

Table A.1.2-11 Estimated Current Cropped Areas and Crop Production in Major Producing Areas (1997)

Crops	Florida																	
	Samaipata Area			Mairana Area			Pampa Grande Area			Comarapa Area			Saipina Area			Vallegrande Area		
	Cropped Area (ha)	Production (t)		Cropped Area (ha)	Production (t)		Cropped Area (ha)	Production (t)		Cropped Area (ha)	Production (t)		Cropped Area (ha)	Production (t)		Cropped Area (ha)	Production (t)	
1. Cereals & Beans																		
Maize	2,900	6,380		6,200	13,640		2,500	5,500		n.a.	n.a.		n.a.	n.a.		n.a.	n.a.	
Wheat	1,100	1,650		700	1,050		500	750		n.a.	n.a.		n.a.	n.a.		n.a.	n.a.	
Beans	50	50		100	100		100	100		n.a.	n.a.		n.a.	n.a.		n.a.	n.a.	
Others	4,050	8,080		7,000	14,790		3,100	6,350		0	0		0	0		0	0	
Sub-total																		
2. Vegetables																		
Potatoes	470	5,170		140	1,680		300	3,600		290	3,190		500	6,000		680	7,480	
Tomato	70	1,050		110	1,650		240	4,080		100	1,700		220	3,740		430	7,310	
Lettuce	50	1,000		110	2,200		240	4,800					220	1,320				
Choclo	30	150		100	1,000		420	2,100		210	1,050		490	4,900		340	1,700	
Others	620	7,370		460	6,530		1,200	14,580		600	5,940		1,430	15,960		1,450	16,490	
Sub-total																		
3. Fruits																		
Peach	30	300		110	1,100		50	500										
Plum																		
Citrus	100	1,000		50	500		80	800										
Others	60	600		90	900					40	400							
Sub-total	190	1,900		250	2,500		130	1,300		40	400		0	0		0	0	
4. Others																		
Tobacco	760	1,060		400	560					n.a.	n.a.		n.a.	n.a.		n.a.	n.a.	
Sugarcane							30	1,200		n.a.	n.a.		n.a.	n.a.		250	15,000	
Others	80	3,200								n.a.	n.a.		n.a.	n.a.		n.a.	n.a.	
Sub-total	840	4,260		400	560		30	1,200		0	0		0	0		250	15,000	
Total	5,700	21,610		8,110	24,380		4,460	23,430		640	6,340		1,430	15,960		1,700	31,490	

Remarks 1: Samaipata, Mairana, Pampa Grande, Saipina & Vallegrande: cropped area and production in the whole municipality
 Remarks 2: Comarapa: cropped area and production in Comarapa municipality excluding those in San Isidro Area; San Isidro: cropped area and production in irrigated areas in San Isidro and Pulquina
 Remarks 3: "Other" in 1. Cereals & beans include groundnut & others
 Remarks 4: "Others" in 2. Vegetables include green pepper, beans, peas, cabbage, onion, carrot etc.
 Remarks 5: "Others" in 3. Fruits include grape, apple
 Remarks 6: "Others" in 4. Others include sugarcane, cassava etc.
 Source: Samaipata: Plan Participativo de Desarrollo Municipal Sostenible, 1997, Municipal de Samaipata
 Pampa Grande: Data presented by CIAT & municipal office, Pampa Grande
 Comarapa & Saipina: Data presented by PRICRUZ
 San Isidro: Estudio de Pre-factibilidad Proyecto Riego Puluquina Arriba-San Isidro-Puluquina Abajo, 1992, CORDECRUZ; Data presented by CIAT/ASOFRUT, San Isidro
 Vallegrande: Plan Participativo de Desarrollo Municipal 1998 - 2002, Municipal de Vallegrande; Data presented by CIAT, Vallegrande

Table A.1.2-12 Prevailing Farming Practices of Potatoes and Vegetables in Major Producing Areas

Practices	Crop		
	Potato	Tomato	Lettnice
Land Preparation	Ploughing, harrowing & ridging mechanically Ridging by draft animal is partly practiced	Ploughing, harrowing & ridging mechanically Ridging by draft animal is partly practiced	Ploughing, harrowing & ridging by tractor Ridging by draft animal is partly practiced
Variety	Weicha & Hollandia	Rio Grande, Rio Fuego, Sta. Clara etc.	Chantenay, Brazilia
Seeding Rate	1.5 - 2.0 t/ha	0.5 - 1.0 kg/ha; 0.7 kg/ha in average	8 kg/ha in average
Fertilization	N: 60 kg/ha; P2O5: 100 kg/ha; K2O & manure: not common	N: 45 kg/ha; P2O5: 30 kg/ha; K2O: not common; manure: 2.5 t/ha(not common)	N: 20 kg/ha; P2O5: 40 kg/ha; K2O & manure: not common
Chemical Spray	Fungicide: Dithane, Antracol etc. 12 kg/ha Periodical application mixed with insecticide; every week or more Insecticide: Cipadul, Karate etc. avg. 4 kg/ha Periodical application mixed with fungicide; every week or more Herbicide: not common	Fungicide: Dithane, Antracol etc. 14 kg/ha Periodical application mixed with insecticide; every week or more Insecticide: Match, Karate etc. avg. 7 kg/ha Periodical application mixed with fungicide; every week or more Herbicide: not common	Fungicide: Antracol etc. avg. 4 kg/ha Periodical application mixed with insecticide Insecticide: Karate, Thodoron etc. avg. 3 kg/ha Herbicide: not common
Irrigation	Depending on soil conditions & location; Generally once per week	Depending on soil conditions & location; Generally once per week	Depending on soil conditions & location; Generally once per week
Labour Inputs	Planting: 14 mandays/ha in average Chemical spray: 10 mandays/ha in average Weeding: 28 mandays/ha in average Harvesting: 36 mandays/ha in average Total Inputs: 98 mandays/ha in average	Planting: 9 mandays/ha in average Chemical: 29 mandays/ha in average Weeding: 14 mandays/ha in average Harvesting: 51 mandays/ha in average Total Inputs: 130 mandays/ha in average	Planting: 3 mandays/ha in average Chemical: 3 mandays/ha in average Weeding: 22 mandays/ha in average Harvesting: 131 mandays/ha in average Total Inputs: 177 mandays/ha in average
	Over 90 % of labour requirements sufficed by hired labour	Over 90 % of labour requirements sufficed by hired labour	Over 90 % of labour requirements sufficed by hired labour

Remarks: Results of farmer interview survey on crop production costs by JICA Study Team, 1998

Table A.1.2-13 Features of Major Producing Areas: Marketing Aspects - Samaipata Area

1. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas Village	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market Markets	%	
Potatoes	Lajos, Bermejo, Lanegra, Santiago Valle, Paredonas, San Isidro, Empinado, Montagulo, Vallealto, Bella Victoria	80	Abasto	100	Nearest wholesale market
			Other markets in St. Cruz		
			Cochabamba		
			Others		
Vegetables	Bermejo, Paredenes, Bella Victoria, Puerto Limon, Sivingalito	85	Abasto	100	Nearest wholesale market
			Other markets in St. Cruz		
			Cochabamba		
Citrus	Bermejo, Cuevas, Nohiras, Floripandio, Bella Vista	85	Abasto	80	Nearest wholesale market
			Other markets in St. Cruz	10	
			Others(processing factory)	10	
Peach/Plum	Cuevas, Nohiras, Sivingalito	85	Abasto	80	Nearest wholesale market
			Other markets in St. Cruz	10	
			Others(processing factory)	10	

Daily fluctuation of shipping volume:
 - Shipping is generally on 3 days/week, Monday, Wednesday & Friday and selling on next day; Tuesday, Thursday & Saturday
 - Shipping volume is largest on Friday followed by Monday & Wednesday .

Other Related Information: Transporters syndicate organized; 10 truck owners among 45 members; most truck owners are not member
 - No. of trucks in the Area limited and in major harvesting season, trucks come from other areas(San Isidro, Los Negros)

2. Prevailing Collection & Shipping Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm (or home) under shade Grading: 3 sizes in potatoes, tomato & fruits(large, medium & small)
Packing	Potatoes: plastic bag(46kg) Tomato: wooden box(20kg) Fruits: wooden box(20kg) Lettuce, pepper, cauliflower: bamboo basket(15kg)
Collection & Shipping System	<p>harvesting: 1 day prior to shipment; in case of lettuce, early morning on shipping day Collection & Shipping Methods: 1 to2 days before harvesting arrange shipping schedule with transporter or buyer</p> <pre> graph LR A[farm (manual/draft animal)] --> B[farm depot or trunk roadside] B --> C[destination markets] style B stroke-dasharray: 5 5 style C stroke-dasharray: 5 5 </pre> <p>(loading on 4 - 5t truck)</p> <p>Shipment Time: From 6 a.m. to 6 p.m., generally in the afternoon Distribution System/Marketing Channel & Payment Terms:</p> <p>Primary Case:</p> <pre> graph LR A[farm depot or trunk roadside] -- "in cash(5 - 8 hours after selling)" --> B[direct selling to wholesaler at market (sometimes sold to retailer)] C[transporter + producer] --- B </pre> <p>Secondary Case:</p> <pre> graph LR A[farm depot or trunk roadside] -- "in cash(5 - 8 hours after selling)" --> B[direct selling to wholesaler at market (sometimes sold to retailer)] C[producer with own truck] --- B </pre> <p>Tertiary Case:</p> <pre> graph LR A[farm depot or trunk roadside] -- "in cash or after selling at market" --> B[wholesaler at market] C[intermediary(consignee/buyer)] --- B </pre>
Others	Market Information: from fellow producers returned from market In irrigated areas(potatoes & vegetable growing areas), loading sites are at farm or close to farms. Transshipment: In case of fruits or product volume limited, transshipment from small car to truck at main roadside Distance to Destination Markets: Samaipata ---- St. Cruz 120 km/3,0 hrs.

3. Marketing of Cereals & Beans

Maize: mostly local consumption including supply to poultry farm

Beans: almost all to St. Cruz through intermediary(buyer & collector)

Source: Information provided by producers, agriculture institutions & municipal office(JICA Study findings,1998)

Table A.1.2-14 Features of Major Producing Areas: Marketing Aspects - Mairana Area

I. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas Village	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market Markets	%	
Potatoes	B. Quebredas, Yerba Buena, Militar, Venadillo, Pozuelo	80	Abasto	90	- nearest wholesale market
			Other markets in St. Cruz	10	
Tomato	Bs. Cruces, Rio Nuevo, Alto de Mairana, Mairana	85	Abasto	80	- nearest wholesale market
			Other markets in St. Cruz		
			Cochabamba	20	
Lettuce	La Yunga, La Colpa, Rio Nuevo, Villa Sanisidro, Vella Vista	85	Abasto	95	- nearest wholesale market
			Other markets in St. Cruz	5	
			Cochabamba		
Peach	Mendiola, Vella Vista	85	Markets in St. Cruz	100	- mainly to Abasto
			Cochabamba		
Grape	La Yunga, Alto de Mairana, Vella Vista	85	Markets in St. Cruz	100	- mainly to Abasto
			Cochabamba		
Daily fluctuation of shipping volume:					
<ul style="list-style-type: none"> - Shipping is generally on 3 days in a week, Monday, Wednesday & Friday and marketing at market on next day; Tuesday, Thursday & Saturday. Shipping volume on other days is very limited. - Shipping volume is largest on Friday followed by Monday & Wednesday. 					
Other Related Information: No. of truck in municipal 90, mostly owned by producers, presently No. trucks is enough for shipment					

2. Prevailing Collection & Distribution Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm (or home) under shade Grading: 3 sizes in potatoes, tomato & fruits (large, medium & small); no grading of lettuce Others: washing to remove fine roots (carrot)
Packing	Potatoes: plastic bag (110kg) Tomato: wooden box (20kg) Fruits: wooden box (20kg) Lettuce, pepper, cauliflower: bamboo basket (25kg)
Collection & Shipping System	<p>Harvesting: 1 day prior to shipment; in case of lettuce at early morning of shipping day Collection & Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer</p> <pre> graph LR farm -- "(mostly manual)" --> farm_depot[farm depot or trunk roadside] farm_depot -- "(loading on 4 - 5t truck)" --> destination_markets[destination markets] </pre> <p>Shipment Time: Friday from 6am to 6pm, Monday from 2pm to 7pm & Wednesday from 4pm to 7pm</p> <p>Distribution System/Marketing Channel & Payment Terms:</p> <p>Primary Case:</p> <pre> graph LR farm_depot -- "in cash (5 - 8 hours after selling)" --> direct_selling[direct selling to wholesaler at market] direct_selling --- note["(sometimes sold to retailer/consumer)"] transporter[transporter + producer] </pre> <p>Secondary Case:</p> <pre> graph LR farm_depot -- "in cash (5 - 8 hours after selling)" --> direct_selling direct_selling --- note["(sometimes sold to retailer/consumer)"] producer[producer with own truck] </pre> <p>Tertiary Case:</p> <pre> graph LR farm_depot -- "in cash" --> wholesaler[wholesaler at market] wholesaler -- "intermediary (buyer)" --> farm_depot </pre>
Others	Market Information: from fellow producers returned from market In irrigated areas (vegetable growing areas), loading sites are at farm or close to farms. Distance to Destination Markets: Mairana ---- St. Cruz 137 km/4.0 hrs.; Mairana ---- Cochabamba 12.0 hrs.

3. Marketing of Cereals & Beans

Maize: almost all consumed locally including supply to corn flour mill in municipality

Beans: almost all commercialized; seed purpose & export through intermediary

Source: Information provided by producers, agriculture institutions & municipal office (JICA Study findings, 1998)

Table A.1.2-15 Features of Major Producing Areas: Marketing Aspects - Pampa Grande Area

1. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market Markets	%	
Potatoes	Los Negros, Pocay, Santa Rosa, Palmasola	90 seed potato procured	Abasto Other markets in St. Cruz Cochabamba	100	- nearest wholesale market - Cochabamba is largest potato producer
Tomato	Los Negros, Pocay, Santa Rosa, Palmasola	85	Abasto Cochabamba Others	90 10	- nearest wholesale market - small size products preferred in Cochabamba market
Lettuce	Los Negros, Pocay, Santa Rosa, Palmasola	85	Abasto Other markets in St. Cruz Cochabamba & others	40 60	- large demand from May-July in Cochabamba(trans-shipped to Lapatz partly)
Other Vegetables	Los Negros, Pocay, Santa Rosa, Palmasola	85	Abasto Markets in St. Cruz Cochabamba	80 20	- nearest wholesale market - Cochabamba when good market prices
Fruits	Los Negros, Pocay, Pampa Grande	85	Abasto Others(local market)	60 40	- production limited
Daily fluctuation of shipping volume: - Shipping to St. Cruz is concentrated on 2 days in a week, Monday & Friday and marketing at market on next day; Tuesday & Saturday and shipping volume on other days is low although shipment is carried out every day. - Shipping to Cochabamba is only on 2 days in a week, Tuesday & Friday and marketing at market on next day; Wednesday & Saturday.					
Other Related Information: too many trucks in municipality and mostly owned by producers In case of product volume limited, shipment together with other producers or carry to main road					

2. Prevailing Collection & Distribution Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm under shade Grading: 3 sizes in potatoes, tomato & watermelon(large, medium & small); 2 grades in fruits(citrus) & green pepper; no grading in others
Packing	Potatoes, onion & carrot: plastic bag(110kg) Tomato: wooden box(25kg) Fruits: wooden box(25kg) Lettuce & cauliflower: bamboo basket(30kg) Cabbage & watermelon: in bulk
Collection & Shipping System	Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Collection & Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer <div style="text-align: center;"> <pre> graph LR Farm[farm] -- "(mostly manual)" --> Depot[farm depot or trunk roadside] Depot -- "(loading on 5 - 6t truck)" --> Markets[destination markets] </pre> </div> <p>Shipment Time: departing in the afternoon/evening to arrive at market at previous night or early morning of selling day Distribution System/Marketing Channel & Payment Terms: Primary Case: farm depot or trunk road side -- in cash(6 - 8 hours after selling) --> direct selling to wholesaler at market (sometimes sold to retailer) transporter + producer Secondary Case: farm depot or trunk road side -- in cash(6 - 8 hours after selling) --> direct selling to wholesaler at market (sometimes sold to retailer) producer with own truck Tertiary Case: farm depot or trunk road side -- in cash --> wholesaler at market intermediary(buyer)</p>
Others	Market Information: from fellow producers returned from market In irrigated areas(vegetable growing areas), loading sites are at farm or close to farms. Producers have to sell directly to retailer/consumer in case when over supply and wholesaler not accept products. Sometime middlemen provide seed potatoes on conditions of selling products to them(not common). Distance to Destination Markets: Los Negros ---- St. Cruz 170km/5.5hrs.; Los Negros ---- Cochabamba 330km/11.5hrs.

3. Marketing of Cereals & Beans

Maize: intermediary(buyer) from Cochabamba coming to collect	Beans: almost all shipped to St. Cruz(for seed or export)
Source: Information provided by producers, agriculture institutions & municipal office(JICA Study findings,1998)	

Table A.1.2-16 Features of Major Producing Areas: Marketing Aspects - Comarapa Area

1. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market	%	
Potatoes	Rio Arriba, La Canada, San Juan del Potrero	80	Abasto	60	- market preference for variety Cochabamba Weicha variety St. Cruz: Holland variety
			Other markets in St. Cruz		
			Cochabamba	40	
Tomato	Rio Arriba, La Canada, San Juan del Potrero	85	Abasto	50	- seasonal market demand rainy season:80% to St. Cruz dry season:80% to Cochabamba
			Other markets in St. Cruz		
			Cochabamba	50	
Green Peas	Rio Arriba, La Canada, San Juan del Potrero	85	Abasto	80	
			Cochabamba	20	
Other Vegetables	Rio Arriba, La Canada, San Juan del Potrero	85	Abasto	50	
			Cochabamba	50	
Fruits		85	Abasto	50	
			Cochabamba	50	

Daily fluctuation of shipping volume:
 - Shipping of vegetables & fruits is generally on 2 days/week, Tuesday & Friday and selling on next day; Wednesday & Saturday
 - Shipping of potatoes is also concentrated on 2 days in a week, Tuesday & Friday. However, shipping on other days is also carried out.

Other Related Information:

2. Prevailing Collection & Distribution Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm under shade Grading: 3 sizes in potatoes, tomato, choclo & fruits(large, medium & small); no grading in green peas & strawberry
Packing	Potatoes, onion & carrot: plastic bag(110kg) Tomato: wooden box(25kg) Fruits: wooden box(25kg) Lettuce & cauliflower: bamboo basket(30kg) Cabbage & watermelon: in bulk
Collection & Shipping System	<p>Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Collection & Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer</p> <p style="text-align: center;"> </p> <p>Shipment Time: departing in the afternoon/evening to arrive at market at previous night or early morning of selling day</p> <p>Distribution System/Marketing Channel & Payment Terms:</p> <p>Primary Case: farm depot or trunk roadside → in cash(6 - 8 hours after selling) → direct selling to wholesaler at market (sometimes sold to retailer) transporter + producer</p> <p>Secondary Case: farm depot or trunk roadside → in cash(6 - 8 hours after selling) → direct selling to wholesaler at market (sometimes sold to retailer) producer with own truck</p> <p>Tertiary Case: farm depot or trunk roadside → in cash at field/after selling at market → wholesaler at market intermediary(consignee/buyer)</p>
Others	Market Information: from fellow producers returned from market & wholesaler at market by telephone In irrigated areas(vegetable growing areas), loading sites are at farm or close to farms. Sometime middlemen provide seed potatoes & farm inputs on conditions of sell products to them. Distance to Destination Markets: Comarapa ---- St. Cruz 245 km/7.0 hrs.; Comarapa ---- Cochabamba 258km/10hrs.

Source: Information provided by producers, agriculture institutions & municipal office(JICA Study findings,1998)

Table A.1.2-17 Features of Major Producing Areas: Marketing Aspects - San Isidro Area

1. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market	%	
Potatoes	San Isidro, Puluquina Arriba, El Tunal, Butron, Moco Moco, Puluquina Abajo	90 seed potato procured	Abasto	70	- Cochabamba areas have large production of potatoes & market demand is limited
			Other markets in St. Cruz		
			Cochabamba	30	
Tomato	San Isidro, Puluquina Arriba, El Tunal, Butron, Moco Moco, Puluquina Abajo	85	Abasto	30	- market price is rather stable in Cochabamba(trans-shipped to Lapatz)
			Other markets in St. Cruz		
			Cochabamba	70	
Onion	San Isidro, Puluquina Arriba, Puluquina Abajo	85	Abasto	100	- Cochabamba areas have large production of onion
			Cochabamba		
Choclo	San Isidro, Puluquina Arriba, Puluquina Abajo	85	Abasto	50	- to keep market prices at a certain level/alleviate marketing risks
			Cochabamba	50	
Peach		85	Abasto	50	- to keep market prices at a certain level/alleviate marketing risks
			Cochabamba	50	

Daily fluctuation of shipping volume:

- Shipping of potatoes, vegetables & fruits to St. Cruz is concentrated on 2 days in a week, Tuesday & Friday and selling at market on next day; Wednesday & Saturday, although shipping is carried out every day.
- Shipping to Cochabamba is generally only on 2 days in a week, Tuesday & Friday.

Other Related Information: too many trucks & mostly owned by producers

2. Prevailing Collection & Distribution Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm under shade Grading: 3 sizes in potatoes & tomato(large, medium & small); 4 sizes in peach; choclo in 2 sizes; no grading in onion
Packing	Potatoes, carrot & onion: plastic bag(100kg) Tomato: wooden box(20kg) Fruits: wooden box(20kg) Choclo: plastic bag(150-200pcs)
Collection & Shipping System	<p>Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day</p> <p>Collection Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer</p> <p>farm → farm depot or trunk roadside → destination markets (mostly manual/partly tractor) (loading on 10t truck)</p> <p>Shipment Time: departing in the afternoon/evening to arrive at market at previous night or early morning of selling day</p> <p>Distribution System/Marketing Channel & Payment Terms:</p> <p>Potatoes/onion/carrot: Primary Case: in cash(6 - 8 hours after selling) farm depot or trunk roadside → transporter + producer → direct selling to wholesaler at market (sometimes sold to retailer)</p> <p>Potatoes, onion/carrot: Secondary Case: in cash(6 - 8 hours after selling) farm depot or trunk roadside → producer with own truck → direct selling to wholesaler at market (sometimes sold to retailer)</p> <p>Other vegetable & fruits: Primary Case: in cash(6 - 8 hours after selling) farm depot or trunk roadside → transporter + producer → direct selling to wholesaler at market (sometimes sold to retailer)</p> <p>Other vegetable & fruits: Secondary Case: after selling at market farm depot or trunk roadside ← intermediary(consignee) → wholesaler at market</p> <p>Other vegetables & fruits: Thirdly Case: in cash(6 - 8 hours after selling) farm depot or trunk roadside → producer with own truck → direct selling to wholesaler at market (sometimes sold to retailer)</p>
Others	Market Information: from fellow producers returned from market & wholesaler at market by telephone In irrigated areas(vegetable growing areas), loading sites are at farm or close to farms. Sometime middlemen provide seed potatoes & farm inputs on conditions of sell products to them. Distance to Destination Markets: San Isidro ---- St. Cruz 223 km/6.5 hrs.; San Isidro ---- Cochabamba 10.5 hrs.

Source: Information provided by producers, agriculture institutions & municipal office(JICA Study findings,1998)

Table A.1.2-18 Features of Major Producing Areas: Marketing Aspects - Saipina Area

1. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market	%	
Potatoes	Banados, Chilon, Saipina, San Rafael	90 seed potato procured	Abasto	30	- large market demand in Cochabamba (transshipment to mining areas)
			Other markets in St. Cruz		
			Cochabamba	70	
Tomato	Banados, Chilon, Saipina, San Rafael	85	Abasto	5	- large market demand in Cochabamba (transshipment to mining areas)
			Other markets in St. Cruz		
			Cochabamba	95	
Onion	Banados, Chilon, Saipina, San Rafael	85	Abasto	100	- large production areas in Cochabamba
			Cochabamba		
Green Pepper	Banados, Chilon, Saipina, San Rafael	85	Abasto	50	- consumption/demand high in St. Cruz
			Markets in St. Cruz		
			Cochabamba	50	
Others	Banados, Chilon, Saipina, San Rafael	85	Abasto		
			Others(local market)	100	

Daily fluctuation of shipping volume:
 - Shipping of tomato & green pepper is generally on 2 days/week, Tuesday & Friday and selling on next day; Wednesday & Saturday
 - Shipping of potatoes & onion is carried out every day.

Other Related Information: potato shipment mostly by trucks from Cochabamba(consignee); most of transporters are also producers

2. Prevailing Collection & Distribution Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm under shade Grading: 3 sizes in potatoes; 2 sizes in tomato, onion & green pepper Others: washing to remove fine roots(carrot)
Packing	Potatoes & onion: plastic bag(100kg) Tomato: wooden box(23kg) Green pepper:plastic bag(23kg)
Collection & Shipping System	<p>Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Collection & Shipping Method: 1 to2 days before harvesting, arrange shipping schedule with transporter or buyer</p> <p>Prevailing system farm → (mostly manual) → farm depot or trunk roadside → (loading on 10-15t truck on Tues/Fri.) (loading on 4 - 5t truck on other days) → destination markets</p> <p>Minor system farm → loading site → 1 - 2t truck → transshipment at Saipina → 10 - 15t truck → destination markets</p> <p>Shipment Time: departing in the afternoon/evening to arrive at market at previous night or early morning of selling day Distribution System/Marketing Channel & Payment Terms:</p> <p>Primary Case: farm depot or trunk roadside → 2 days after delivery → wholesaler at market middleman(consignment)</p> <p>Secondary Case: farm depot or trunk roadside → in cash(6 - 8 hours after selling) → direct selling to wholesaler at market (sometimes sold to retailer) transporter + producer</p> <p>Tertiary Case: farm depot or trunk roadside → in cash(6 - 8 hours after selling) → direct selling to wholesaler at market (sometimes sold to retailer) producer with own truck</p>
Others	Market Information: from fellow producers returned from market In irrigated areas(vegetable growing areas), loading sites are at farm or close to farms. Sometime middlemen provide seed potatoes & farm inputs on conditions of sell products to them. Distance to market: Saipina ----- St. Cruz 249 km/ 8.0 hrs. Saipina ----- Cochabamba 12hrs.

3. Marketing of Cereals & Beans

Beans: sold to intermediary

Source: Information provided by producers, agriculture institutions & municipal office(JICA Study findings,1998)

Table A.1.2-19 Features of Major Producing Areas: Marketing Aspects - Vallegrande Area

1. Major Producing Areas and Destination Markets by Commodity

Commodity	Major Producing Areas Village	Commercialization Rate(%) (Assumed)	Current Major Destination Markets		Reasons to Chose Destination Markets
			Destination Market Markets	%	
Potatoes	St. Rosita, Las Quevas, Huantas, Temporal	80	Abasto Cochabamba	100	- production of Holland variety not preferred in Cochabamba
Tomato	St. Rosita, Las Quevas, Huantas, Temporal	85	Abasto Cochabamba Others(local market)	95 5	- nearest wholesale market - road conditions poor to Cochabamba
Green Pepper	St. Rosita, Las Quevas, Huantas, Temporal	85	Abasto Cochabamba Others(local market)	95 5	- nearest wholesale market - road conditions poor to Cochabamba
Lettuce	St. Rosita, Las Quevas, Huantas, Temporal	85	Abasto Cochabamba Others(local market)	95 5	- nearest wholesale market - road conditions poor to Cochabamba
Fruits	Guadalupe, Chacopata, Est. Huaico	85	Abasto Cochabamba Others(local market)	75 25	- nearest wholesale market - road conditions poor to Cochabamba

Daily fluctuation of shipping volume:

- Shipping of fruits is generally on 2 days in a week, Tuesday & Friday; however plum is shipped everyday.
- Shipping of vegetables is generally on 2 days in a week, Tuesday & Friday; however plum is shipped everyday.
- Shipping of potatoes is normally on 2 days a week; Tuesday & Friday; however shipped every day when market prices are good.

Other Related Information: No. of trucks enough for shipment; transporters group exist but not functioning well; local transporters dominant

2. Prevailing Collection & Distribution Systems of Potatoes, Vegetables & Fruits

Selection & Grading	Location & method: manually at farm under shade Grading: 3 sizes in potatoes; 2 sizes in tomato & green pepper; no grading in fruits & lettuce
Packing	Potatoes & onion: plastic bag(100kg) Tomato: wooden box(22kg) Green pepper: plastic bag(30kg) Lettuce: bamboo basket(20-25kg) Apple: wooden box(50kg) Peach: wooden box(100kg) Plum: wooden box(25kg)
Collection & Shipping System	Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Collection & Shipping: 1 to 2 days before harvesting, arrange shipping schedule with transporter or buyer <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Prevailing system</p> <pre> graph LR A[farm] -- "(mostly manual)" --> B[farm depot or trunk roadside] B -- "(loading on 9t truck)" --> C[destination markets] </pre> </div> <div style="text-align: center;"> <p>Secondary system</p> <pre> graph LR A[farm] -- "4 - 5t truck" --> B[loading site] B -- "transshipment at Vallegrande" --> C[destination markets] </pre> </div> </div> <p>Shipment Time: departing in the afternoon/evening to arrive at market at previous night or early morning of selling day Distribution System/Marketing Channel & Payment Terms:</p> <p>Primary Case:</p> <pre> graph LR A[farm depot or trunk roadside] -- "40% in cash & the balance 3 days after delivery" --> B[wholesaler at market] B -- "intermediary(buyer)" --> A </pre> <p>Secondary Case:</p> <pre> graph LR A[farm depot or trunk roadside] -- "in cash(6 - 8 hours after selling)" --> B[direct selling to wholesaler at market] B -- "transporter + producer" --> A B -- "(sometimes sold to retailer)" --> C[retailer] </pre> <p>Tertiary Case(only for tomato marketing):</p> <pre> graph LR A[farm depot or trunk roadside] -- "3 days after delivery" --> B[wholesaler at market] B -- "intermediary(consignee)" --> A </pre>
Others	Market Information: from fellow producers returned from market In irrigated areas(vegetable growing areas), loading sites are at farm or close to farms. Sometime middlemen provide seed potatoes & farm inputs on conditions of sell products to them. Distance to market: Vallegrande ----- St. Cruz 241 km/7.0 hrs. Vallegrande ----- Cochabamba 12.0 hrs.

3. Marketing of Cereals & Beans

Maize: mostly consumed locally	Beans: sold to St. Cruz through intermediary(seed purpose etc.)
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Source: Information provided by producers, agriculture institutions & municipal office(JICA Study findings,1998)

Table A.1.2-20 Current Annual Marketing Volumes and Destination Markets of Fruits And Vegetables by Major Producing Areas (1997)

Commodity		Florida			Caballero			Vallegrande
		Samaipata	Mairana	Pampa Grande	Comarapa	San Isidro	Saipina	Vallegrande
Potatoes	Production(t)	5,170	1,680	3,600	3,190	6,000	7,480	9,900
	Commercialization(%)	80	80	90	80	90	90	80
	Marketing Volume(t)	4,136	1,344	3,240	2,552	5,400	6,732	7,920
	Destination Market: Share(%)							
	St. Cruz(%)	100	100	100	60	70	30	100
	Cochabamba(%)	0	0	0	40	30	70	0
	Local(%)	0	0	0				0
	Destination Market: Volume(t)							
	St. Cruz(t)	4,136	1,344	3,240	1,531	3,780	2,020	7,920
	Cochabamba(t)	0	0	0	1,021	1,620	4,712	0
Local(t)	0	0	0	0	0	0	0	
Tomato	Production(t)	1,050	1,650	4,080	1,700	3,740	7,310	1,500
	Commercialization(%)	85	85	85	85	85	85	85
	Marketing Volume(t)	893	1,403	3,468	1,445	3,179	6,214	1,275
	Destination Market: Share(%)							
	St. Cruz(%)	100	80	90	50	30	5	95
	Cochabamba(%)	0	20	10	50	70	95	0
	Local(%)	0	0	0	0	0	0	5
	Destination Market: Volume(t)							
	St. Cruz(t)	893	1,122	3,121	723	954	311	1,211
	Cochabamba(t)	0	281	347	723	2,225	5,903	0
Local(t)	0	0	0	0	0	0	64	
Other	Production(t)	1,150	3,200	6,900	1,050	6,220	1,700	500
	Commercialization(%)	85	85	85	85	85	85	85
Vegetables	Marketing Volume(t)	978	2,720	5,865	893	5,287	1,445	425
	Destination Market: Share(%)							
	St. Cruz(%)	100	100	70	60	60	70	95
	Cochabamba(%)	0	0	30	40	40	30	0
	Local(%)	0	0	0	0	0	0	5
	Destination Market: Volume(t)							
	St. Cruz(t)	978	2,720	4,106	536	3,172	1,012	404
	Cochabamba(t)	0	0	1,760	357	2,115	434	0
	Local(t)	0	0	0	0	0	0	21
	Fruits	Production(t)	1,900	2,500	1,300	400		
Commercialization(%)		85	85	85	85			85
Marketing Volume(t)		1,615	2,125	1,105	340	0	0	2,975
Destination Market: Share(%)								
St. Cruz(%)		90	100	60	50			75
Cochabamba(%)		0	0	0	50			0
Local(%)		10	0	40	0			25
Destination Market: Volume(t)								
St. Cruz(t)		1,454	2,125	663	170			2,231
Cochabamba(t)		0	0	0	170			0
Local(t)	162	0	442	0			744	
Total	Production(t)	9,270	9,030	15,880	6,340	15,960	16,490	15,400
	Commercialization(%)	82	84	86	82	87	87	82
	Marketing Volume(t)	7,621	7,592	13,678	5,230	13,866	14,391	12,595
	Destination Market: Share(%)							
	St. Cruz(%)	98	96	81	57	57	23	93
	Cochabamba(%)	0	4	15	43	43	77	0
	Local(%)	2	0	3	0	0	0	7
	Destination Market: Volume(t)							
	St. Cruz(t)	7,460	7,311	11,130	2,959	7,906	3,342	11,766
	Cochabamba(t)	0	281	2,106	2,270	5,960	11,049	0
Local(t)	162	0	442	0	0	0	829	

Source: Results of study by JICA Study Team, 1998

Table A.1.2-21 Major Agriculture Facilities related with Present Study in Major Producing Areas

Major Producing Areas	Facility	Constructed	Possession	Capacity	Operation & Management	Use/Remarks
Samaipata Area	Collection facility	1985	ASOHRUT		ASOHRUT	Rented out for storage of food stuff under PAIS program
	Fruit processing facility (only building)	1994	ASOHRUT		ASOHRUT	Not used; trial production of fruit jam & marmalade in 1996 under the guidance of JOCV
	Local open market	-	Municipal government		Municipal government	Opened daily
Mairana Area	Corn flour mill	1978	Private	400 t/day	Private	Commercial operation
	Tobacco collection center	-	Private	-	Private	Operation from April to July
	Municipal market	1978	Municipal government	2900m ²	Municipal government	Open mainly on Sunday; presently under renovation
Pampa Grande Area	Wheat seed processing facility	-	Private	-	Private	Commercial operation
	Local open market	-	Municipal government	-	Municipal government	Daily; operation started in August 1998
	Municipal market	1999	Municipal government	130 plots	Municipal government	2 story building in Los Negros; construction suspended because of objection of residents of Los Negros
Comarapa Area	Municipal market	-	Municipal government	-	Municipal government	Daily
	Warehouse	-	EMCA	-	EMCA	Storage of farm inputs
San Isidro Area	Collection facility	1983	PETHOSAN		San Isidro sub-municipality	Not used; originally constructed for tomato processing use of facility entrusted to San Isidro in 1993 for 5 years
	Municipal market	-	Municipal government	-	Municipal government	Daily
Sapina Area	Local open market	-	Municipal government	-	Municipal government	Daily; operation started in August 1998
	Municipal market	-	Municipal government	-	Municipal government	Daily
Vallegrande Area	Brown sugar processing facility	-	Individual		Individual	About 30 in total
	Farmers market(retail market)	1993	Municipal government	800m ²	Municipal government	Saturday & Sunday
	Local open market	-	Municipal government	-	Municipal government	Daily; 2 markets in municipal

Source: Information provided by representatives of producers, agriculture institutions & municipal offices(JICA Study findings, 1998)

Table A.1.4-1 Outline of the City Infrastructure of Target Area in Valley Area (Florida, Caballero, Valle Grande)

Items	Canton	Samalapa	Mairana	Pampa Grande	San Isidro	Comarapa	Salpina	Valle Grande
1 Potable Water		Well water, Capacity : 259 ton/day (dry season), 778 ton/day (rainy season) / Night time cutoff in high land area (dry season)	Well water Capacity : 672 ton/day, Demand : 500 ton/day	No information	No service. River water is available	River water, no counter machine for volume measure	River water, no counter machine for volume measuring.	River water, Capacity : 1,470 ton/day, Demand : 840 ton/day. Excess water is supplied to neighboring Cantons.
2 Electric Supply		24,000V from CRE-Mataral, 380V (3-phase), 220V (1-phase)	24,000V from CRE-Mataral, 380V (3-phase), 220V (1-phase)	High voltage line 24,000V, 220V (1-phase)	High voltage line 24,000V, 380V (3-phase), 220V (1-phase)	24,000V from CRE-Mataral, 380V (3-phase), 220V (1-phase)	High voltage line 24,000V, 380V (3-phase), 220V (1-phase), Maintenance blackout : once/year	24,000V from CRE-Mataral, 380V (3-phase), 220V (1-phase)
3 Telephone Service		COTAS, 216 existing private lines	COTAS, 216 private lines (and 99 spare lines)	COTAS, 10 existing private lines in Pampa Grande, no detail for Los Negros.	ENTEL cabin, no private lines	COTAS, 150 private lines	COTAS and ENTEL, (terminal station is no functioning now - Satellite system - no wiring)	ENTEL, 350 existing private lines, 350 more lines will be installed in 1999.
4 Wasted Water Treatment		Drainage system only for urban area, 4 aeration tanks (total 20,000 ton)	No service. Discharging to road, Pit latrine.	No service. Seepage pit, Pit Latrine.	No service. Seepage pit, Pit Latrine.	No service. Discharging to river	No service.	Drainage system for urban area, 6 aeration tanks (total 172,800 ton)
5 Garbage Collection Service		8ton truck, 2 times/week (16 ton/week), Dump area : 10ha	Pickup truck, 1 time/week (5 ton/week), Dump area : 1ha	3-4ton truck, 2 times/week (8 ton/week) only for Los Negros, Dump area : less than 1ha	No service.	8ton truck, 2 times/week (10-14 ton/week), Dump area : anywhere available (no specific area)	8ton truck, 2 times/week (6 ton/week), Dump area : anywhere available (no specific area)	8ton truck, every day (only markets 3 times/week), 32 ton/week, Dump area : 5ha

Table A.1.4-2. Outline of the Site Condition of Target Area in Valley Area (Florida, Caballero, Valle Grande)

Items	Canton	Samalapa	Maizana	Pampa Grande	San Isidro	Comarapa	Salpina	Valle Grande
1 Condition of Project Site proposed by Alcaldia for C/D Center								
1.1 Land Owner		Alternative 1) ASOHRUT Alternative 2) Municipal Alternative 3) Municipal	Association de Ganaderos (private land)	Pampa Grande Mayor (private land)	Canton San Isidro	Municipal	(private land)	Alternative 1) Municipal Alternative 2) Municipal
1.2 Location		Alternative 1) Along Route 4, 2km north from Plaza Alternative 2) Old butcher facilities, 1km south from Plaza Alternative 3) Old school facilities, 1km north from Plaza	West end of urban area, along Route 4	1.5 km south from Los Negros, along Route 4, Pampa Grande city area	500m north from ASOHRUT/CIA T office, existing PETHOSAM facilities	650m south-east from Plaza	600m east from Plaza, almost city boundary area near public cemetery	Alternative 1) 0.6km east from Plaza, city boundary area near football stadium Alternative 2) 0.6km east from Plaza, city boundary area
1.3 Total Land Area		Alternative 1) 0.28ha Alternative 2) 0.24ha Alternative 3) 0.34ha	1ha out of 4ha	40-50ha	0.79ha	0.66ha	10-20ha	Alternative 1) 2.8ha Alternative 2) 0.25ha
1.4 Land Surface		Alternative 1) Flat, 2 existing facilities Alternative 2) Slope, 1 existing facilities Alternative 3) Flat, 4 existing facilities	Flat, cattle farming area	Hill foot, moderate Slope	Flat, 6 existing facilities for agri-products	Flat, 2 existing facilities under construction, but abandoned	Flat	Alternative 1) Moderate slope Alternative 2) Moderate slope
1.5 Infrastructure		Alternative 1) Electricity (E), Water (W), Wireless transmitter, Drainage (D) Alternative 2) E, W, T, 200m away from D line Alternative 3) E, W, T, 70m away from D line	No. 50m to E and Telephone(T) line, 200m away from W line frequency: SUB 7382	E, W, T	E, W (existing river water supply pump/line)	E, W (service time: 05:00-12:00), 20m away from T,	No. 250m away from E line, 160m away from W line	Alternative 1) E, W, T Alternative 2) E, W, D, 50m away from T line
1.6 Surroundings		Alternative 1) Residences and small shop Alternative 2) Residential area Alternative 3) Residential area	Traffic police station, residential area	Cattle farming area	Football playground, residence	Residence, cattle farming area	beside public cemetery	Alternative 1) Stadium, residence, small airport Alternative 2) Residences
1.7 Land Price		Alternative 1) no information Alternative 2) 13-16 \$/m2 Alternative 3) 13-16 \$/m2	0.80 \$/m2	0.25 \$/m2	0.6 \$/m2	1.50 \$/m2	2.49 \$/m2	Alternative 1) 6.0 \$/m2 Alternative 2) 6.0 \$/m2
2 Existing Facilities for Agri-products by CORDECruz or ASOHRUT								
2.1 Building Ages		6 years (1992)			14 years (1984)			
2.2 Construction cost		80,000 US\$			300,000 US\$			
2.3 Loan Source		Fond Social de Emergencia, ASOHRUT	2 facilities approx. 390/m2		Cordecruz (75%), ASOHRUT (25%)	6 facilities approx. 1,479/m2		
2.4 Building Owner		ASOHRUT (1992-1998)			Cordecruz (1984), Canton San Isidro (1991)			
2.5 Land Owner		ASOHRUT (1992-1998)			Canton San Isidro (1984-1998)			
2.6 Building Functions		Original function: jam processing facilities / Now, food storage for "Programa Pals" (ex-Prodecruz)			Original function: tomato canning processing plant (PETHOSAM) / Now, no function			

Tabla A.1.4-3 Characteristics Evaluation of each area for Products C/D Center (Summarized Table)

	Ranking of each target area for the criteria						
	Samapata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipina	V. Grande
1 Production & Supply Potential (production/target collection volume, position of target area in agriculture development's framework, potential for production expansion)			2	2	2	1	2
3 Possibility for Adaptation of Proposed Transshipping Method (presence of transshipment, employment ratio of local transporters, presence of transporters cooperative)	2				1	2	2
4 Beneficiaries (owner farmers ratio, no. of beneficiaries, illiteracy ratio)	4		4	1	4	1	1
7 Project Evaluation (economic/financial reliabilities, income redistribution)				1	3	1	4
2 Possibility for Organizing Farmers (farmers intention to participate in cooperative collection/distribution, presence of current farmers cooperative activities, presence of current water management association)	2	2	2	2	2	2	1
8 Effective Technology Transfer to the related persons		1	2	2	2		
6 Environmental Impact Assessment (social impact to the related persons, environmental impact)	1	1	1	1	1	1	1
5 Site Condition (accessibility to C/D Center from farms, existing facilities available for C/D Center, reliability of land acquisition, necessity of large scale land preparation, infrastructure condition)	1			2	4		3

1st Group :
 * high potential for production/supply volume / * high possibility for adaptation of transshipping method / * high (comparative high) beneficiaries

3rd Group
 * low potential for production/supply volume
 * high possibility for adaptation of transshipping method
 * low beneficiaries

4th Group
 * low potential for production/supply volume
 * low possibility for adaptation of transshipping method
 * low beneficiaries

2nd Group
 * high potential for production/supply volume
 * low possibility for adaptation of transshipping method
 * high-medium beneficiaries

Remark :

The numbers showed in this table indicate each target area's ranking considering 7 target areas for each Criteria. Therefore the lesser the number becomes, the more positive evaluation the target area gets in the Criteria.

Tabla A.1.4-3 Characteristics Evaluation of each area for Products C/D Center (Summarized Table)

	Ranking of each target area for the criteria						
	Samsipata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipion	V. Grande
1 Production & Supply Potential (production/target collection volume, position of target area in agriculture development's framework, potential for production expansion)			2	2	2	1	2
3 Possibility for Adaptation of Proposed Transshipping Method (presence of transshipment, employment ratio of local transporters, presence of transporters cooperative)	2				1	2	2
4 Beneficiaries (owner farmers ratio, no. of beneficiaries, illiteracy ratio)	4		4	1	4	1	1
7 Project Evaluation (economic/financial reliabilities, income redistribution)				1	3	1	4
2 Possibility for Organizing Farmers (farmers intention to participate in cooperative collection/distribution, presence of current farmers cooperative activities, presence of current water management association)	2	2	2	2	2	2	1
8 Effective Technology Transfer to the related persons		1	2	2	2		
6 Environmental Impact Assessment (social impact to the related persons, environmental impact)	1	1	1	1	1	1	1
5 Site Condition (accessibility to C/D Center from farms, existing facilities available for C/D Center, reliability of land acquisition, necessity of large scale land preparation, infrastructure condition)	1			2	4		3

1st Group :
 * high potential for production/supply volume / * high possibility for adaptation of transshipping method / * high (comparative high) beneficiaries

3rd Group

- * low potential for production/supply volume
- * high possibility for adaptation of transshipping method
- * low beneficiaries

4th Group

- * low potential for production/supply volume
- * low possibility for adaptation of transshipping method
- * low beneficiaries

2nd Group

- * high potential for production/supply volume
- * low possibility for adaptation of transshipping method
- * high-medium beneficiaries

Remark :

The numbers showed in this table indicate each target area's ranking considering 7 target areas for each Criteria. Therefore the lesser the number becomes, the more positive evaluation the target area gets in the Criteria.

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (1/8)

Criteria	Sub-criteria	Scores for evaluation			Score of each target area							
		Large	Medium	Small	Samaipata	Mairana	Pampa Grande	San Isidro	Comarapa	Sajpina	V. Grande	
1 Production & Supply Potential	1.1 Production & target collection volume	3	2	1	2	2	3	3	2	3	3	
		Designated		Not designated	3	3	3	3	3	3	3	3
		3		1								
	1.2 Position as target area for agriculture development	Exist / Plan	Under Preparation	Not exist	1	2	2	2	3	3	2	
		3	2	1	6	7	8	8	8	9	8	
		(Score sub-total)										
(Ranking of each target area for this criteria)												
7 6 2 2 2 2 2 1 2												

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (2/8)

Criteria	Sub-criteria	Scores for evaluation			Score of each target area						
		Exist	Not exist	1	Samaipata	Mairana	Pampa Grande	San Isidro	Comarapa	Sajpina	V. Grande
2 Possibility for Organizing Farmers	2.1 Current farmers cooperative activities	Exist	Not exist	1	3	1	1	1	1	1	3
		3	1								
		Exist	Not exist		1	3	3	3	3	3	3
(Score sub-total)											
4 4 4 4 4 4 4 4 4 4 6											
(Ranking of each target area for this criteria)											
2 2 2 2 2 2 2 2 2 2 1											

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (3/8)

Criteria	Sub-criteria	Scores for evaluation					Score of each target area				
		Exist	Under Preparation	Not exist	Samalpata	Mairana	Pampa Grande	San Isidro	Comarapa	Sajpina	V. Grande
3 Possibility for Adaptation of Proposed Trans-shipping Method (transshipment at C/D center)	3.1 Transshipment in current shipping method	3	2	1	1	1	1	3	3	3	3
	3.2 Employment ratio of local transporters in current shipment	More than 50% of crops	More than 25% of crops	0-25% of crops	3	3	3	3	3	3	3
	3.3 Current transporters cooperatives	Exist	2	1	3	1	1	3	3	1	1
	(Score sub-total)	3	2	1	7	5	5	9	7	7	7
	(Ranking of each target area for this criteria)	2	5	5	2	5	5	1	2	2	2

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (4/8)

Criteria	Sub-criteria	Scores for evaluation					Score of each target area				
		More than 50%	More than 25%	0-25%	Samalpata	Mairana	Pampa Grande	San Isidro	Comarapa	Sajpina	V. Grande
4 Beneficiaries	4.1 Owner farmers ratio	3	2	1	3	3	3	3	3	3	3
	4.2 Farmers intention to participate in cooperative collection and distribution	Exist		Not exist	3	3	3	3	3	3	3
	4.3 No. of beneficiaries	Large	Medium	Small	1	1	2	3	1	3	3
4.4 Illiteracy ratio	More than 17%	Approx. equal to 17%	Less than 17%	3	1	2	3	3	3	3	3
		3	2	1	10	8	10	12	10	12	12
	(Score sub-total)	4	7	4	4	7	4	1	4	1	1
	(Ranking of each target area for this criteria)										

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (3/8)

Criteria	Sub-criteria	Scores for evaluation					Score of each target area				
		Easy / Effective	Medium	Not easy / Ineffective	Sanzapata	Mairana	Punpa Grande	San Isidro	Comarapa	Salpina	V. Grande
5 Site Condition	5.1 Accessibility from feeder road in production area	3	2	1	2	3	2	1	3	2	
	5.2 Possibility of actual practical use of existing facilities after rehabilitation	Possible		Not possible		3	1	1	1	1	
	5.3 Reliability of land acquisition (*1) (*2)	3		1		3	1	1	3	3	
	5.4 Necessity of large scale land-cut, filling, bank protection, and etc. for land preparation	Not necessary	A little works required	Necessary		3	3	2	3	3	
	5.5 Condition of infrastructure (electricity, potable water, sewage, telephone, garbage collection)	Equipped with 4 items or more	Equipped with E and W or more item	Equipped with only 1 item or no item		3	1	2	3	1	
(Score sub-total)		3	2	1		14	9	8	13	9	
(Ranking of each target area for this criteria)						1	5	7	2	4	

*1 : In case that the land owner of project site is ASOFRUT, this site is classified to the public land.

*2 : In case that one target area has a few alternatives, the best one is selected considering the site condition, i.e. project site No. 1 is selected in Samzapata, and project site No. 1 in Valle Grande.

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (6/8)

Criteria	Sub-criteria	Scores for evaluation					Score of each target area							
		Large	Medium	Small	Large	Medium	Small	Samaipata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipina	V. Grande
6 Environmental Impact Assessment	6.1 Social Impact (Large positive impact-Medium-Small positive impact)													
	(1) To small scale farmers	3	2	1	3	3	2	2	3	2	2	3	3	3
	(2) To women engaged in small scale transportation works	3	2	1	3	3	2	2	3	2	2	3	3	3
	(3) To large scale farmers	3	2	1	3	3	2	2	3	2	2	3	3	3
	(4) To local transporters	3	2	1	3	3	2	2	3	2	2	3	3	3
	(5) To local intermediates	3	2	1	3	3	2	2	3	2	2	3	3	3
	(6) To dealers of consumption area	3	2	1	3	3	2	2	3	2	2	3	3	3
(7) To neighboring inhabitants	3	2	1	3	3	2	2	3	2	2	3	3	3	
6.2 Environmental Impact (Small negative impact-Medium-Large negative impact)														
(1) Noise pollution	Small	Medium	Large	Small	Medium	Large	1	1	1	1	1	1	1	1
(2) Air pollution	Small	Medium	Large	Small	Medium	Large	1	1	1	1	1	1	1	1
(3) Water pollution	Small	Medium	Large	Small	Medium	Large	3	3	3	3	3	3	3	3
(4) Soil pollution	Small	Medium	Large	Small	Medium	Large	3	3	3	3	3	3	3	3
(5) Garbage / Dust	Small	Medium	Large	Small	Medium	Large	2	2	2	2	2	2	2	2
(Score sub-total)		25	25	25	25	25	25	25	25	25	25	25	25	25
(Ranking of each target area for this criteria)		1	1	1	1	1	1	1	1	1	1	1	1	1

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (7/8)

Criteria	Sub-criteria	Scores for evaluation					Score of each target area						
		Large	Medium	Small			Samapata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipina	V. Grande
7 Project Evaluation	(1) Economic reliability	Large	Medium	Small			1	1	1	3	3	3	1
		3	2	1									
		Large	Medium	Small			2	1	2	3	2	3	3
(2) Financial reliability	Large	Medium	Small			2	2	2	2	2	2	2	
		3	2	1									
		Large	Medium	Small			2	2	2	2	2	2	2
(3) Income redistribution	Large	Medium	Small			5	4	5	8	7	8	6	
		3	2	1									
		Large	Medium	Small			5	7	5	1	3	1	4
		(Score sub-total)											
		(Ranking of each target area for this criteria)											

Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (8/8)

Criteria	Sub-criteria	Scores for evaluation					Score of each target area						
		Effective	Medium	Not effective			Samapata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipina	V. Grande
8 Effective Technology Transfer	(1) To small scale farmers	Effective	Medium	Not effective			1	3	2	1	1	1	1
		3	2	1									
		Effective	Medium	Not effective			1	2	1	1	1	1	1
	(2) To women engaged in small scale transportation works	Effective	Medium	Not effective			2	2	2	3	3	2	2
		3	2	1									
		Effective	Medium	Not effective			2	2	2	2	2	2	2
(3) To large scale farmers	Effective	Medium	Not effective			2	2	2	2	2	2	2	
	3	2	1										
	Effective	Medium	Not effective			2	2	2	2	2	2	2	
(4) To local transporters	Effective	Medium	Not effective			1	1	1	1	1	1	1	
	3	2	1										
	Effective	Medium	Not effective			9	12	10	10	10	9	9	
(5) To local intermediates	Effective	Medium	Not effective			5	1	2	2	2	5	5	
	3	2	1										
	Effective	Medium	Not effective										
(6) To dealers of consumption area	Effective	Medium	Not effective										
	3	2	1										
	Effective	Medium	Not effective										
		(Score sub-total)											
		(Ranking of each target area for this criteria)											

Table A.1.4-5. TARGET AREAS OF PRODUCTS COLLECTION

		Target Areas for Collection			
		Principal Areas			
		Estimated Area(Net Irrigated Areas)			
Target Collection Area	Areas	Base Year & 2000	2005	2010	Other Areas
Samapata Collection Area	- Irrigated areas in Samapata municipality	340	340	340	Other fruit growing areas
Mairana Collection Area	- Irrigated areas along the Mataral river (Filadelfia/Mendiola Irrigation Project)	400	400	400	Other fruit growing areas
	- Area along Quirusillas river	80	80	80	
	Total	480	480	480	
Pampa Grande Collection Area	- Irrigated areas in Los Negros	650	650	650	Other fruit growing areas
	- Other irrigated areas in Pampa Grande Municipality	190	190	190	
	- Irrigated areas in San Juan del Potrero	150	150	180	
	Total	990	990	1,020	
Comarapa Collection Area	- Rio Arriba / Comarapa	190	190	190	Other fruit growing areas
	- La Canada Irrigation Project	150	150	150	
	- Banados Irrigation Project	220	220	220	
	- La Pista(newly irrigated area)	0	260	260	
	Total	560	820	820	
San Isidro Collection Area	- Irrigated areas in San Isidro and Pulquina Canton				
	(Pulquina Arriba Irrigation Project)	270	270	270	
	(Moco Moco Irrigation Project)	35	35	35	
	(El Tunal Irrigation Project)	45	45	45	
	(San Isidro Irrigation Project)	530	530	530	
	(Pulquina Abajo Irrigation Project)	130	130	130	
	(Butron Irrigation Project)	90	90	90	
	Total	1,100	1,100	1,100	
Saipina Collection Area	- Irrigated areas along Comarapa river				
	(Chilon/Montegrande Irrigation Project)	810	810	810	
	(Saipina/San Rafael Irrigation Project)	380	380	380	
	(San Rafael/newly irrigated area)	0	265	265	
	Total	1,190	1,455	1,455	
Vallegrande Collection Area	- Irrigated areas in Vallegrande municipality	1,000	1,000	1,250	Other fruit growing areas Other potato growing areas

File:Tab A.1.4-5

Table A.1.4-6. PROPOSED DEVELOPMENT SCHEDULE OF C/D CENTERS

Collection Center/Development Step	Year					
	1999	2000	2001	2002	2003	2004
San Isidro C/D Center (Pilot Project)						
Steering Committee for Development	██████████	██████████				
Trial Operation at PETHOSAM Facility	██████████	██████████				
Institutional Training to Potential Users	██████████					
Guidance & Organization of Users Groups		-----	-----	-----	-----	-----
Construction		██████████				
Operation & Management Arrangement		██████████				
Steering Committee for O&M		██████████	██████████	██████████	██████████	██████████
Preparatory Stage	-----					
Operation Stage			-----	-----	-----	-----
Samaipata C/D Center						
Steering Committee for Development			██████████	██████████		
Trial Operation at Existing Facility			██████████	██████████		
Institutional Training to Potential Users			██████████	██████████		
Guidance & Organization of Users Groups				-----	-----	-----
Construction				██████████		
Operation & Management Arrangement				██████████		
Steering Committee for O&M				██████████	██████████	██████████
Preparatory Stage			-----	-----	-----	-----
Operation Stage					-----	-----
Vallegrande & Saipina C/D Centers						
Steering Committee for Development			██████████	██████████		
Institutional Training to Potential Users			██████████	██████████		
Guidance & Organization of Users Groups				-----	-----	-----
Construction				██████████		
Operation & Management Arrangement				██████████		
Steering Committee for O&M				██████████	██████████	██████████
Preparatory Stage			-----	-----	-----	-----
Operation Stage					-----	-----
Mairana, Pampa Grande & Comarapa C/D Center						
Steering Committee for Development				██████████	██████████	██████████
Institutional Training to Potential Users				██████████	██████████	██████████
Guidance & Organization of Users Groups					-----	-----
Construction					██████████	
Operation & Management Arrangement					██████████	
Steering Committee for O&M					██████████	██████████
Preparatory Stage				-----	-----	-----
Operation Stage						-----

File: Tab A.1.4-6

Table A.1.4-7. ASSESSMENT OF READINESS FOR DEVELOPMENT OF C/D CENTER - 1/2

Assessment Criteria	Target Collection Area		
	Samaipata Collection Area	Mairana Collection Area	Pampa Grande Collection Area
1. Existence of Facility for Use as C/D	ASOFRUT collection facility	Not Available	Not Available
2. Production Volumes of Target Commodities at Full Operation Stage(t)	11,100	10,100	19,900
3. Currently Prevailing Marketing System	Farmers direct marketing to ABASTO	Farmers direct marketing to ABASTO	Farmers direct marketing to ABASTO
4. Results of Discussion Meeting	Consensus obtained among participants at the meeting held on Nov. 20	Consensus obtained among participants at the meeting held on Nov. 19	No consensus obtained among participants at the meeting held on Nov. 20
5. Coverage of Existing Farmers Organization	ASOFRUT : registered member 170 AGROPLAN: about 90 members	ASOFRUT : registered member 111	ASOFRUT : registered member 234
6. Activities of Supporting organization & Intention of Local Government Identified through 3 Discussion Meeting Held at Municipal	Municipal government has strong intention to promote fruit production and to establish C/D	Municipal government has strong intention to establish C/D	Municipal government support C/D
7. Existence of Movement for Cooperative Marketing	AGROPLAN(about 90 memebres) directly shipping commodities produced under organic farming to St. Cruz(supermarket etc.)	-	Influence of Farmers Market Project appears to be substantial(negative to C/D) Social conflict between Pampa Grande and Los Negros community(negative factor)
8. Construction Costs per Ton of Products Collected at Full Operation Stage(US\$/t)	9.5 (San Isidro: US\$ 8.0/t)	68.3	51.2
Overall Assessment	1st Phase Development	2nd Phase Development	2nd Phase Development

File: Tab A.1.4-7

Table A.1.4-7. ASSESSMENT OF READINESS FOR DEVELOPMENT OF C/D CENTER - 2/2

Assessment Criteria	Caballero Province		Target Collection Area		Vallegrande Province
	Comarepa Collection Area	No	Saipina Collection Area	No	
1. Existence of Available Facility		No		No	
2. Production Volumes of Target Commodities at Full Operation Stage(t)	12,600		21,700		21,900
3. Currently Prevailing Marketing System	Farmers direct marketing to ABASTO & Cochabamba		Consignment marketing to Cochabamba (highly positive factor to use of C/D)		Seeking to intermediary at site (destination: ABASTO)
4. Results of Discussion Meeting	Consensus obtained among participants at the meeting held on Nov. 27		Consensus obtained among participants at the meeting held on Nov. 27		Consensus obtained among participants at the meeting held on Nov. 27
5. Coverage of Existing Farmers Organization	All products in target collection areas (irrigated areas) organized into water users associations, however, conflict between Lapisa area(newly irrigated area) & others areas for water distribution Municipal government support C/D		All products in target collection areas (irrigated areas) organized into water users associations Municipal government support C/D		ASOFRUT : registered member 61 CAPA(all vallegrande prov.): 700
6. Activities of Supporting organization & Intention of Local Government					Municipal government has strong intention to promote fruit production and to establish C/D ICO will provide technical support
7. Existence of Movement for Cooperative Marketing & Others	EMCA president was reluctant to take management role of C/D in Saipina, while manager accepted the role. Need to have consensus among members.		All the representatives of water users associations supported C/D center		Establishment of FDF(Fundacion para el Desarrollo Fruticola de la Provincia) planned by initiative of ICO CAPA has intention & plan
8. Construction Costs per Ton of Products Collected at Full Operation Stage	57.0 (San Isidro: US\$ 8.5/t)		36.9		32.7
Overall Assessment	2nd Phase Development		1st Phase Development		1st Phase Development

Table A.1.4-8.

**PROJECTED CROPPED AREA AND CROP PRODUCTION IN 2005 UNDER
WITH IRRIGATION DEVELOPMENT PROJECTS: COMARAPA & SAIPINA**

Crops	Comarapa Area				Saipina Area			
	Overall		Target Commodities		Overall		Target Commodities	
	Cropped Area (ha)	Production (t)	Cropped Area (ha)	Production (t)	Cropped Area (ha)	Production (t)	Cropped Area (t/ha)	Production (t)
1. Root Crop								
Potatoes	440	4,840	440	4,840	940	10,340	940	10,340
2. Vegetables								
Tomato	150	2,550	150	2,550	580	9,860	580	9,860
Green Pepper	100	1,200	100	1,200				
Others	250	1,250	250	1,250	470	2,350	470	2,350
Sub-total	500	5,000	500	5,000	1,050	12,210	1,050	12,210
3. Fruits	40	400	40	400	0	0	0	0
4. Others								
Sugarcane	n.a.	n.a.			350	21,000		
Others	n.a.	n.a.			n.a.	n.a.		
Sub-total			0	0	350	21,000	0	0
Total	980	10,240	980	10,240	1,990	22,550	1,990	22,550

Remarks 1: Assumed as follows;
- All potatoes & vegetables cultivated under irrigation
- Cropping pattern under irrigation: potato 45 %, tomato 15%, green pepper 10%, fruit 5 %, others 25 %
- Cropping intensity in irrigated area: about 130 % of irrigated areas(750ha)

Remarks 2: Target Commodities: Commodities for collection under the present study

Remarks 3:
"Others" in 2. Vegetables represented by pea/bean.

Remarks 4: "Others" in 3. Fruits represented by peach

Remarks 5: Assumed as follows;
- All potatoes & vegetables cultivated under irrigation
- Cropping pattern under irrigation: potato 40 %, tomato 25%, sugarcane 15%,others vegetables 20 %
- Cropping intensity in irrigated area: about 140 % of irrigated areas(1,675ha)

Remarks 6: Target Commodities: Commodities for collection under the present study

Remarks 7:
"Others" in 2. Vegetables represented by pea/bean.

Source: Data presented by PRICRUZ

File: Tab A.1.4-8 & 9

Table A.1.4-9.

**PROJECTED CROPPED AREA AND CROP PRODUCTION IN 2010 UNDER
WITH IRRIGATION DEVELOPMENT PROJECTS: COMARAPA & VALLEGRANDE**

Crops	Comarapa Area				Vallegande Area			
	Overall		Target Commodities		Overall		Target Commodities	
	Cropped Area (ha)	Production (t)	Cropped Area (ha)	Production (t)	Cropped Area (ha)	Production (t)	Cropped Area (t/ha)	Production (t)
1. Root Crop								
Potatoes	450	5,400	450	5,400	950	11,400	950	11,400
2. Vegetables								
Tomato	160	3,040	160	3,040	150	2,550	150	2,550
Green Pepper	100	1,300	100	1,300				
Others	250	1,500	250	1,500	200	2,200	200	2,200
Sub-total	510	5,840	510	5,840	350	4,750	350	4,750
3. Fruits								
Peach					180	1,980	180	1,980
Plum					80	880	80	880
Others	50	550	50	550	260	2,860	260	2,860
Sub-total	50	550	50	550	520	5,720	520	5,720
4. Others								
Sugarcane	n.a.	n.a.			190	8,360		
Others	n.a.	n.a.			n.a.	n.a.		
Sub-total			0	0	190	8,360		0
Total	1,010	11,790	1,010	11,790	2,010	30,230	1,820	21,870

Remarks 1: Assumed as follows;
- All potatoes & vegetables cultivated under irrigation
- Cropping pattern under irrigation: potato 45 %, tomato 15%, green pepper 10%, fruit 5 %, others 25 %
- Cropping intensity in irrigated area: about 130 % of irrigated areas(780ha)

Remarks 2: Target Commodities: Commodities for collection under the present study

Remarks 3:
"Others" in 2. Vegetables represented by pea/bean.

Remarks 4: "Others" in 3. Fruits represented by peach

Remarks 5: Assumed as follows;
- All vegetables cultivated under irrigation
- Cropped areas of fruits: peach 35%, plum 15%, apple 20% others 30 %
- Cropping pattern under irrigation: potato 35 %, tomato 10%, sugarcane 13%, others vegetables 14 %, fruits 28 %
- Cropping intensity in irrigated area: about 115 % of irrigated areas(1,250ha)
- Under rainfed: potato 450ha & fruit 120 ha

Remarks 6: Target Commodities: Commodities for collection under the present study

Remarks 7: "Others" in 2. Vegetables represented by pea/bean

Source: Data presented by PRICRUZ

File: Tab A.1.4-8 & 9

Table A.1.4-10. COMMERCIALIZATION RATES AND TARGET COLLECTION RATES ASSUMED

Collection Area/Commodity	1st Year of Operation			2nd Year of Operation			3rd Year of Operation			4th Year of Operation			5th Year of Operation & after		
	Rates(%)			Rates(%)			Rates(%)			Rates(%)			Rates(%)		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1. San Isidro Collection Area															
Potatoes	90	30	27	90	40	36	90	50	45	90	60	54	90	70	63
Vegetables	85	30	26	85	40	34	85	50	43	85	60	51	90	70	63
Fruits	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Samaipata Collection Area															
Potatoes	80	20	16	80	30	24	80	40	32	80	50	40	85	60	51
Vegetables	85	20	17	85	30	26	85	40	34	85	50	43	90	60	54
Fruits	85	20	17	85	30	26	85	50	43	85	70	60	90	80	72
3. Vallegrande Collection Area															
Potatoes	80	20	16	80	30	24	80	40	32	80	50	40	85	60	51
Vegetables	85	30	26	85	40	34	85	50	43	85	60	51	90	70	63
Fruits	85	30	26	85	40	34	85	50	43	85	60	51	90	70	63
4. Saipina Collection Area															
Potatoes	90	30	27	90	40	36	90	50	45	90	60	54	90	70	63
Vegetables	85	30	26	85	40	34	85	50	43	85	60	51	90	70	63
Fruits	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Mairana Collection Area															
Potatoes	80	30	24	80	40	32	80	60	48	80	70	56	85	80	68
Vegetables	85	30	26	85	40	34	85	60	51	85	70	60	90	80	72
Fruits	85	30	26	85	40	34	85	60	51	85	70	60	90	80	72
6. Pampa Grande Collection Area															
Potatoes	90	20	18	90	30	27	90	50	45	90	60	54	90	70	63
Vegetables	85	20	17	85	30	26	85	50	43	85	60	51	90	70	63
Fruits	85	20	17	85	30	26	85	50	43	85	60	51	90	70	63
7. Comarapa Collection Area															
Potatoes	80	30	24	80	40	32	80	50	40	80	60	48	85	70	60
Vegetables	85	30	26	85	40	34	85	50	43	85	60	51	90	70	63
Fruits	85	30	26	85	40	34	85	50	43	85	60	51	90	70	63

Remarks: Rates(%) 1 -- commercialization rate, 2 -- rate of collection, 3 -- target collection rate(1 x 2)

File: Tab A.1.4-10

Table A.1.4-11. ESTIMATED AND PROJECTED PRODUCTION AND MARKETING VOLUMES OF TARGET COMMODITIES IN VALLEY REGION

Commodity	Items	Province			Valley Region Total
		Florida	Caballero	Vallegrande	
Base Year(1998, estimation) & 2000(projection)					
1. Root Crop(Potato)	Production(000 t)	15.0	16.7	22.0	53.7
	Commercialization Rate(%)	85	90	80	85
	Marketing Volume(000 t)	12.8	15.0	17.6	45.4
2. Vegetables	Production(000 t)	20.9	21.8	7.3	50.0
	Commercialization Rate(%)	85	85	85	85
	Marketing Volume(000 t)	17.8	18.5	6.2	42.5
3. Fruits	Production(000 t)	6.7	0.4	6.0	13.1
	Commercialization Rate(%)	85	85	85	85
	Marketing Volume(000 t)	5.7	0.3	5.1	11.1
Total	Production(000 t)	42.6	38.9	35.3	116.8
	Commercialization Rate(%)	85	87	82	85
	Marketing Volume(000 t)	36.2	33.9	28.9	99.0
Year 2005(projection)					
1. Root Crop(Potato)	Production(000 t)	15.0	21.1	22.0	58.1
	Commercialization Rate(%)	86	87	85	86
	Marketing Volume(000 t)	12.9	18.4	18.7	50.0
2. Vegetables	Production(000 t)	20.9	27.2	7.3	55.4
	Commercialization Rate(%)	86	88	87	87
	Marketing Volume(000 t)	18.0	23.9	6.4	48.3
3. Fruits	Production(000 t)	6.7	0.4	6.0	13.1
	Commercialization Rate(%)	87	85	85	86
	Marketing Volume(000 t)	5.8	0.3	5.1	11.3
Total	Production(000 t)	42.6	48.7	35.3	126.6
	Commercialization Rate(%)	86	88	85	86
	Marketing Volume(000 t)	36.7	42.6	30.2	109.5
Year 2010(projection)					
1. Root Crop(Potato)	Production(000 t)	16.5	23.3	24.1	63.9
	Commercialization Rate(%)	87	89	85	87
	Marketing Volume(000 t)	14.4	20.7	20.5	55.6
2. Vegetables	Production(000 t)	23.0	30.2	10.3	63.5
	Commercialization Rate(%)	90	90	90	90
	Marketing Volume(000 t)	20.7	27.2	9.3	57.2
3. Fruits	Production(000 t)	8.2	0.6	8.4	17.2
	Commercialization Rate(%)	90	90	90	90
	Marketing Volume(000 t)	7.4	0.5	7.6	15.5
Total	Production(000 t)	47.7	54.1	42.8	144.6
	Commercialization Rate(%)	89	90	87	89
	Marketing Volume(000 t)	42.4	48.5	37.3	128.2

Source: Results of study by JICA Study Team, 1998

Fig: Tab A.1.4-11

Table A.1.4-12. ESTIMATED ANNUAL TARGET COLLECTION VOLUMES FROM THE 1ST YEAR TO FULL OPERATION STAGE - 1/4 File:Tab A.1.4-12

Year	Factors	San Isidro Collection Area				Sanaipata Collection Area				
		Development Stage	Potato	Vegetables	Total	Development Stage	Potato	Vegetables	Fruits	Total
2001	1. Production(t)		6,000	9,900	15,900					
	2. Commercialization Rate(%)		90	85	-					
	3. Rate of Collection(%)	1st Year	30	30	-					
	4. Target Collection Rate(%, 2 x 3)		27	26	26					
	5. Target Collection Volume(t: 1 x 4 /100)		1,620	2,520	4,140					
2002	1. Production(t)		6,000	9,900	15,900					
	2. Commercialization Rate(%)		90	85	-					
	3. Rate of Collection(%)	2nd Year	40	40	-					
	4. Target Collection Rate(%, 2 x 3)		36	34	35					
	5. Target Collection Volume(t: 1 x 4 /100)		2,160	3,370	5,530					
2003	1. Production(t)		6,000	9,900	15,900					
	2. Commercialization Rate(%)		90	85	-					
	3. Rate of Collection(%)	3rd Year	50	50	-					
	4. Target Collection Rate(%, 2 x 3)		45	43	43					
	5. Target Collection Volume(t: 1 x 4 /100)		2,700	4,210	6,910					
2004	1. Production(t)		6,000	9,900	15,900					
	2. Commercialization Rate(%)		90	85	-					
	3. Rate of Collection(%)	4th Year	60	60	-					
	4. Target Collection Rate(%, 2 x 3)		54	51	52					
	5. Target Collection Volume(t: 1 x 4 /100)		3,240	5,050	8,290					
2005	1. Production(t)		6,000	9,900	15,900					
	2. Commercialization Rate(%)		90	90	-					
	3. Rate of Collection(%)	5th Year	70	70	-					
	4. Target Collection Rate(%, 2 x 3)		63	63	63					
	5. Target Collection Volume(t: 1 x 4 /100)		3,780	6,240	10,020					
2006	1. Production(t)		6,600	10,900	17,500					
	2. Commercialization Rate(%)		90	90	-					
	3. Rate of Collection(%)	Full Operation 6th Year	70	70	-					
	4. Target Collection Rate(%, 2 x 3)		63	63	63					
	5. Target Collection Volume(t: 1 x 4 /100)		4,160	6,870	11,030					
2007	1. Production(t)		6,600	10,900	17,500					
	2. Commercialization Rate(%)		90	90	-					
	3. Rate of Collection(%)	Full Operation 7th Year	70	70	-					
	4. Target Collection Rate(%, 2 x 3)		63	63	63					
	5. Target Collection Volume(t: 1 x 4 /100)		4,160	6,870	11,030					
2008	1. Production(t)		6,600	10,900	17,500					
	2. Commercialization Rate(%)		90	90	-					
	3. Rate of Collection(%)	Full Operation 8th Year	70	70	-					
	4. Target Collection Rate(%, 2 x 3)		63	63	63					
	5. Target Collection Volume(t: 1 x 4 /100)		4,160	6,870	11,030					
2009	1. Production(t)		6,600	10,900	17,500					
	2. Commercialization Rate(%)		90	90	-					
	3. Rate of Collection(%)	Full Operation 9th Year	70	70	-					
	4. Target Collection Rate(%, 2 x 3)		63	63	63					
	5. Target Collection Volume(t: 1 x 4 /100)		4,160	6,870	11,030					
2010	1. Production(t)		6,600	10,900	17,500					
	2. Commercialization Rate(%)		90	90	-					
	3. Rate of Collection(%)	Full Operation 10th Year	70	70	-					
	4. Target Collection Rate(%, 2 x 3)		63	63	63					
	5. Target Collection Volume(t: 1 x 4 /100)		4,160	6,870	11,030					

Table A.1.4-12. ESTIMATED ANNUAL TARGET COLLECTION VOLUMES FROM THE 1ST YEAR TO FULL OPERATION STAGE - 2/4

File:Tab A.1.4-12

Year	Factors	Vallegrande Collection Area					Sayupna Collection Area				
		Development Stage	Potato	Vegetables	Fruits	Total	Development Stage	Potato	Vegetables	Total	
2001	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t: 1 x 4 /100)										
2002	1. Production(t)		9,900	2,000	3,500	15,400		7,900	9,600	17,500	
	2. Commercialization Rate(%)		80	85	85	-		90	85	-	
	3. Rate of Collection(%)		20	30	30	-		30	30	-	
	4. Target Collection Rate(%, 2 x 3)		16	26	26	19		27	26	26	
	5. Target Collection Volume(t: 1 x 4 /100)		1,590	510	890	2,990		2,130	2,440	4,570	
2003	1. Production(t)		9,900	2,000	3,500	15,400		8,600	10,100	18,700	
	2. Commercialization Rate(%)		80	85	85	-		90	85	-	
	3. Rate of Collection(%)		30	40	40	-		40	40	-	
	4. Target Collection Rate(%, 2 x 3)		24	34	34	28		36	34	35	
	5. Target Collection Volume(t: 1 x 4 /100)		2,380	680	1,190	4,250		3,100	3,430	6,530	
2004	1. Production(t)		9,900	2,000	3,500	15,400		9,400	11,200	20,600	
	2. Commercialization Rate(%)		80	85	85	-		90	85	-	
	3. Rate of Collection(%)		40	50	50	-		50	50	-	
	4. Target Collection Rate(%, 2 x 3)		32	43	43	36		45	43	44	
	5. Target Collection Volume(t: 1 x 4 /100)		3,170	850	1,490	5,510		4,230	4,760	8,990	
2005	1. Production(t)		9,900	2,000	3,500	15,400		9,400	11,200	20,600	
	2. Commercialization Rate(%)		80	85	85	-		90	85	-	
	3. Rate of Collection(%)		50	60	60	-		60	60	-	
	4. Target Collection Rate(%, 2 x 3)		40	51	51	44		54	51	52	
	5. Target Collection Volume(t: 1 x 4 /100)		3,960	1,020	1,790	6,770		5,080	5,710	10,790	
2006	1. Production(t)		9,900	2,000	3,500	15,400		9,400	11,200	20,600	
	2. Commercialization Rate(%)		85	90	90	-		90	90	-	
	3. Rate of Collection(%)		60	70	70	-		70	70	-	
	4. Target Collection Rate(%, 2 x 3)		51	63	63	55		63	63	63	
	5. Target Collection Volume(t: 1 x 4 /100)		5,050	1,250	2,200	8,510		5,920	7,060	12,980	
2007	1. Production(t)		11,100	3,500	4,800	19,400		10,300	12,400	22,700	
	2. Commercialization Rate(%)		85	90	90	-		90	90	-	
	3. Rate of Collection(%)		70	70	70	-		70	70	-	
	4. Target Collection Rate(%, 2 x 3)		60	70	70	56		70	70	63	
	5. Target Collection Volume(t: 1 x 4 /100)		5,660	2,210	3,020	10,890		6,490	7,810	14,300	
2008	1. Production(t)		11,300	4,300	5,300	20,900		10,300	12,400	22,700	
	2. Commercialization Rate(%)		85	90	90	-		90	90	-	
	3. Rate of Collection(%)		60	70	70	-		70	70	-	
	4. Target Collection Rate(%, 2 x 3)		51	63	63	57		63	63	63	
	5. Target Collection Volume(t: 1 x 4 /100)		5,760	2,710	3,340	11,810		6,490	7,810	14,300	
2009	1. Production(t)		11,400	4,700	5,800	21,900		10,300	12,400	22,700	
	2. Commercialization Rate(%)		85	90	90	-		90	90	-	
	3. Rate of Collection(%)		60	70	70	-		70	70	-	
	4. Target Collection Rate(%, 2 x 3)		51	63	63	57		63	63	63	
	5. Target Collection Volume(t: 1 x 4 /100)		5,760	2,710	3,340	11,810		6,490	7,810	14,300	
2010	1. Production(t)		11,400	4,700	5,800	21,900		10,300	12,400	22,700	
	2. Commercialization Rate(%)		85	90	90	-		90	90	-	
	3. Rate of Collection(%)		60	70	70	-		70	70	-	
	4. Target Collection Rate(%, 2 x 3)		51	63	63	57		63	63	63	
	5. Target Collection Volume(t: 1 x 4 /100)		5,810	2,960	3,650	12,420		6,490	7,810	14,300	

Table A.1.4-12. ESTIMATED ANNUAL TARGET COLLECTION VOLUMES FROM THE 1ST YEAR TO FULL OPERATION STAGE - 3/4

File: Tab A.1.4-12

Year	Factors	Mairana Collection Area					Pampa Grande Collection Area				
		Development Stage	Potato	Vegetables	Fruits	Total	Development Stage	Potato	Vegetables	Fruits	Total
2001	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2002	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2003	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2004	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2005	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2006	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2007	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2008	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2009	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										
2010	1. Production(t)										
	2. Commercialization Rate(%)										
	3. Rate of Collection(%)										
	4. Target Collection Rate(%, 2 x 3)										
	5. Target Collection Volume(t, 1 x 4 /100)										

Table A.1.4-12. ESTIMATED ANNUAL TARGET COLLECTION VOLUMES FROM THE 1ST YEAR TO FULL OPERATION STAGE - 4/4

File: Tab A.1.4-12

Year	Factors	Comarapa Collection Area					Total	Year	Overall					Total
		Potato	Vegetables	Fruits	Total	Development Stage			Potato	Vegetables	Fruits	Total		
2001	1. Production(t)							2001						
	2. Commercialization Rate(%)						6,000							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						1,626							
2002	1. Production(t)							2002						
	2. Commercialization Rate(%)						6,000							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						2,160							
2003	1. Production(t)							2003						
	2. Commercialization Rate(%)						29,000							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						7,250							
2004	1. Production(t)							2004						
	2. Commercialization Rate(%)						40,800							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						12,370							
2005	1. Production(t)							2005						
	2. Commercialization Rate(%)						41,600							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						16,170							
2006	1. Production(t)							2006						
	2. Commercialization Rate(%)						42,200							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						20,090							
2007	1. Production(t)							2007						
	2. Commercialization Rate(%)						42,200							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						23,510							
2008	1. Production(t)							2008						
	2. Commercialization Rate(%)						44,800							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						26,140							
2009	1. Production(t)							2009						
	2. Commercialization Rate(%)						46,200							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						26,960							
2010	1. Production(t)							Overall Full Operation 2010						
	2. Commercialization Rate(%)						27,010							
	3. Rate of Collection(%)													
	4. Target Collection Rate(%, 2 x 3)													
	5. Target Collection Volume(t: 1 x 4 /100)						34,850							

Table A.1.5-1 Major Functions/Activities to be Performed by Institutions Concerned with O&M of C/D Centers -1/2

	2000	2001	2002	2003
Institutions				
Sub-Project Office	<ul style="list-style-type: none"> - Institutional Training for San Isidro C/D center - Technical Extension Programs for San Isidro Areas - Support O&M Arrangement - Renovation of C/D Center 	<ul style="list-style-type: none"> - Institutional Training for Samaipata, Vallegrande, Saipina, Mairana, Pampa Saipina C/D - Technical Extension Programs for San Isidro Areas - Support/Monitor O&M of C/D Center - Initial Stage of Operation - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D 	<ul style="list-style-type: none"> - Institutional Training for Samaipata, Vallegrande, Saipina, Mairana, Pampa Grande & Comarapa C/D - Technical Extension Programs for San Isidro Areas - Support/Monitor O&M of C/D Center - Initial Stage of Operation - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D 	<ul style="list-style-type: none"> - Institutional Training for Mairana, Pampa Grande & Comarapa C/D Center - Technical Extension Programs for San Isidro, Samaipata, Vallegrande & Saipina Areas - Support/Monitor O&M of C/D Center - Initial Stage of Operation - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D
San Isidro C/D Center				
Municipal Gov.	<ul style="list-style-type: none"> - Estab. of Steering Committee for Operation of C/D - Management Arrangement of C/D with ASOFRUT - Preparation of O&M Guidelines - Enact Regulations for Users/Usrs Fees - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Support/Monitor O&M of C/D Center - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D - Support/Supervise O&M of C/D Center 	<ul style="list-style-type: none"> - Support/Monitor O&M of C/D Center - Initial Stage of Operation - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D - Support/Supervise O&M of C/D Center 	<ul style="list-style-type: none"> - Support/Monitor O&M of C/D Center - Initial Stage of Operation - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D - Support/Supervise O&M of C/D Center
Steering Committee				
Samaipata, Vallegrande & Saipina C/D Centers				
Municipal Gov.	<ul style="list-style-type: none"> - Support/Supervise O&M of C/D Center - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Support/Supervise O&M of C/D Center - Renovation of C/D Center(Samaipata) - Construction of C/D Center - Estab. of Steering Committee for Operation of C/D - Management Arrangement of C/D with ASOFRUT - Preparation of O&M Guidelines - Enact Regulations for Users/Usrs Fees - Preparation of O&M Guidelines - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Support/Supervise O&M of C/D Center - Renovation of C/D Center(Samaipata) - Construction of C/D Center - Estab. of Steering Committee for Operation of C/D - Management Arrangement of C/D with ASOFRUT - Preparation of O&M Guidelines - Enact Regulations for Users/Usrs Fees - Preparation of O&M Guidelines - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Support/Supervise O&M of C/D Center - Initial Stage of Operation - Institutional Training/Guidance - Management of Steering Committee for Operation of C/D - Support/Supervise O&M of C/D Center
Steering Committee				
Mairana, Pampa Grande & Comarapa C/D Centers				
Municipal Gov.	<ul style="list-style-type: none"> - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Enact Regulations for Users/Usrs Fees 	<ul style="list-style-type: none"> - Enact Regulations for Users/Usrs Fees
Steering Committee				
CIAT	<ul style="list-style-type: none"> - Technical Extension Programs 	<ul style="list-style-type: none"> - Technical Extension Programs 	<ul style="list-style-type: none"> - Technical Extension Programs 	<ul style="list-style-type: none"> - Technical Extension Programs
ASOFRUT				
EMCA				

Table A.1.5-2 Proposed Rules and Regulations for Users of C/D Centers

Items of Rules/Regulations	Proposed Rules/Regulations	
	Initial Stage	Advanced Stage
Organizational Issues		
Steering Committee	<ul style="list-style-type: none"> - Steering committee for O&M of C/D center composed of representatives of Sub-project office, municipal government, management body, users and other related institutions - O&M guidelines, prescription of rules & regulations of C/D center - Supervision, guidance & support of O&M - Reconciliation of conflicts 	<ul style="list-style-type: none"> - Management committee organized by CCUC - Board of directors & general assembly take part of functions of steering committee
Management Body	<ul style="list-style-type: none"> - Entrusting to existing farmers organization 	<ul style="list-style-type: none"> - Organized within CCUC
Users Groups	<ul style="list-style-type: none"> - Individual users or arbitrary users groups 	<ul style="list-style-type: none"> - CCUC
Operation Issues		
Transaction System	<ul style="list-style-type: none"> - Cooperative collection, selection, packing & shipment and individual selling under name of C/D center - Transaction by the management under name of C/D center 	<ul style="list-style-type: none"> - Cooperative collection, selection, packing, shipment & selling under name of CCUC - Transaction by the management under name of CCUC
Target Products	<ul style="list-style-type: none"> - Potatoes, vegetables & fruits in principle & other products approved by the management 	<ul style="list-style-type: none"> - Potatoes, vegetables & fruits in principle & other products approved by the management
Qualification of Users	<ul style="list-style-type: none"> - Any farmers in target areas of collection who observe the rules & regulations 	<ul style="list-style-type: none"> - Members of CCUC & non-members accepted by the management
Users Fees	<ul style="list-style-type: none"> - Prescribed by municipal government through steering committee - Annual reiview with exceptional review in case of needs 	<ul style="list-style-type: none"> - Prescribed by CCUC - Annual reiview with exceptional review in case of needs
Operating Days & Hours	<ul style="list-style-type: none"> - Operating days & hours prescribed by the management - Users to observe strictly delibery times announced by the management 	<ul style="list-style-type: none"> - Operating days & hours prescribed by the management - Users to observe strictly delibery times announced by the management
Preliminary Selection	<ul style="list-style-type: none"> - By users under guidance of the management 	<ul style="list-style-type: none"> - By users under guidance of the management
Delivery of Products	<ul style="list-style-type: none"> - By users under guidance of the management (time, forms of packing etc.) 	<ul style="list-style-type: none"> - By users under guidance of the management (time, forms of packing etc.)
Counting/Weighing at Delivery	<ul style="list-style-type: none"> - By C/D center at the presence of users 	<ul style="list-style-type: none"> - By C/D center at the presence of users
Selection/Standard	<ul style="list-style-type: none"> - By C/D center & grading standard decided by the management 	<ul style="list-style-type: none"> - By C/D center & grading standard decided by the management
Packing	<ul style="list-style-type: none"> - By C/D center & forms of packing decided by the management 	<ul style="list-style-type: none"> - By C/D center & forms of packing decided by the management
Counting/Weighing after Packing	<ul style="list-style-type: none"> - By C/D center 	<ul style="list-style-type: none"> - By C/D center
Shippment	<ul style="list-style-type: none"> - By C/D center by employing transpoter 	<ul style="list-style-type: none"> - By C/D center by employing transpoter
Destination Market	<ul style="list-style-type: none"> - Decided by the management 	<ul style="list-style-type: none"> - Decided by the management
Selling & Price of Products	<ul style="list-style-type: none"> - By C/D center (at the presence of users) 	<ul style="list-style-type: none"> - By C/D center
Accounting/Payment	<ul style="list-style-type: none"> - Payment after deducting trabsportation costs/users fees after receipt of disbursment from buyers by C/D center 	<ul style="list-style-type: none"> - Payment after deducting trabsportation costs/users fees after receipt of disbursment from buyers by C/D center
Production Information	<ul style="list-style-type: none"> - Users to supply information to C/D center 	<ul style="list-style-type: none"> - Users to supply information to C/D center
Security & Sanitary Issues	<ul style="list-style-type: none"> - Users to observe security measures taken by the management 	<ul style="list-style-type: none"> - Users to observe security measures taken by the management
Prohibition/Penalties	<ul style="list-style-type: none"> - Users negligence of rules/regulations will face penalty 	<ul style="list-style-type: none"> - Users negligence of rules/regulations will face penalty
Mediation of Conflicts	<ul style="list-style-type: none"> - By municipal government/steering committee 	<ul style="list-style-type: none"> - By management committee/board of directors

Remarks: CCUC --- Collection Center Users Cooperative

Table A.1.5-3 Estimation of Weighted Average Net Unit Producers Prices of Fruits and Vegetables

Commodity	Factors	C/D Center						
		San Isidro	Samaipata	Vallegrande	Saipina	Mairana	P. Grande	Comarapa
Vegetables								
Tomato	1. Production(t)	4,114	1,210	2,550	9,980	1,870	5,100	3,420
	2. Commercialization Rate(%)	90	90	90	90	90	90	90
	3. Rate of Collection(%)	70	60	70	70	80	70	70
	4. Target Collection Rate(%) (2 x 3)	63	54	63	63	72	63	63
	5. Target Collection Volume(t) (1 x 4)	2,592	653	1,607	6,287	1,346	3,213	2,155
	6. Net Unit Producers Price(US\$/t)	135	135	135	135	135	135	135
	7. Annual Handling Amount(US\$) (5 x 6)	349,896	88,209	216,878	848,799	181,764	433,755	290,871
Lettuce	1. Production(t)		1,100			2,420	5,300	
	2. Commercialization Rate(%)		90			90	90	
	3. Rate of Collection(%)		60			80	70	
	4. Target Collection Rate(%) (2 x 3)		54			72	63	
	5. Target Collection Volume(t) (1 x 4)		594			1,742	3,339	
	6. Net Unit Producers Price(US\$/t)		100			100	90	
	7. Annual Handling Amount(US\$) (5 x 6)		59,400			174,240	300,510	
Choclo	1. Production(t)	1,452						
	2. Commercialization Rate(%)	90						
	3. Rate of Collection(%)	70						
	4. Target Collection Rate(%) (2 x 3)	63						
	5. Target Collection Volume(t) (1 x 4)	915						
	6. Net Unit Producers Price(US\$/t)	285						
	7. Annual Handling Amount(US\$) (5 x 6)	260,707						
Green Pepper	1. Production(t)	5,390				1,100		1,000
	2. Commercialization Rate(%)	90				90		90
	3. Rate of Collection(%)	70				80		70
	4. Target Collection Rate(%) (2 x 3)	63				72		63
	5. Target Collection Volume(t) (1 x 4)	3,396				792		630
	6. Net Unit Producers Price(US\$/t)	205				205		205
	7. Annual Handling Amount(US\$) (5 x 6)	696,119				162,360		129,150
Beans/Peas	1. Production(t)		165	2,200	2,420		2,860	1,280
	2. Commercialization Rate(%)		90	90	90		90	90
	3. Rate of Collection(%)		60	70	70		70	70
	4. Target Collection Rate(%) (2 x 3)		54	63	63		63	63
	5. Target Collection Volume(t) (1 x 4)		89	1,386	1,525		1,802	806
	6. Net Unit Producers Price(US\$/t)		435	435	435		435	435
	7. Annual Handling Amount(US\$) (5 x 6)		38,759	602,910	663,201		783,783	350,784
Total	A. Total Collection Volume	6,902	1,337	2,993	7,812	3,881	8,354	3,591
	B. Total Annual Handling Amount(US\$)	1,306,721	186,368	819,788	1,512,000	518,364	1,518,048	770,805
Weighted Average Net Unit Producers Price(US\$/t) (B/A)		189	139	274	194	134	182	215
Fruits								
Peach/Pum	1. Production(t)		1,350	5,750		2,200	600	600
	2. Commercialization Rate(%)		90	90		90	90	90
	3. Rate of Collection(%)		80	70		80	70	70
	4. Target Collection Rate(%) (2 x 3)		72	63		72	63	63
	5. Target Collection Volume(t) (1 x 4)		972	3,623		1,584	378	378
	6. Net Unit Producers Price(US\$/t)		420	420		420	420	420
	7. Annual Handling Amount(US\$) (5 x 6)		408,240	1,521,450		665,280	158,760	158,760
Citrus	1. Production(t)		1,500			550	900	
	2. Commercialization Rate(%)		90			90	90	
	3. Rate of Collection(%)		80			80	70	
	4. Target Collection Rate(%) (2 x 3)		72			72	63	
	5. Target Collection Volume(t) (1 x 4)		1,080			396	567	
	6. Net Unit Producers Price(US\$/t)		135			135	135	
	7. Annual Handling Amount(US\$) (5 x 6)		145,800			53,460	76,545	
Total	A. Total Collection Volume		2,052	3,623	0	1,980	945	378
	B. Total Annual Handling Amount(US\$)		554,040	1,521,450	0	718,740	235,305	158,760
Weighted Average Net Unit Producers Price(US\$/t) (B/A)			270	420		363	249	420
Potatoes	1. Target Collection Volume(t)	4,160	2,910	5,810	6,490	1,290	3,210	3,140
	2. Net Unit Producers Price(US\$/t)	220	220	220	220	220	220	220
	3. Annual Handling Amount(US\$)	915,200	640,200	1,278,200	1,427,800	283,800	706,200	690,800
Overall	A. Target Collection Volume	11,062	6,299	12,425	14,302	7,151	12,509	7,109
	B. Annual Handling Amount(US\$)	2,221,921	1,380,608	3,619,438	2,939,800	1,520,904	2,459,553	1,620,365
Overall Net Unit Producers Price(US\$/t) (B/A)		201	219	291	206	213	197	228

Remarks 1: Production & target collection volumes and annual handling amount at full operation stage

Table A.1.5-4 Annual Handling Amounts of C/D Centers - 1/2

C/D Center	Products	Factors	Year									
			2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 & on
San Isidro	Potatoes	Target Collection Volume(t)	1,620	2,160	2,700	3,240	3,780	4,160	4,160	4,160	4,160	4,160
		Net Producers Price(US\$/t)	220	220	220	220	220	220	220	220	220	220
	Vegetables	Handling Amount(US\$1,000)	356	475	594	713	832	915	915	915	915	915
		Target Collection Volume(t)	2,520	3,370	4,210	5,050	6,240	6,870	6,870	6,870	6,870	6,870
Samaipata	Potatoes	Net Producers Price(US\$/t)	189	189	189	189	189	189	189	189	189	189
		Handling Amount(US\$1,000)	476	637	796	954	1,179	1,298	1,298	1,298	1,298	1,298
	Total	Target Collection Volume(t)	4,140	5,530	6,910	8,290	10,020	11,030	11,030	11,030	11,030	11,030
		Sales Amount(US\$1,000)	833	1,112	1,390	1,667	2,011	2,214	2,214	2,214	2,214	2,214
Vallegrande	Potatoes	Target Collection Volume(t)	830	1,250	1,660	2,080	2,650	2,910	2,910	2,910	2,910	2,910
		Net Producers Price(US\$/t)	220	220	220	220	220	220	220	220	220	220
	Vegetables	Handling Amount(US\$1,000)	183	275	365	458	583	640	640	640	640	640
		Target Collection Volume(t)	380	570	770	960	1,220	1,350	1,350	1,350	1,350	1,350
Saipina	Potatoes	Net Producers Price(US\$/t)	139	139	139	139	139	139	139	139	139	139
		Handling Amount(US\$1,000)	53	79	107	133	170	188	188	188	188	188
	Total	Target Collection Volume(t)	320	490	660	830	1,100	1,370	1,370	1,370	1,370	1,370
		Handling Amount(US\$1,000)	270	270	270	270	270	270	270	270	270	270
Vallegrande	Potatoes	Target Collection Volume(t)	86	132	199	279	370	486	524	524	524	524
		Handling Amount(US\$1,000)	1,530	2,310	3,240	4,170	5,240	6,060	6,200	6,200	6,200	6,200
	Vegetables	Target Collection Volume(t)	322	487	691	896	1,122	1,314	1,314	1,314	1,314	1,314
		Handling Amount(US\$1,000)	1,590	2,380	3,170	3,960	5,050	5,200	5,200	5,200	5,200	5,200
Saipina	Potatoes	Target Collection Volume(t)	350	524	697	871	1,111	1,144	1,144	1,144	1,144	1,144
		Net Producers Price(US\$/t)	510	680	850	1,020	1,260	1,260	1,260	1,260	1,260	1,260
	Vegetables	Target Collection Volume(t)	274	274	274	274	274	274	274	274	274	274
		Handling Amount(US\$1,000)	140	186	233	279	345	345	345	345	345	345
Saipina	Potatoes	Target Collection Volume(t)	890	1,190	1,490	1,790	2,200	2,200	2,200	2,200	2,200	2,200
		Net Producers Price(US\$/t)	420	420	420	420	420	420	420	420	420	420
	Total	Handling Amount(US\$1,000)	374	500	626	752	924	1,163	1,163	1,163	1,163	1,163
		Target Collection Volume(t)	2,990	4,250	5,510	6,770	8,510	10,050	11,810	11,810	11,810	11,810
Saipina	Potatoes	Handling Amount(US\$1,000)	863	1,210	1,556	1,902	2,380	2,877	3,413	3,413	3,413	3,413
		Target Collection Volume(t)	2,130	3,100	4,230	5,080	5,920	6,490	6,490	6,490	6,490	6,490
	Vegetables	Handling Amount(US\$1,000)	469	682	931	1,118	1,302	1,428	1,428	1,428	1,428	1,428
		Target Collection Volume(t)	2,440	3,430	4,760	5,710	7,060	7,810	7,810	7,810	7,810	7,810
Saipina	Potatoes	Net Producers Price(US\$/t)	194	194	194	194	194	194	194	194	194	194
		Handling Amount(US\$1,000)	473	665	923	1,108	1,370	1,515	1,515	1,515	1,515	1,515
	Total	Target Collection Volume(t)	4,570	6,530	8,990	10,790	12,980	14,300	14,300	14,300	14,300	14,300
		Handling Amount(US\$1,000)	942	1,347	1,854	2,225	2,672	2,943	2,943	2,943	2,943	2,943

Remarks 1: Net Producers Price: selling price at market - transportation costs
 Remarks 2: Net Producers Price in vegetables & fruits: weighted average net producers price

Table A.1.5-4 Annual Handling Amounts of C/D Centers - 2/2

C/D Center	Commodity	Factors	Year										2010 & on
			2001	2002	2003	2004	2005	2006	2007	2008	2009		
Mairana	Potatoes	Target Collection Volume(t)	410	540	820	950	1,160	1,290	1,290	1,290	1,290	1,290	
		Net Producers Price(US\$/t)	220	220	220	220	220	220	220	220	220	220	
		Handling Amount(US\$1,000)	90	119	180	209	255	284	284	284	284	284	
Vegetables	Vegetables	Target Collection Volume(t)	1,250	1,670	2,500	2,920	3,530	3,890	3,890	3,890	3,890	3,890	
		Net Producers Price(US\$/t)	134	134	134	134	134	134	134	134	134	134	
		Handling Amount(US\$1,000)	168	224	335	391	473	521	521	521	521	521	
Fruits	Fruits	Target Collection Volume(t)	640	850	1,280	1,490	1,800	2,020	2,020	2,020	2,020	2,020	
		Net Producers Price(US\$/t)	363	363	363	363	363	363	363	363	363	363	
		Handling Amount(US\$1,000)	232	309	465	541	653	733	733	733	733	733	
Pampa Grande	Potatoes	Total Target Collection Volume(t)	2,300	3,060	4,600	5,360	6,490	7,200	7,200	7,200	7,200	7,200	
		Handling Amount(US\$1,000)	490	651	980	1,141	1,382	1,538	1,538	1,538	1,538	1,538	
		Target Collection Volume(t)	810	1,220	2,030	2,430	2,840	3,210	3,210	3,210	3,210	3,210	
Vegetables	Vegetables	Net Producers Price(US\$/t)	220	220	220	220	220	220	220	220	220	220	
		Handling Amount(US\$1,000)	178	268	447	535	625	706	706	706	706	706	
		Target Collection Volume(t)	1,990	2,990	5,060	6,070	7,500	8,380	8,380	8,380	8,380	8,380	
Fruits	Fruits	Net Producers Price(US\$/t)	182	182	182	182	182	182	182	182	182	182	
		Handling Amount(US\$1,000)	362	544	921	1,105	1,365	1,525	1,525	1,525	1,525	1,525	
		Target Collection Volume(t)	220	330	550	660	820	950	950	950	950	950	
Comarapa	Potatoes	Net Producers Price(US\$/t)	249	249	249	249	249	249	249	249	249	249	
		Handling Amount(US\$1,000)	55	82	137	164	204	237	237	237	237	237	
		Target Collection Volume(t)	3,020	4,540	7,640	9,160	11,160	12,540	12,540	12,540	12,540	12,540	
Vegetables	Vegetables	Handling Amount(US\$1,000)	595	895	1,504	1,804	2,194	2,468	2,468	2,468	2,468	2,468	
		Target Collection Volume(t)	1,180	1,570	1,960	2,350	2,920	3,140	3,140	3,140	3,140	3,140	
		Net Producers Price(US\$/t)	220	220	220	220	220	220	220	220	220	220	
Fruits	Fruits	Handling Amount(US\$1,000)	260	345	431	517	642	691	691	691	691	691	
		Target Collection Volume(t)	1,330	1,770	2,210	2,650	3,280	3,590	3,590	3,590	3,590	3,590	
		Net Producers Price(US\$/t)	215	215	215	215	215	215	215	215	215	215	
Overall	Potatoes	Handling Amount(US\$1,000)	286	381	475	570	705	772	772	772	772	772	
		Target Collection Volume(t)	100	140	170	200	250	280	280	280	280	280	
		Net Producers Price(US\$/t)	420	420	420	420	420	420	420	420	420	420	
Vegetables	Vegetables	Handling Amount(US\$1,000)	42	59	71	84	105	160	160	160	160	160	
		Target Collection Volume(t)	2,610	3,480	4,340	5,200	6,450	7,110	7,110	7,110	7,110	7,110	
		Handling Amount(US\$1,000)	588	785	978	1,171	1,453	1,622	1,622	1,622	1,622	1,622	
Fruits	Fruits	Target Collection Volume(t)	1,620	2,160	2,750	3,310	4,090	4,920	5,920	6,960	7,010	7,010	
		Handling Amount(US\$1,000)	356	475	595	721	885	1,072	1,291	1,531	1,771	1,771	
		Net Producers Price(US\$/t)	2,520	3,370	4,220	5,070	6,010	7,010	8,010	9,010	10,010	10,010	
Overall	Vegetables	Target Collection Volume(t)	476	637	807	977	1,147	1,317	1,487	1,657	1,827	1,827	
		Handling Amount(US\$1,000)	0	0	0	0	0	0	0	0	0	0	
		Net Producers Price(US\$/t)	0	0	0	0	0	0	0	0	0	0	
Overall	Fruits	Target Collection Volume(t)	0	0	460	1,294	1,730	2,083	2,612	3,056	3,227	3,227	
		Handling Amount(US\$1,000)	4,140	5,530	7,310	8,840	10,700	12,504	14,376	15,549	15,799	15,799	
		Net Producers Price(US\$/t)	833	1,112	3,517	6,384	8,443	10,700	12,504	14,376	15,549	15,799	

Remarks 1: Net Producers Price: selling price at market - transportation costs
 Remarks 2: Net Producers Price in vegetables & fruits: weighted average net producers price

Table A.1.5-5 Estimation of Users Fees to be Collected by C/D Centers

Commodity/Factors	C/D Center					
	San Isidro	Samaipata	Vallegrande	Saipina	Mairana	P. Grande Comarapa
A. Base Users Fee(%)	5.0	5.0	5.0	5.0	5.0	5.0
B. Additional Users Fee Corresponding to Selection/Packing Costs(%)	2.5	2.5	1.0	2.0	2.5	2.5
C. Users Fees to Be Collected (A + B)	7.5	7.5	6.0	7.0	7.5	7.5
Proportion of Selection/Packing Costs to Net Unit Producers Price(%)						
Potatoes						
1. Collection Volume(t)	4,160	2,910	5,810	6,490	1,290	3,210
2. Annual Handling Amount(US\$1,000)	915	640	1,278	1,428	284	706
Vegetables						
1. Collection Volume(t)	6,870	1,350	2,960	7,810	3,890	8,380
2. Annual Handling Amount(US\$1,000)	1,298	188	811	1,515	521	1,525
Fruits						
1. Collection Volume(t)		2,090	3,650		2,020	950
2. Annual Handling Amount(US\$1,000)		564	1,533		733	237
Overall						
1. Collection Volume(t)	11,030	6,350	12,420	14,300	7,200	12,540
2. Annual Handling Amount(US\$1,000)	2,214	1,392	3,622	2,943	1,538	2,468
Overall Net Unit Producers Price(US\$/t)	201	219	292	206	214	197
			(2/1)			
Cooperative Selection/Packing Costs(US\$)	6.0	6.0	6.0	6.0	6.0	6.0
Proportion of Selection/Packing Costs to Net Unit Producers Price(%)	3.0	2.7	2.1	2.9	2.8	3.0

Remarks 1: Target collection volumes and annual handling amount at full operation stage(see Table A.1.5-3)

Remarks 2: Overall Net Unit Producers Price = Weighted average net unit producers price

Table A.1.5-6 Estimated Management and Administration Costs of C/D Centers

Items	San Isidro C/D Center				Samaipata C/D Center			
	1st & 2nd Year		From 3rd Year		1st & 2nd Year		From 3rd Year	
	No.	Unit Rate (US\$)	Amount (US\$)	No.	Unit Rate (US\$)	Amount (US\$)	No.	Unit Rate (US\$)
1. Staff Remuneration	1	9,100	9,100	1	9,100	9,100	1	9,100
Supervisor 1	1	6,500	6,500	1	6,500	6,500	1	6,500
Supervisor 2	1	4,500	4,500	1	4,500	4,500	1	4,500
Administration/Accounting Staff	1	2,600	2,600	1	2,600	2,600	1	2,600
Staff at Destination Market	4		22,700	5		29,200	4	
Sub-Total			6,810			8,760		
2. Administration Costs								
Lump Sum(30% of remuneration)			29,510			37,960		
Total (Management & Administration Costs)			29,510			37,960		
			Vallegrande C/D Center					
1. Staff Remuneration	1	9,100	9,100	1	9,100	9,100	1	9,100
Supervisor 1	1	6,500	6,500	1	6,500	6,500	1	6,500
Supervisor 2	1	4,500	4,500	1	4,500	4,500	1	4,500
Administration/Accounting Staff	1	2,600	2,600	1	2,600	2,600	1	2,600
Staff at Destination Market	4		22,700	5		29,200	4	
Sub-Total			6,810			8,760		
2. Administration Costs								
Lump Sum(30% of remuneration)			29,510			37,960		
Total (Management & Administration Costs)			29,510			37,960		
			Pampa grande C/D Center					
1. Staff Remuneration	1	9,100	9,100	1	9,100	9,100	1	9,100
Supervisor 1	1	6,500	6,500	1	6,500	6,500	1	6,500
Supervisor 2	1	4,500	4,500	1	4,500	4,500	1	4,500
Administration/Accounting Staff	1	2,600	2,600	1	2,600	2,600	1	2,600
Staff at Destination Market	4		22,700	5		29,200	4	
Sub-Total			6,810			8,760		
2. Administration Costs								
Lump Sum(30% of remuneration)			29,510			37,960		
Total (Management & Administration Costs)			29,510			37,960		
			Comanapa C/D Center					
1. Staff Remuneration	1	9,100	9,100	1	9,100	9,100	1	9,100
Supervisor 1	1	6,500	6,500	1	6,500	6,500	1	6,500
Supervisor 2	1	4,500	4,500	1	4,500	4,500	1	4,500
Administration/Accounting Staff	1	2,600	2,600	1	2,600	2,600	1	2,600
Staff at Destination Market	3		16,900	4		21,400	3	
Sub-Total			5,070			6,420		
2. Administration Costs								
Lump Sum(30% of remuneration)			21,970			27,820		
Total (Management & Administration Costs)			21,970			27,820		

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 1/7: San Isidro C/D Center

Costs	Year							
	-1st 2000	1st 2001	2nd 2002	3rd 2003	4th 2004	5th 2005	6th 2006	7th & on 2007 & on
I. Target Collection Volumes(t)		4,140	5,530	6,910	8,290	10,020	11,030	11,030
II. Annual Handling Amount(US\$1,000)		832.7	1,112.1	1,389.7	1,667.3	2,011.0	2,213.6	2,213.6
III. Users Fees Collected(US\$1,000; II x 7.5%)		62.5	83.4	104.2	125.0	150.8	166.0	166.0
IV. Operation Costs(US\$1,000)		89.3	99.4	119.1	129.1	141.7	160.1	160.1
1. Fixed Costs(US\$1,000)		59.3	59.3	69.1	69.1	69.1	80.2	80.2
a. Management/Administration Costs		29.5	29.5	38.0	38.0	38.0	38.0	38.0
Operation Staff Remuneration		22.7	22.7	29.2	29.2	29.2	29.2	29.2
Administration Costs		6.8	6.8	8.8	8.8	8.8	8.8	8.8
b. Extension Service Costs		1.0	1.0	1.0	1.0	1.0	12.1	12.1
Extension Personnel							6.5	6.5
Extension Services Costs							3.6	3.6
Institutional Training Costs							2.0	2.0
c. O&M of C/D Center		5.0	5.0	5.0	5.0	5.0	5.0	5.0
d. O&M of Vehicle(30%)		7.6	7.6	8.5	8.5	8.5	8.5	8.5
e. Depreciation Costs of Buildings(3%)		11.6	11.6	11.6	11.6	11.6	11.6	11.6
f. Depreciation Costs of Vehicle & Equipment(10%)		4.6	4.6	4.9	4.9	4.9	4.9	4.9
2. Variable Costs(US\$1,000)		30.0	40.1	50.1	60.1	72.6	79.9	79.9
a. Loading & Un-loading Costs(US\$ 0.9/t)		3.7	5.0	6.2	7.5	9.0	9.9	9.9
b. Selection & Packing Costs(US\$ 6.0/t)		24.8	33.2	41.5	49.7	60.1	66.2	66.2
c. Miscellaneous((a + b) * 0.05)		1.4	1.9	2.4	2.9	3.5	3.8	3.8
V. Users Fees - Operation Costs (US\$1,000; III - IV)		-26.8	-15.9	-14.9	-4.1	9.2	5.9	5.9
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)		-10.6	0.3	1.6	12.5	25.7	22.5	22.5
VII. Initial Investment Costs(US\$1,000)								
a. Construction	1	88.7						88.7
b. Equipment/Facility	1	21.0						21.0
c. Vehicle(1 ton truck)	1	18.9						18.9
d. Motorcycle(125 cc)	2	6.3		1	3.2			9.5
Total		109.7	25.2	3.2	138.1			

Remarks 1: Depreciation Costs of Building --- estimated replacement costs of PETHOSAM facility US\$ 387,000 x 0.03

Remarks 2: Loading & Un-loading Costs --- loading 10t/4 men x 1.5hr; un-loading 10t/4 men x 1.0hr = 10t/10manhours; labor costs @ US\$7.00/8manhours x 10manhours=US\$0.90/t

Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @US\$6.00=US\$6.00/t

Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 2/7: Samajpata C/D Center

Costs	Year									
	-1st 2002	1st 2003	2nd 2004	3rd 2005	4th 2006	5th 2007	6th 2008	7th 2009	8th & on 2010 & on	
I. Target Collection Volumes(t)	1,530		2,310	3,240	4,170	5,240	6,060	6,200	6,350	
II. Annual Handling Amount(US\$1,000)	321.8		486.5	690.9	896.1	1,122.5	1,313.9	1,351.7	1,392.2	
III. Users Fees Collected(US\$1,000; II x 7.5%)	24.1		36.5	51.8	67.2	84.2	98.5	101.4	104.4	
IV. Operation Costs(US\$1,000)	56.7		62.4	74.9	81.7	89.4	101.0	102.0	103.1	
I. Fixed Costs(US\$1,000)	45.7		45.7	51.5	51.5	51.5	57.1	57.1	57.1	
a. Management/Administration Costs	22.0		22.0	27.8	27.8	27.8	27.8	27.8	27.8	
Operation Staff Remuneration	16.9		16.9	21.4	21.4	21.4	21.4	21.4	21.4	
Administration Costs	5.1		5.1	6.4	6.4	6.4	6.4	6.4	6.4	
b. Extension Service Costs	0.5		0.5	0.5	0.5	0.5	6.1	6.1	6.1	
Extension Personnel							3.3	3.3	3.3	
Extension Services Costs							1.8	1.8	1.8	
Institutional Guidance Costs							1.0	1.0	1.0	
c. O&M of C/D Center	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
d. O&M of Vehicle(30%)	7.6		7.6	7.6	7.6	7.6	7.6	7.6	7.6	
e. Depreciation Costs of Buildings(3%)	7.5		7.5	7.5	7.5	7.5	7.5	7.5	7.5	
f. Depreciation Costs of Vehicle & Equipment(10%)	4.1		4.1	4.1	4.1	4.1	4.1	4.1	4.1	
2. Variable Costs(US\$1,000)	11.1		16.7	23.5	30.2	38.0	43.9	44.9	46.0	
a. Loading & Un-loading Costs(US\$ 0.9/t)	1.4		2.1	2.9	3.8	4.7	5.5	5.6	5.7	
b. Selection & Packing Costs(US\$ 6.0/t)	9.2		13.9	19.4	25.0	31.4	36.4	37.2	38.1	
c. Miscellaneous ((a + b) * 0.05)	0.5		0.8	1.1	1.4	1.8	2.1	2.1	2.2	
V. Users Fees - Operation Costs(US\$1,000; III - IV)	-32.6		-25.9	-23.1	-14.5	-5.2	-2.4	-0.6	1.3	
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)	-21.0		-14.3	-11.5	-2.9	6.4	9.2	11.0	12.9	
VII. Initial Investment Costs(US\$1,000)										
a. Construction			60.5							
b. Equipment/Facility			15.8							
c. Vehicle(1 ton truck)		1	18.9							
d. Motorcycle(125 cc)		2	6.3							
Total			76.3	25.2	101.5					

Remarks 1: Depreciation Costs of Building --- estimated replacement costs of ASOFRUIT facility US\$ 250,000 x 0.03

Remarks 2: Loading & Un-loading Costs --- loading 10t/4 men x 1.5hr; un-loading 10t/4 men x 1.0hr = 10t/10manhours; labor costs @US\$7.00/8manhours x 10manhours=US\$80.90/t

Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @US\$6.00=US\$6.00/t

Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 3/7: Vallegrande C/D Center

Costs	Year								
	-1st 2002	1st 2003	2nd 2004	3rd 2005	4th 2006	5th 2007	6th 2008	7th 2009	8th & on 2010 & on
I. Target Collection Volumes(t)	2,990	2,990	4,250	5,510	6,770	8,510	10,050	11,810	12,420
II. Annual Handling Amount(US\$1,000)	863.3	1,209.7	1,556.1	1,902.5	2,380.2	2,877.3	3,412.5	3,622.2	
III. Users Fees Collected(US\$1,000; II x 6.0%)	51.8	72.6	93.4	114.2	142.8	172.6	204.8	217.3	
IV. Operation Costs(US\$1,000)									
I. Fixed Costs(US\$1,000)									
a. Management/Administration Costs	89.6	98.8	117.7	126.8	140.4	169.4	182.1	186.5	
Operation Staff Remuneration	68.0	68.0	77.7	77.7	78.7	96.5	96.5	96.5	
Administration Costs	29.5	29.5	38.0	38.0	38.0	38.0	38.0	38.0	
Extension Service Costs	22.7	22.7	29.2	29.2	29.2	29.2	29.2	29.2	
Extension Personnel	6.8	6.8	8.8	8.8	8.8	8.8	8.8	8.8	
Institutional Training Costs	1.0	1.0	1.0	1.0	2.0	19.8	19.8	19.8	
O&M of C/D Center	1.0	1.0	1.0	1.0	2.0	13.0	13.0	13.0	
O&M of Vehicle(30%)	5.0	5.0	5.0	5.0	5.0	4.8	4.8	4.8	
Depreciation Costs of Buildings(3%)	7.6	7.6	8.5	8.5	8.5	2.0	2.0	2.0	
Depreciation Costs of Vehicle & Equipment(10%)	20.3	20.3	20.3	20.3	20.3	5.0	5.0	5.0	
Variable Costs(US\$1,000)	4.6	4.6	4.9	4.9	4.9	8.5	8.5	8.5	
a. Loading & Un-loading Costs(US\$ 0.9/t)	21.7	30.8	39.9	49.0	61.7	72.8	85.6	90.0	
b. Selection & Packing Costs(US\$ 6.0/t)	2.7	3.8	5.0	6.1	7.7	9.0	10.6	11.2	
c. Miscellaneous{(a + b) * 0.05}	17.9	25.5	33.1	40.6	51.1	60.3	70.9	74.5	
Users Fees - Operation Costs(US\$1,000; III - IV)	1.0	1.5	1.9	2.3	2.9	3.5	4.1	4.3	
Users Fees - Operation Costs(US\$1,000; III - IV)	-37.8	-26.2	-24.3	-12.6	2.4	3.3	22.6	30.8	
VII. Initial Investment Costs(US\$1,000)									
a. Construction	1	405.6							
b. Equipment/Facility	1	21.0							
c. Vehicle(1 ton truck)		1	18.9						
d. Motorcycle(125 cc)		2	6.3	1	3.2				
Total		426.6	25.2	3.2	455.0				
Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)		-12.9	-1.3	0.9	12.6	27.6	28.5	47.9	56.0

Remarks 1: Depreciation Costs of Building --- estimated construction costs of facility US\$ 405,600 x 0.03
 Remarks 2: Loading & Un-loading Costs --- loading 10t/4 men x 1.5hr; un-loading 10t/4 men x 1.0hr = 10t/10manhours; labor costs @US\$7.00/8manhours x 10manhours=US\$0.90/t
 Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @US\$6.00=US\$6.00/t
 Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 47: Saipina C/D Center

Costs	Year						
	-1st 2002	1st 2003	2nd 2004	3rd 2005	4th 2006	5th 2007	6th & on 2008 & on
I. Target Collection Volumes(t)	4,570	8,990	10,790	12,980	14,300		
II. Annual Handling Amount(US\$1,000)	942.0	1,854.0	2,225.3	2,672.0	2,942.9		
III. Users Fees Collected(US\$1,000; II x 7.0%)	65.9	129.8	155.8	187.0	206.0		
IV. Operation Costs(US\$1,000)							
1. Fixed Costs(US\$1,000)							
a. Management/Administration Costs	96.6	138.4	160.8	186.1	195.7		
Operation Staff Remuneration	63.5	73.3	82.6	92.1	92.1		
Administration Costs	29.5	38.0	38.0	38.0	38.0		
b. Extension Service Costs	22.7	29.2	29.2	29.2	29.2		
Extension Personnel	6.8	8.8	8.8	8.8	8.8		
Extension Services Costs	1.0	1.0	10.3	19.8	19.8		
Institutional Training Costs			6.5	13.0	13.0		
c. O&M of C/D Center	1.0	1.0	1.0	2.0	2.0		
d. O&M of Vehicle(30%)	5.0	5.0	5.0	5.0	5.0		
e. Depreciation Costs of Buildings(3%)	7.6	7.6	8.5	8.5	8.5		
f. Depreciation Costs of Vehicle & Equipment(10%)	15.8	15.8	15.8	15.8	15.8		
2. Variable Costs(US\$1,000)	4.6	4.6	4.9	4.9	4.9		
a. Loading & Un-loading Costs(US\$ 0.9/t)	33.1	47.3	78.2	94.0	103.6		
b. Selection & Packing Costs(US\$ 6.0/t)	4.1	5.9	9.7	11.7	12.9		
c. Miscellaneous{(a + b) * 0.05}	27.4	39.2	64.7	77.9	85.8		
V. Users Fees - Operation Costs(US\$1,000; III - IV)	1.6	2.3	3.7	4.5	4.9		
VI. Users Fees - Operation Costs(US\$1,000; III - IV)	-30.7	-16.5	-5.0	0.9	10.3		
VII. Initial Investment Costs(US\$1,000)							
a. Construction	-10.2	3.9	12.1	15.8	21.7		31.1
b. Equipment/Facility	528.3						
c. Vehicle(1 ton truck)	1	21.0					
d. Motorcycle(125 cc)	1	18.9					
Total	549.3	3.2	3.2	3.2	577.7		

Remarks 1: Depreciation Costs of Building --- estimated construction costs of facility US\$ 538,300 x 0.03
Remarks 2: Loading & Un-loading Costs --- loading 10t/4 men x 1.5hr; un-loading 10t/4 men x 1.0hr=10t/10manhours; labor costs @US\$7.00/8manhours x 10manhours=US\$90/t
Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @US\$6.00=US\$6.00/t
Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 57: Mairana C/D Center

Costs	Year						
	-1st 2003	1st 2004	2nd 2005	3rd 2006	4th 2007	5th 2008	6th & on 2009 & on
I. Target Collection Volumest(t)		2,300	3,060	4,600	5,360	6,490	7,200
II. Annual Hunding Amount(US\$1,000)		490.0	651.1	980.0	1,141.2	1,381.6	1,538.3
III. Users Fees Collected(US\$1,000; II x 7.5%)		36.8	48.8	73.5	85.6	103.6	115.4
IV. Operation Costs(US\$1,000)		68.7	74.2	91.2	96.7	104.9	115.2
I. Fixed Costs(US\$1,000)		52.0	52.0	57.8	57.8	57.8	63.0
a. Management/Administration Costs		22.0	22.0	27.8	27.8	27.8	27.8
Operation Staff Remuneration		16.9	16.9	21.4	21.4	21.4	21.4
Administration Costs		5.1	5.1	6.4	6.4	6.4	6.4
b. Extension Service Costs		0.5	0.5	0.5	0.5	0.5	0.5
Extension Personnel							3.3
Extension Services Costs							1.4
Institutional Training Costs							1.0
c. O&M of C/D Center		4.5	4.5	4.5	4.5	4.5	4.5
d. O&M of Vehicle(30%)		6.6	6.6	6.6	6.6	6.6	6.6
e. Depreciation Costs of Buildings(3%)		14.6	14.6	14.6	14.6	14.6	14.6
f. Depreciation Costs of Vehicle & Equipment(10%)		3.8	3.8	3.8	3.8	3.8	3.8
2. Variable Costs(US\$1,000)		16.7	22.2	33.3	38.8	47.0	52.2
a. Loading & Un-loading Costs(US\$ 0.9/t)		2.1	2.8	4.1	4.8	5.8	6.5
b. Selection & Packing Costs(US\$ 6.0/t)		13.8	18.4	27.6	32.2	38.9	43.2
c. Miscellaneous{(a + b) * 0.05}		0.8	1.1	1.6	1.8	2.2	2.5
IV. Users Fees - Operation Costs(US\$: III - IV)		-31.9	-25.4	-17.7	-11.1	-1.2	0.2
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)		-13.5	-7.0	0.7	7.3	17.2	18.6
VII. Initial Investment Costs(US\$1,000)							
a. Construction(including land acquisition cost)	Q'ty	Amount	Q'ty	Amount	Q'ty	Amount	Total
	1	491.4					491.4
b. Equipment/Facility	1	15.8					15.8
c. Vehicle(1 ton truck)	1	18.9					18.9
d. Motorcycle(125 cc)	1	3.2					3.2
Total		507.2		22.1			529.3

Remarks 1: Depreciation Costs of Building --- estimated construction costs of facility US\$ 487,100 x 0.03

Remarks 2: Loading & Un-loading Costs --- loading 10t/4 men x 1.5hr; un-loading 10t/4 men x 1.0hr = 10t/10manhours, labor costs @US\$7.00/8manhours x 10manhours=US\$0.90/t

Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @US\$6.00=US\$6.00/t

Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 6/7: Pampa Grande C/D Center

Costs	Year						
	-1st 2003	1st 2004	2nd 2005	3rd 2006	4th 2007	5th 2008	6th & on 2009 & on
I. Target Collection Volumes(t)	3,020		4,540	7,640	9,160	11,160	12,540
II. Annual Handling Amount(US\$1,000)	595.2		894.8	1,504.5	1,803.7	2,194.0	2,467.9
III. Users Fees Collected(US\$1,000; II x 7.5%)	44.6		67.1	112.8	135.3	164.6	185.1
IV. Operation Costs(US\$1,000)	89.7		100.7	132.9	143.9	158.4	179.5
1. Fixed Costs(US\$1,000)	67.8		67.8	77.6	77.6	77.6	88.7
a. Management/Administration Costs	29.5		29.5	38.0	38.0	38.0	38.0
Operation Staff Remuneration	22.7		22.7	29.2	29.2	29.2	29.2
Administration Costs	6.8		6.8	8.8	8.8	8.8	8.8
b. Extension Service Costs	1.0		1.0	1.0	1.0	1.0	12.1
Extension Personnel							6.5
Extension Services Costs							3.6
Institutional Training Costs							2.0
c. O&M of C/D Center	6.0		6.0	6.0	6.0	6.0	6.0
d. O&M of Vehicle(30%)	7.6		7.6	8.5	8.5	8.5	8.5
e. Depreciation Costs of Buildings(3%)	19.1		19.1	19.1	19.1	19.1	19.1
f. Depreciation Costs of Vehicle & Equipment(10%)	4.6		4.6	4.9	4.9	4.9	4.9
2. Variable Costs(US\$1,000)	21.9		32.9	55.4	66.4	80.9	90.9
a. Loading & Un-loading Costs(US\$ 0.9/t)	2.7		4.1	6.9	8.2	10.0	11.3
b. Selection & Packing Costs(US\$ 6.0/t)	18.1		27.2	45.8	55.0	67.0	75.2
c. Miscellaneous{(a + b) * 0.05}	1.0		1.6	2.6	3.2	3.9	4.3
V. Users Fees - Operation Costs(US\$1,000; III - IV)	-45.0		-33.6	-20.1	-8.7	6.1	5.6
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)	-21.3		-9.8	4.0	15.4	30.2	29.6
VII. Initial Investment Costs(US\$1,000)							
a. Construction(including land acquisition cost)	1	642.1					642.1
b. Equipment/Facility	1	21.0					21.0
c. Vehicle(1 ton truck)		1	18.9				18.9
d. Motorcycle(125 cc)		2	6.3		1	3.2	9.5
Total		663.1	25.2	3.2			691.5

Remarks 1: Depreciation Costs of Building --- estimated construction costs of facility US\$ 636,800 x 0.03
Remarks 2: Loading & Un-loading Costs --- loading 100/4 men x 1.5hr; un-loading 100/4 men x 1.0hr = 100/10manhours; labor costs @US\$7.00/8manhours x 10manhours=US\$0.90/t
Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @US\$6.00=US\$6.00/t
Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 7/7: Comarapa C/D Center

Costs	Year							6th & on 2009 & on
	-1st 2003	1st 2004	2nd 2005	3rd 2006	4th 2007	5th 2008	6th & on 2009 & on	
I. Target Collection Volumes(t)	2,610		3,480	4,340	5,200	6,450	7,110	
II. a. Annual Handling Amount(US\$1,000)	587.6		784.8	977.8	1,170.8	1,452.6	1,622.3	
III. Users Fees Collected(US\$1,000; II x 7.5%)	44.1		58.9	73.3	87.8	108.9	121.7	
IV. Operation Costs(US\$1,000)	69.2		75.5	87.6	93.8	103.4	117.4	
I. Fixed Costs(US\$1,000)	50.3		50.3	56.1	56.1	56.6	65.9	
a. Management/Administration Costs	22.0		22.0	27.8	27.8	27.8	27.8	
Operation Staff Remuneration	16.9		16.9	21.4	21.4	21.4	21.4	
Administration Costs	5.1		5.1	6.4	6.4	6.4	6.4	
b. Extension Service Costs	0.5		0.5	0.5	0.5	1.0	10.3	
Extension Personnel							6.5	
Extension Services Costs	0.5		0.5	0.5	0.5	1.0	2.8	
Institutional Training Costs	4.0		4.0	4.0	4.0	4.0	1.0	
c. O&M of C/D Center	7.6		7.6	7.6	7.6	7.6	4.0	
d. O&M of Vehicle(30%)	12.2		12.2	12.2	12.2	12.2	7.6	
e. Depreciation Costs of Buildings(3%)	4.1		4.1	4.1	4.1	4.1	12.2	
f. Depreciation Costs of Vehicle & Equipment(10%)	18.9		25.2	31.4	37.7	46.7	4.1	
2. Variable Costs(US\$1,000)	2.3		3.1	3.9	4.7	5.8	51.5	
a. Loading & Un-loading Costs(US\$ 0.9/t)	15.7		20.9	26.0	31.2	38.7	6.4	
b. Selection & Packing Costs(US\$ 6.0/t)	0.9		1.2	1.5	1.8	2.2	42.7	
c. Miscellaneous{(a + b) * 0.05}	-25.2		-16.7	-14.2	-6.0	5.6	2.5	
V. Users Fees - Operation Costs(US\$1,000; III - IV)	-8.9		-0.4	2.0	10.3	21.9	4.2	
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)								
VII. Initial Investment Costs(US\$1,000)								
a. Construction	1	405.6						
b. Equipment/Facility	1	15.8						
c. Vehicle(1 ton truck)	1	18.9						
d. Motorcycle(125 cc)	2	6.3						
Total		421.4		25.2		446.6		

Remarks 1: Depreciation Costs of Building --- estimated construction costs of facility US\$ 405,600 x 0.03

Remarks 2: Loading & Un-loading Costs --- loading 10t/4 men x 1.5hr; un-loading 10t/4 men x 1.0hr = 10t/10manhours; labor costs @ US\$7.00/8manhours x 10manhours=US\$0.90/t

Remarks 3: Selection & Packing Costs --- 1ton/1manday; labor costs @ US\$6.00=US\$6.00/t

Remarks 4: VI. Users Fees - Operation Costs --- operation costs not including depreciation costs

Table A.1.5-8 Summary of Operation Plans and Cash Flow Analyses

C/D Center	Operation Plan	Projected Cash Flow
San Isidro Users Fees: 7.5%	<ul style="list-style-type: none"> - Operation deficits for initial 1 year. - Full depreciation amounts will be reserved from 6th year. - Operation surplus at the full operation stage estimated at US\$ 22.5 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits in one year in 2005. - Financing of some US\$170 thousand required for replacement/reconstruction of existing building in 2016. - 2nd replacement/reconstruction of C/D center will be financed with reserved fund of annual operation surplus.
Samaiyata Users Fees: 7.5%	<ul style="list-style-type: none"> - Operation deficits for initial 4 years. - Full depreciation amounts will be reserved from 12th year. - Operation surplus at the full operation stage estimated at US\$ 12.9 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits from 2007 to 2011. - Financing of some US\$220 thousand required for replacement/reconstruction of existing building in 2018. - 2nd replacement/reconstruction of C/D center will be financed with reserved fund of annual operation surplus.
Vallegrande Users Fees: 6.0%	<ul style="list-style-type: none"> - Operation deficits for initial 2 years. - Full depreciation amounts will be reserved from 6th year. - Operation surplus at the full operation stage estimated at US\$ 56.0 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits in one year in 2007. - Replacement/reconstruction of C/D center will be financed with reserved fund of annual operation surplus. - Users fees should better be revised(reduced) based on operation results.
Saipina Users Fees: 7.0%	<ul style="list-style-type: none"> - Operation deficits for initial 1 year. - Full depreciation amounts will be reserved from 5th year. - Operation surplus at the full operation stage estimated at US\$ 31.1 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits in one year in 2005. - Replacement/reconstruction of C/D center will be financed with reserved fund of annual operation surplus.
Mairana Users Fees: 7.5%	<ul style="list-style-type: none"> - Operation deficits for initial 2 years. - Full depreciation amounts will be reserved from 7th year. - Operation surplus at the full operation stage estimated at US\$ 18.6 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits in two years in 2008 & 2009. - Financing of some US\$110 thousand required for replacement/reconstruction of C/D center in 2035.
Pampa Grande Users Fees: 7.5%	<ul style="list-style-type: none"> - Operation deficits for initial 2 years. - Full depreciation amounts will be reserved from 6th year. - Operation surplus at the full operation stage estimated at US\$ 29.6 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits in one year in 2008. - Replacement/reconstruction of C/D center will be financed with reserved fund of annual operation surplus.
Comarapa Users Fees: 7.5%	<ul style="list-style-type: none"> - Operation deficits for initial 2 years. - Full depreciation amounts will be reserved from 5th year. - Operation surplus at the full operation stage estimated at US\$ 20.5 thousand. 	<ul style="list-style-type: none"> - Repayment of loan for initial operation deficits in two years in 2007 & 2008. - Replacement/reconstruction of C/D center will be financed with reserved fund of annual operation surplus.

Remarks: Operation deficits & operation surplus ---- Users Fees - Operation Costs not including depreciation costs

Table A.1.5-9 Projected Cash Flow of C/D Centers - 1/4

C/D Center: San Isidro C/D Center	Year																	Unit: US\$ 1,000						
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	2018	2019	2020	2021	2022 - 2048
I. Cash Inflow																								
1. Initial Investment	109.7	25.2	3.2																					
2. Cash Reserve	62.5	83.4	104.2	125.0	150.8	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	
3. Users Fees																								
4. Long Term Loan	10.6																							
Total	109.7	98.3	83.4	107.4	125.0	150.8	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	
II. Cash Outflow																								
1. Investment Costs	88.7																							
- C/D Development																								
- Facility/Equipment	21.0																							
- Vehicle/Motorcycle	25.2	3.2																						
Subtotal	109.7	25.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2. C/D Operation Costs	0.0	73.1	83.1	102.6	112.6	125.1	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	
Total	109.7	98.3	83.1	105.8	112.6	125.1	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	143.5	
III. Cash Surplus/Deficit	0.0	0.0	0.3	1.6	12.4	25.7	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
IV. Loan Repayment: Principal																								
Interest(12%)																								
Total																								
V. Cumulative Cash Reserve																								
Remarks 1: Long Term Loan --- assuming long term loan provided by municipal government to C/D at interest 12% for initial operation costs																								
Remarks 2: Initial Investment in 2016 --- part of replacement costs financed by FDC or public financing sources																								
Remarks 3: C/D Operation Costs --- not including depreciation costs																								
C/D Center: Samaipata C/D Center																								
I. Cash Inflow																								
1. Initial Investment	76.3	25.2																						
2. Cash Reserve	24.1	36.5	51.8	67.2	84.2	98.5	101.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	
3. Users Fees	21.0	14.3	11.5	2.9																				
4. Long Term Loan	76.3	70.3	50.8	63.3	70.1	84.2	98.5	101.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	
Total	197.7	146.3	114.3	142.7	168.7	183.2	199.9	205.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	208.8	
II. Cash Outflow																								
1. Investment Costs	60.5																							
- C/D Development																								
- Facility/Equipment	15.8																							
- Vehicle/Motorcycle	25.2																							
Subtotal	76.3	25.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2. C/D Operation Costs	45.1	50.8	63.3	70.1	77.8	89.4	90.4	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	
Total	76.3	70.3	50.8	63.3	70.1	77.8	89.4	90.4	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	
III. Cash Surplus/Deficit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
IV. Loan Repayment: Principal																								
Interest(6%)																								
Total																								
V. Cumulative Cash Reserve																								
Remarks 1: Long Term Loan --- assuming long term loan provided by municipal government to C/D at interest 6% for initial operation costs																								
Remarks 2: Initial Investment in 2018 --- most of replacement costs financed by FDC or public financing sources																								
Remarks 3: C/D Operation Costs --- not including depreciation costs																								

Table A.1.5-9 Projected Cash Flow of C/D Centers - 2/4

Unit: US\$ 1,000

C/D Center: Vallegrande C/D Center	Year																						
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 - 2034		
I. Cash Inflow	426.6	25.2		3.2							21.0	25.2	3.2								501.2	0.0	
1. Initial Investment																							
2. Cash Reserve																							
3. Users Fees	51.8	72.5	93.4	114.2	142.8	172.6	204.8	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	217.3	2,824.9	
4. Long Term Loan	12.9	1.3																					0.0
Total	426.6	89.9	73.9	96.6	114.2	142.8	204.8	217.3	217.3	217.3	238.3	242.5	217.3	220.5	217.3	217.3	217.3	217.3	217.3	217.3	217.3	3,326.1	
II. Cash Outflow	405.6										21.0											405.6	
- C/D Development	21.0																					42.0	
- Facility/Equipment																							
- Vehicle/Motorcycle	25.2			3.2							25.2			3.2								53.6	
Subtotal	426.6	25.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	21.0	25.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	501.2	
2. C/D Operation Costs	0.0	64.7	73.9	92.4	101.6	115.2	144.1	156.9	161.3	161.3	161.3	161.3	161.3	161.3	161.3	161.3	161.3	161.3	161.3	161.3	161.3	2,096.9	
Total	426.6	89.9	73.9	95.6	101.6	115.2	144.1	156.9	161.3	161.3	182.3	186.5	161.3	164.5	161.3	161.3	161.3	161.3	161.3	161.3	161.3	2,598.1	
III. Cash Surplus/Deficit	0.0	0.0	0.0	1.0	12.6	27.6	28.5	47.9	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	728.0	
IV. Loan Repayment Principal																							
Interest (12%)																							
Total																							
V. Cumulative Cash Reserve				1.0	13.6	20.3	48.8	96.7	152.7	208.7	243.7	274.5	330.5	383.3	439.3	495.3	551.3	607.3	663.3	719.3		890.1	

Remarks 1: Long Term Loan --- assuming long term loan provided by municipal government to C/D at interest rate 12% for initial operation costs
 Remarks 2: C/D Operation Costs --- not including depreciation costs

C/D Center: Saipina C/D Center	Year																						
Items	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022-2034		
I. Cash Inflow	549.3	25.2		3.2							21.0	25.2	3.2									0.0	
1. Initial Investment																							
2. Cash Reserve																							
3. Users Fees	65.9	94.3	129.8	155.8	187.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	2,678.0	
4. Short Term Loan	10.3																						0.0
Total	549.3	101.4	94.3	133.0	155.8	187.0	206.0	206.0	206.0	206.0	227.0	231.2	206.0	209.2	206.0	206.0	206.0	206.0	206.0	206.0	206.0	3,301.9	
II. Cash Outflow	528.3																					528.3	
- C/D Development	21.0																					21.0	
- Facility/Equipment																							
- Vehicle/Motorcycle	25.2			3.2							25.2			3.2								28.4	
Subtotal	549.3	25.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	21.0	25.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	577.7	
2. C/D Operation Costs		76.2	90.4	117.7	140.0	165.4	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	2,273.7	
Total	549.3	101.4	90.4	120.9	140.0	165.4	174.9	174.9	174.9	174.9	195.9	200.1	174.9	174.9	178.1	174.9	174.9	174.9	174.9	174.9	174.9	2,851.4	
III. Cash Surplus/Deficit	0.0	0.0	3.9	12.1	15.8	21.6	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	450.5	
IV. Loan Repayment Principal																							
Interest (12%)																							
Total																							
V. Cumulative Cash Reserve				3.9	3.2	19.0	40.6	71.7	102.8	133.9	165.0	175.1	181.0	212.1	240.0	271.1	302.2	333.3	364.4	395.5	426.6	253.2	

Remarks 1: Short Term Loan --- assuming short term loan provided by municipal government to C/D at interest rate 12% for initial operation costs
 Remarks 2: C/D Operation Costs --- not including depreciation costs