydrates Company [PDC] on behalf of the Parwan Growers Group [PGG], until the MOU conditions have been met. As such Development Works never has, or ever will, benefit from the 40 percent growers' share.

While this process is taking longer than expected, it will ultimately reward Parwan farmers with a viable slice of a profitable, sustainable factory.

### **Marketing and Sales**

DWC has established marketing linkages with dehydrates buyers in England, Germany and Holland and has sold \$85,000/- of produce to date. With only two seasons of experience and the second season still under harvest at project end, our present Afghan supply has not yet satisfied our UK buyers. DWC has been forced to change strategy to supply mixed container lots to maintain buyer interest.

It should be noted, however, that the global demand for vegetable dehydrates is as strong today as when the project started two years ago. The challenges of operating in Afghanistan have simply delayed the factory's seizure of a lucrative slice of the global market. Lessons have now been learned, and are being implemented.

During July and August 2006, DWC embarked on an intensive European marketing campaign with great success. Buyers from the UK, the Netherlands, Germany and other locales have commissioned enough product to keep the factory operating 24 hours daily, 11 months a year. Now that the factory production challenges have been significantly reduced, next year should see a dramatic increase in sales.

## **7. Lessons Learned and Recommendations for Future Activities**

### ***Farmer Coordination***

#### Resistance to Change

Farmers are extremely conservative in Afghanistan and will not embrace anything new or different unless well proven, widely demonstrated and endorsed by colleagues.

#### Reluctance to Keep Agreements

This project provided seeds, ag inputs, tools and extension service as part of a binding production agreement that would guarantee farmers increased crop yields and guaranteed prices.

Unfortunately, 40 percent of farmers signed the agreement, received support and, upon harvest of a greatly improved crop, broke the agreement and sold the produce on the fresh market. Others would only forward a fraction of their yield to DWC, sometimes forcing the agency to buy its "own" produce on the fresh market – in effect, rewarding farmers for their default.



*Extension activities must operate continuously.*

As this intolerable breach of trust could have killed the project, DWC responded quickly by:

- engaging local community, provincial government and Ministry of Agriculture support
- cutting out non-productive farmers or those who were defaulting
- re-doubling efforts to work with "loyal" farmers who met their obligations
- recruiting new farmers on the recommendation of loyal farmers
- switching crop types to those less in demand on the local market

Further investigation noted that the small-holding farmers (those with 1ha or less) were less likely to default on agreement than farmers with more land. Farmers with more land tended to be more strategic in nature and would often systematically siphon off most DWC-funded produce to the fresh market, leaving a token for factory collection.

For future projects of this sort, DWC recommends that implementers:

- A- sign agreements with farmers to produce crops with little domestic demand<sup>1</sup>
- B- engage governance and local leadership at all levels to enforce agreements
- C- rent land, hire farm workers to raise high-yield crops in an controlled, predictable environment

### **Seed Stocks**

Through use of good-faith contacts, the factory received an lucrative and sizeable order for green beans. Seeking to develop local vendors, the project bought seeds off a Ramp-recommend seed merchant.

Unfortunately, the Kabul seeds were of extremely poor quality, mostly contaminated, and intermixed with other vegetable types resulting in a radically reduced harvest of mixed crops. Farmers were paid little, the factory lost the sale and its reputation to its international buyer. A serious setback, that – without Development Work's continued commitment to the program – would seriously jeopardized the viability of the factory.

Having exhausted local sources for quality seeds, the factory now seeks to import proven seeds, in itself a challenging exercise in customs clearance.

### **Fuel Supply**

The Charikar factory boilers operate on heavy oil as Afghanistan lacks sufficient electrical capacity to power the factory. International market conditions coupled with local shortages caused the prices of oil to dramatically rise while stocks proved truly difficult to find.

In response, DWC scoured the country for sufficient stocks of oil though it found that international military procurement officers would often inflate market value to unsupportable levels.

Development Works is also investigating the viability of switching to locally available coal by determining whether:

- it is technically viable and cost efficient to convert its boilers to coal fire use
- there are sufficient stocks of coal (likely from Mazar)
- the environmental impact would be acceptable to the local community and end-product buyer

DWC is also negotiating with local international military bases on taking their waste oil and exploring low-cost renewable energy options such as solar and wind power for electrical needs.

For future projects, DWC would recommend fully lock in a dependable power source.

### **Security**

Happily, the program has been well supported by the local community and has suffered relatively little threat though the following incidents were recorded:

- mine strike, no casualties – *during construction, a mine-strike put back progress by three months*
- kidnapping threats – *occasionally made against expats & senior Afghan staff. All resolved.*
- attempted take-over – *occasionally, a commander tried to expropriate the factory. Problem resolved.*
- unknown threats – *every 6-8 months, Afghan police would protect factory from some unspecified threat*

While we have been advised that tensions are rising in Parwan and have hired police security in response, in general, this demonstrates that the project's intense engagement with local communities on security has been validated.

### **Marketing**

Development Works was so motivated to ensure the viability of this project (and its investment) that it was able to get European buyers to reserve more than 100 percent of output before breaking ground on the

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<sup>1</sup> *Introducing new crop types to lesson farmer default is not universally successful. For instance, this program distributed bean type not found in Afghanistan, yet consumers found an appetite for this vegetable.*

factory. Unfortunately, production challenges reduced factory output and some buyers were forced to buy from other sources, a troubling development.

This experience has proven two things. First, there is overwhelming global demand for vegetable dehydrates. Second, it's better to "pre-sell" a fraction of output to buyers to ensure buyer goodwill and engagement by not jeopardizing their long-term requirements. Remaining materials can be sold on the spot market overseas.

### **Gender Opportunities**

While not focussing on the provision of gender opportunities, the factory has proven itself a national leader in the engagement of women in industry.

The project's first activity in gender development was recruitment of women into the production of crates and trays. A short term, four month project, women were integrated into every aspect of the production line, and learned unique skills such as welding, painting, logistics and management.

Following the closure of the crate production line, the best women (and men) were brought into the factory. More than half the factory workforce are women, mixed in a co-ed environment and serving in all capacities from line staff, to support, to management.

This project achieved such gender parity through a combination of circumstance and policy. It was and is the policy of Development Works to push women's opportunity wherever possible, and community leaders of relatively liberal Parwan Province proved open to such an approach.

The Project was less successful in the engagement of female farmers in a stand-alone sun-dried tomato sub-project. This initiative was designed to engage single women such as widows in viable economic activity that they can perform at home. A truly popular initiative, over 450 women quickly oversubscribed the sub-project managed by expatriate and local female staff.



*Program tomato farmers & children in the Ghorband Valley.*

Participants really took to the sub-project. Against conventional expectations, women demonstrated they were as adept at men in farming, suggesting their role in agriculture is greater than supposed. Unfortunately, much of the cultivated tomatoes, bigger, juicier and better in every way to local variants, were sold on the domestic market as quick cash crop – robbing the factory of critical product. Investigations determined that while single women, such as widows, were free to participate in ag programming, business decisions and most income would revert back to the extended, male-dominated family.

In response, DWC shifted the preparation of tomatoes from the home farm to the factory site, employing over 200 women as needed. This response has dramatically increased available produce for the factory.

In no way deterred by this result, DWC believes the lesson is that women-focused programming can never operate in a vacuum or as a solo-focus. Instead, women can be better engaged if their participation is viewed through a family-focus that develops their economic opportunity through existing societal structures.

## **8. Summary of Projects Relationship and Coordination with the Transitional Islamic State of Afghanistan and Appropriate Ministries during the Course of this Project.**

Throughout the course of this project, DWC has maintained strong partnerships with several important Afghan groups. The Parwan government and the Charikar district government have provided immense support beginning with the donation of land for the factory construction. Additionally, the Parwan Governor and his office have helped to involve local farmers and groups in program activities.

DWC has developed an important relationship with the Ministry of Agriculture which has led to an advisory role to the Ministry and DWC office space being located at the Ministry office.

## **9. Photographs, Human Interest and Beneficiary Stories**

### ***Rabia's Story***

Rabia is a 35 year old widow who works at the factory. She is the only breadwinner for herself, her two young children and her elderly mother who share a small house in Charikar. When her husband died, she started cleaning and doing laundry in other people's houses, but she was never sure when she would next find work or how much she would be paid – it often depended on other people's generosity. She is happy to have a dependable income from the factory:

*“Because I have had a very bad time, I have forgotten that I am a woman. Now, I don't want anything – just to take care of my children. My heart has broken. When the factory was built we were very happy, now we are very grateful to have work. You give our children food.”*

### ***Parigo's Story***

Parigo lives with her six young children and her disabled husband in one rented room in Charikar. Before the factory opened, she sometimes worked in other people's houses or fields, but was often jobless and her husband was unable to work. They depended on charity from neighbors and borrowed flour from a friend. Now that she is employed full time at the factory she says that she is using her salary to repay her debts and to ensure that her sick son has enough food.

### ***Photos***

DWC set up an email account for RAMP which holds many factory pictures.

- A- open up [www.developmentworks.cc](http://www.developmentworks.cc)
- B- click on “*staff log in*”
- C- email address **ramp**
- D- password **factory**

Ramp is welcome to use these photos, though attribution is appreciated.

## Final Report DWC Dehydrates Program

### Location and description

Province: *Parwan*

District: *Charikar*

Work Progress			
Activity/Performance Indicators	Performance Targets	To date	Comments
<b>Production Contracts</b>			
veggie farmers coordinated	1,200	2,200+	non-stop process
veggie farmers contracted contract farmers	1,200	1409	
sun dried, women farmers coordinated	400	450+	
sun dried, women farmers, contracted	400	282	significant participant drop-out
veggie acres under contract	800	900+	
research farm established	1	2	plus demo plots
<b>Processing Centers</b>			
dried veggie factory established	1	1	Charikar factory processing facilities
collection centers	1	4	
collection points	0	26	
crate production	12,000	12,000	
sun drying tray production	8,000	8,000	
<b>Association Development</b>			
Parwan Dehydrates Assoc est'd	1	1	Under establishment with MoA
<b>Extension</b>			
farmers introduced to best practice	1200	2,200+	Continual process or 250 mth
<b>Project Cost (\$US)</b>			
	<b>US\$ 3,022,887</b>		
<b>Intermediate Results</b>			
<b>Local Purchase</b>			
purchase of locally produce vege	<b>\$454,291</b>	\$70,000	
<b>Sales</b>			
value-added veggie products	<b>\$1,149,000</b>	\$84,488	Export in July 06 not included

### Milestones

- March '04 Contract Start
- June ' 04 Trial Production Run / Machinery Test
- July '05 Factory Built
- Aug '05 First Export of Product (13 months from funding)
- Nov '05 First Harvest
- June '06 Second Harvest



*"I don't have to beg from my family anymore "*

*Leila, Parwan*

## 11. Conclusion

This project has succeeded in establishing a world-class production facility that can engage in the growing global dehydrates market. Challenges were encountered – and resolved – every step of the way. And while the exceptionally difficult operational environment of Afghanistan had slowed progress – the Parwan Dehydrates Company is on track, realizing its potential.

The Charikar factory is unique in Afghanistan. It has created sustainable employment for over 3,500 farmers, produced real opportunity for women and established a too-rare foot-hold in international markets for Afghanistan.

It has demonstrated to Afghans that their country can join the global business community by producing a first class product.

Development Works is proud of this project and extremely pleased to partner with Chemonics in this cutting edge initiative. This is not a contract to us, but our way to actively build Afghanistan's future. Our investment – listed at 850,000 USD but in practice much more<sup>2</sup> – reflects our commitment to succeed and determination to do the right thing for Charikar farmers.

A true RAMP success story.

### Contact

For more information, please contact:

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<sup>2</sup> *DWC also invested, but did not list, significant resources to cover additional expat labor, support charges and ongoing operational costs.*