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

			면	Florida					Comarapa	гара			Vallegrande	ande
	Samaip	Samaipata Area	Mairan	Mairana Area	Pampa Grande Area	ande Area	Comarapa Area	pa Area	San Isidro Area	ro Area	Saipina Area	a Area	Vallegrande Area	de Arca
	Cropped		Cropped		Cropped		Cropped		Cropped		Cropped		Cropped	
ū	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Crops	(ha)	Ξ	(ha)	E	(ha)	Ξ	(ha)	Ξ	(ha)	9	(ha)	(c)	(ha)	Ξ
1. Cereals & Beans														Ì
Maize	2,900	6,380	6,200	13,640	2,500	5,500	n.a.	п.а.	п.а.	n.a.	n.a.	n.a.	6,200	13,640
Wheat	٠						n.a.	n.a.	п.а.	n.a.	п.а.	n.a.	986	1,080
Beans	1.188	1,650	700	1,050	200	750	n.a.	п,а,	n.a.	n.a.	n.a.	п.а.		
Others	50	20	100	901	100	100	п.а.	n.a.	n.a.	п.а.	n.a.	п.а.		
Sub-total Sub-total	4.050	8.080	7,000	14,790	3,100	6,350			0	0	0	0	7,100	14,720
2. Vegetables														
Potatoes	470	5,170	140	1,680	300	3,600	290	3,190	200	6,000	089	7,480	8	9,900
Tomato	70	1,050	110	1,650	240	4,080	100	1,700	220	3,740	430	7,310	100	1,500
Lettuce	. 50	1,000	110	2,200	240	4,800								
Choclo									220	1,320				
Others	30	150	100	1,000	420	2,100	210	1,050	490	4,900	340	1,700	50	200
Sub-total	620	7.370	460	6,530	1,200	14,580	009	5,940	1,430	15,960	1,450	16,490	1,050	11,900
3. Fruits														
Peach	30	300	110	1,100	50	200							120	1,200
Plum													20	200
Citrus	<u>8</u>	000,1	50	200	80	800								
Others	9	009	06	006				400					180	1,800
Sub-total	130	1.900	250	2,500	130	1,300	40	400	0	0	0	0	350	3,500
4. Others							-							
Tobacco	760	1,060	400	260			n.a.	n.a.	n.a.	n.a.	п.а.	n.a.		
Sugarcane					30	1,200	п.а.	п.а.	п.а.	п.а.	250	15,000	200	8,000
Others	80	3,200					n.a.	п.а.	n.a.	n.a.	n.a.	п.а.		
Sub-total	840	4,260	400	999	30	1,200			0	0	250	15,000	200	8,000
Total	5.700	21.610	8.110	24.380	4,460	23.430	040	6.340	1.430	15.960	1 700	31,490	8.700	38.120
									ı			***************************************		

Kemarks 1: Samapata, Marana, Pampa Grande, Saipina & Valiegrande: 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

1. Cereals & beans include groundnut & others Remarks 4: "Others" in 2. Vegetables include green pepper, beans, peas, cabbage, onion, carrot etc.

Remarks 6: "Others" in 4. Others include sugarcane, cassava etc.

Samaipata: Plan Participativo de Desarrollo Municipal Sostenible, 1997, Municipal de Samaipata Remarks 5: "Others" in 3. Fruits include grape, apple

Pampa Grande: Data presented by CIAT & municipal office, Pampa Grande

Comarapa & Saipina: Data presented by PRICRUZ
San Isidro-Puluquina Abajo, 1992, CORDECRUZ; Data presented by CIAT/ASOHFRUT, 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

				500				
Practices		Potato	٠.	Tomato		Lettuce		Carrot
Land Preparation	Ploughing, har Ridging by dra	Ploughing, harrowing & ridging mechanically Ridging by draft animal is partly practiced	Ploughing, hz Ridging by d	Ploughing, harrowing & ridging mechanically Ridging by draft animal is partly practiced	Ploughing, h Ridging by d	Ploughing, harrowing & ridging by tractor Ridging by draft animal is partly practiced	Ploughing, h Ridging by c	Ploughing, harrowing & ridging by tractor Ridging by draft animal is partly practiced
Variety	Weicha & Hollandia	kındia	Rio Grande, 1	Rio Grande, Rio Fuego, Sta. Clara etc.	Crespa		Chantenay, Brazilia	Srazilia
Seeding Rate	1.5 - 2.0 t/ha		0.5 - 1.0 kg/h	0.5 - 1.0 kg/ha; 0.7 kg/ha in average	1.0 - 2.0 kg/h	1.0 - 2.0 kg/ha; 1.6 kg/ha in average	8 kg/ha in average	erage
Fertilization	N: 60 kg/ha: F K2O & manure	N: 60 kg/ha: K2O & manure: not common	N: 45 kg/ha; K2O: not con	N: 45 kg/ha; P2O5: 30 kg/ha; K2O: not common; manure: 2.5 tha(not common) K2O & manure: not common	N: 40 kg/ha; K2O & manı	N: 40 kg/ha; P2O5; 50 kg/ha; K2O & manure: not common	N: 20 kg/ha; K2O & man	N: 20 kg/ha; P2OS: 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	Fungicide:	Dithane, Antracol etc. 14 kg/ha Periodical application mixed with insecticide; every week or more	Fungicide:	Antracol etc. avg. 4 kg/ha Periodical application mixed with insecticide	Fungicide:	Antracol etc. avg. 1 kg/ha
	Insecticide:	Cipadul, Karate etc. avg. 4 kg/ha Periodical application mixed with fungicide; every week or more	Insecticide:	Match, Karate etc. avg. 7 kg/ha Periodical application mixed with fungicide: every week or more	Insecticide:	Karate, Thodoron etc. avg. 3 kg/ha	Insecticide:	Cypadur avg. 0.6 kg/ha
	Herbicide:	not common	Herbicide:	not common	Herbicide:	not common	Herbicide:	Cesa Gardo: 1.8 kg/ha
Irrigation	Depending on soil condit Generally once per week	Depending on soil conditions & location; Generally once per week	Depending on soil conditions of the Generally once per week	Depending on soil conditions & location; Generally once per week	Depending on soil condi- Generally once per week	Depending on soil conditions & location; Generally once per week	Depending on soil condi Generally once per week	Depending on soil conditions & location; Generally once per week
Labour Inputs	Planting: Chemical spray Weeding: Harvesting: Total 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: Chemical: Weeding: Harvesting: Total Inputs:	9 mandays/ha in average 29 mandays/ha in average 14 mandays/ha in average 51 mandays/ha in average 130 mandays/ha in average	Planting: Chemical: Weeding: Harvesting: Total Inputs:	8 mandays/ha in average 8 mandays/ha in average 32 mandays/ha in average 64 mandays/ha in average 129 mandays/ha in average	Planting: Chemical: Weeding: Harvesting: Total Inputs:	3 mandays/ha in average 3 mandays/ha in average 22 mandays/ha in average 131 mandays/ha in average
	Over 90 % of 1s by hired labour	Over 90 % of labour requirements sufficed Over 90 % of labour receipt by hired labour	Over 90 % of 1s by hired labour	Over 90 % of labour requirements sufficed by hired labour	About 75 % of labour resufficed by hired labour	About 75 % of labour requirements sufficed by hired labour	Over 90 % of labour rec	Over 90 % of labour requirements sufficed by bired labour

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

		Commercialization	Current Major Destination M	larkets	
	Major Producing Areas	Rate(%)	Destination Market	T	Reasons to
Commodity	Village	(Assumed)	Markets	%	Chose Destination Market
Potatoes	Lajos, Bermejo, Lanegra,		Abasto	100	Nearest wholesale market
	Santiago Valle, Paredonas,	80	Other markets in St. Cruz		
	San Isidro, Empinado, Monta gulo,	·	Cochabamba		
	Vallealto, Bella Victoria	<u></u>	Others		:
Vegetables	Bermejo, Paredenes,		Abasto	100	Nearest wholesale market
•	Bella Victoria, Puerto Limon,	85	Other markets in St. Cruz		·
	Sivingalito	<u> </u>	Cochabamba		
Citrus	Bermejo, Cuevas, Nohiras,	·	Abasto	80	Nearest wholesale market
	Floripandio, Bella Vista	85	Other markets in St. Cruz	10	•
			Others(processing factory)	10	
Peach/Plum	Cuevas, Nohiras, Sivingalito		Abasto	80	Nearest wholesale market
		85	Other markets in St. Cruz	10	
	ion of shipping volume:		Others(processing factory)	10	

- 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 mot 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 (o	or home) under shade	
	Grading: 3 sizes in potatoes, tomato & f	ruits(large, medium & small)	
Packing	Potatoes: plastic bag(46kg) To Lettuce, pepper, cauliflower: bamboo ba	omato: wooden box(20kg) Fi	ruits: wooden box(20kg)
Collection &	harvesting: I day prior to shipment; in c	ase of lettuce, early morning on shin	ning day
Shipping System	Collection & Shipping Methods: 1 to 2 d	ays before harvesting arrange shippi	ing schedule with transporter or buyer
	farm → far	rn depot or trunk roadside	destination markets
	(manual/draft animal)		ng on 4 - 5t truck)
	Shipment Time: From 6 a.m. to 6 p.m.,	generally in the afternoon	
	Distribution System/Marketing Channel	& Payment Terms:	
	Primary Case:	•	
	<u></u>	in cash(5 - 8 hours after selling)	
	farm depot or trunk roadside	-	direct selling to wholesaler at market
•		transporter + producer	(sometimes sold to retailer)
	Secondary Case:		
		in cash(5 - 8 hours after selling)	
· ·	farm depot or trunk roadside		direct selling to wholesaler at market
	Tertiary Case:	producer with own truck	(sometimes sold to retailer)
	farm depot or trunk roadside	in cash or after selling at market	
	Tarm depot of trank toadside	intermediary(consignee/buyer)	wholesaler at market
Others	Market Information: from fellow produc	ers returned from market	
•	In irrigated areas(potatoes & vegetable g	rowing areas), loading sites are at fa	rm or close to farms
	Transshipment: In case of fruits or produ	ict volume limited, transshipment fro	im small car to truck at main roadside
	Distance to Destination Markets: Sai	maipata St. Cruz 120 km/3.0 hr	e

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

		Commercialization	Current Major Destination I	Markets	
	Major Producing Areas	Rate(%)	Destination Market		Reasons to
Commodity	Village	(Assumed)	Markets	%	Chose Destination Markets
Potatoes	B. Quebredas, Yerba Buena,	80	Abasto	90	- nearest wholesale market
	Militar, Venadillo, Pozuelo		Other markets in St. Cruz	10	
Tomato	Bs. Cruces, Rio Nuevo, Alto de		Abasto	80	- nearest wholesale market
	Mairana, Mairana	85	Other markets in St. Cruz		
			Cochabamba	20	- Cochabamba when good price
Lettuce	La Yunga, La Colpa, Rio Nuevo,		Abasto	95	- nearest wholesale market
	Villa Sanisidro, Vella Vista	85	Other markets in St. Cruz.	5	<u>.</u> •
			Cochabamba		
Peach	Mendiola, Vella Vista	85	Markets in St. Cruz	100	- mainly to Abasto
			Cochabamba		
Grape	La Yunga, Alto de Mairana,	85	Markets in St. Cruz	100	- mainly to Abasto
	Vella Vista		Cochabamba		

Daily fluctuation of shipping volume:

- 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. Prevalling 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 Tomato: wooden box(20kg) Potatoes: plastic bag(110kg) Fruits; wooden box(20kg) Lettuce, pepper, cauliflower: bamboo basket(25kg) Collection & Harvesting: I day prior to shipment; in case of lettuce at early morning of shipping day Shipping System Collection & Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer farm depot or trunk roadside destination markets farm (mostly manual) (loading on 4 - 5t truck) Shipment Time: Friday from 6am to 6pm, Monday from 2pm to 7pm & Wednesday from 4pm to 7pm Distribution System/Marketing Channel & Payment Terms: Primary Case: in cash(5 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside transporter + producer (sometimes sold to retailer/consumer) Secondary Case: in cash(5 - 8 hours after selling) farm depot or trunk roadside direct selling to wholesaler at market (sometimes sold to retailer/consumer) producer with own truck Tertiary Case: in cash farm depot or trunk roadside wholesaler at market intermediary(buyer) Others Market Information: from fellow producers returned from market In irrigated areas(vegetable growing areas), loading sites are at farm or close to farms. Mairana ---- St. Cruz 137 km/4,0 hrs.; Mairana ---- Cochabamba 12.0 hrs. Distance to Destination Markets:

3. Marketing of Cereals & Beans

Maize: almost all consumed locally including supply to corn flower 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	Producine	Areas and	Destination	Markets	by	Commodity
1.	Maror	1 COUULINE	A I cas anu	Destination	MININCES	.,,	Commons

2111111901 220		Commercialization	Current Major Destination M	larkets	
		Rate(%)	Destination Market		Reasons to
Commodity	Major Producing Areas	(Assumed)	Markets	%	Chose Destination Markets
Potatoes	Los Negros, Pocay, Santa Rosa,		Abasto	100	- nearest wholesale market
	Palmasola	90	Other markets in St. Cruz		- Cochabamba is largest potato
		seed potato procured	Cochabamba		producer
Tomato	Los Negros, Pocay, Santa Rosa,		Abasto	90	- nearest wholesale market
, dilikito	Palmasola	85	Cochabamba	10	- small size products preferred in
			Others		Cochabamba market
Lettuce	Los Negros, Pocay, Santa Rosa,		Abasto	40	- large demand from May-July in
135111100	Palmasola	85	Other markets in St. Cruz		Cochabamba(trans-shipped to
			Cochabamba & others	60	Lapatz partly)
Other	Los Negros, Pocay, Santa Rosa,		Abasto	80	- nearest wholesale market
Vegetables	Palmasola	85	Markets in St. Cruz	T	- Cochabamba when good
. 080	100		Cochabamba	20	market prices
Fruits	Los Negros, Pocay, Pampa Grande	85	Abasto	60	- production limited
1			Others(local market)	40	1

Daily fluctuation of shipping volume:

- 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

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 &	Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day
hipping System	Collection & Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer
	farm depot or trunk roadside destination markets
	(mostly manual) (loading on 5 - 6t truck)
	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:
* * *	in cash(6 - 8 hours after selling)
	farm depot or trunk road side direct selling to wholesaler at mark
	transporter + producer (sometimes sold to retailer)
	Secondary Case:
	in cash(6 - 8 hours after selling)
	farm depot or trunk road side direct selling to wholesaler at market
	producer with own truck (sometimes sold to retailer)
	Tertiary Case:
	in cash
	farm depot or trunk road side wholesaler at market
	intermediary(buyer)
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).
1:-	Distance to Destination Markets: Los Negros St. Cruz 170km/5.5hrs.; Los Negros Cochabamba 330km/11.5h

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)

⁻ 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.

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

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

Daily fluctuation of shipping volume:

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 & Harvesting: I day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Shipping System Collection & Shipping Method: I to2 days before harvesting arrange shipping schedule with transporter or buyer farm depot or trunk roadside farm destination markets (mostly manual) (loading on 10-12t truck) 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: in cash(6 - 8 hours after selling) farm depot or trunk roadside direct selling to wholesaler at market transporter + producer (sometimes sold to retailer) Secondary Case: in cash(6 - 8 hours after selling) direct selling to wholesaler at market (sometimes sold to retailer) farm depot or trunk roadside producer with own truck Tertiary Case: in cash at field/after selling at market farm depot or trunk roadside wholesaler at market intermediary(consignee/buyer) 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

⁻ 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.

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

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

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 Potatoes, carrot & onion: plastic bag(100kg) Tomato: wooden box(20kg) Fruits: wooden box(20kg) Packing Choclo: plastic bag(150-200pcs) Harvesting: 1 day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Collection & Collection Shipping Method: 1 to 2 days before harvesting arrange shipping schedule with transporter or buyer Shipping System farm depot or trunk roadside destination markets farm (mostly manual/partly tractor) (loading on 10t truck) 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: Potatoes/onion/carrot: Primary Case: in cash(6 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside transporter + producer (sometimes sold to retailer) Potatoes, onion/carrot: Secondary Case: in cash(6 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside (sometimes sold to retailer) producer with own truck Other vegetable & fruits: Primary Case: in cash(6 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside (sometimes sold to retailer) transporter + producer Other vegetable & fruits: Secondary Case: after selling at market wholesaler at market farm depot or trunk roadside intermediary(consignee) Other vegetables & fruits: Thirdly Case: in cash(6 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside (sometimes sold to retailer) producer with own truck 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. San Isidro --- St. Cruz 223 km/6.5 hrs.; San Isidro --- Cochabamba 10.5 hrs. Distance to Destination Markets: 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

		Commercialization	Current Major Destination M	1arkets	
	·	Rate(%)	Destination Market		Reasons to
Commodity	Major Producing Areas	(Assumed)	Markets	%	Chose Destination Markets
Potatoes	Banados, Chilon, Saipina,		Abasto	30	- large market demand in
	San Rafael	90	Other markets in St. Cruz		Cochabamba (transshipment
		seed potato procured	Cochabamba	70	to mining areas)
Tomato	Banados, Chilon, Saipina,		Abasto	5	 large market demand in
	San Rafael	85	Other markets in St. Cruz		Cochabamba (transshipment
•			Cochabamba	95	to mining areas)
Onion	Banados, Chilon, Saipina,		Abasto	100	 large production areas in
	San Rafael	85	Cochabamba		Cochabamba
Green Pepper	Banados, Chilon, Saipina,		Abasto	50	- consumption/demand high in
	San Rafael	85	Markets in St. Cruz		St. Cruz
٠.			Cochabamba	50	
Others	Banados, Chilon, Saipina,	85	Abasto		
	San Rafael		Others(local market)	100	

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 & Harvesting: I day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Shipping System Collection & Shipping Method: 1 to 2 days before harvesting, arrange shipping schedule with transporter or buyer Prevailing system farm depot or trunk roadside destination markets farm (loading on 10-15t truck on Tues/Fri.) (mostly manual) (loading on 4 - 5t truck on other days) Minor system transshipment loading site at Saipina farm 1 - 2t truck 10 - 15t truck 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: 2 days after delivery wholesaler at market farm depot or trunk roadside middleman(consignment) Secondary Case: in cash(6 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside (sometimes sold to retailer) transporter + producer Tertiary Case: in cash(6 - 8 hours after selling) farm depot or trunk roadside direct selling to wholesaler at market producer with own truck (sometimes sold to retailer) 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)

Shipping of tomato & green pepper is generally on 2 days/week, Tuesday & Friday and selling on next day; Wednesday & Saturday

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

		Commercialization	Current Major Destination N	// Aarkets	
	Major Producing Areas	Rate(%)	Destination Market		Reasons to
Commodity	Village	(Assumed)	Markets	%	Chose Destination Markets
	St. Rosita, Las Quevas, Huantas,		Abasto	100	- production of Holland variety
	Temporal	80	Cochabamba		not preferred in Cochabamba
Tomato	St. Rosita, Las Quevas, Huantas,		Abasto ·	95	- nearest wholesale market
	Temporal	85 ·	Cochabamba		 road conditions poor to
			Others(local market)	5	Cochabamba
Green Pepper	St. Rosita, Las Quevas, Huantas,		Abasto	95	- nearest wholesale market
• • • •	Temporal	85	Cochabamba		- road conditions poor to
			Others(local market)	5	Cochabamba
Lettuce	St. Rosita, Las Quevas, Huantas,		Abasto	95	 nearest wholesale market
	Temporal	85	Cochabamba		- road conditions poor to
		•	Others(local market)	5	Cochabamba
Fruits	Guadalupe, Chacopata, Est. Huaico		Abasto	75	- nearest wholesale market
		85	Cochabamba		- road conditions poor to
			Others(local market)	25	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 Green pepper:plastic bag(30kg) Tomato: wooden box(22kg) Potatoes & onion: plastic bag(100kg) Packing

Apple: wooden box(50kg) Lettuce: bamboo basket(20-25kg) Plum: wooden box(25kg) Peach: wooden box(100kg)

Harvesting: I day prior to shipment; in case of lettuce & strawberry at early morning of shipping day Collection & Collection & Shipping: 1 to 2 days before harvesting, arrange shipping schedule with transporter or buyer Shipping System

Prevailing system destination markets farm depot or trunk roadside farm (loading on 9t truck) (mostly manual) Secondary system transshipment at Vallegrande farm loading site 9t truck 4 - 5t truck

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: 40% in cash & the balance 3 days after delivery wholesaler at market farm depot or trunk roadside intermediary(buyer) Secondary Case:

in cash(6 - 8 hours after selling) direct selling to wholesaler at market farm depot or trunk roadside (sometimes sold to retailer) transporter + producer

Tertiary Case(only for tomato marketing):

Market Information: from fellow producers returned from market

3 days after delivery wholesaler at market farm depot or trunk roadside intermediary(consignee)

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

Others

Maize: mostly consumed locally Beans: sold to St. Cruz through intermediary(seed purpose etc.)

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

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

			Florid	a		Caballero		Vallegrande
Commodity		Samaipata	Mairana	Pampa Grande	Comarapa	San Isidro	Saipina	Vallegrande
otatoes	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(%)	i						
	St. Cruz(%)	100	100	100	60	70	30	100
	Cochabamba(%)	0	0	0	40	30	70	(
	Local(%)	0	0	0			1, 1	
	Destination Market: Volume(t)	•	_	•				
	St. Cruz(t)	4,136	i 344	3,240	1,531	3,780	2,020	7,92
	Cochabamba(t)	0	0	0	1,021	1,620	4,712	
	Local(t)	0	0	0	0	0	0	
fomato	Production(t)	1,050	1,650	4,080	1,700	3,740	7,310	1,50
Omato	Commercialization(%)	85	85	85	85	85	85	. : 8
	Marketing Volume(t)	893	1,403	3,468	1,445	3,179	6,214	1,27
	Destination Market: Share(%)		1,403	3,400	1,445	3,213	0,214	1,27
	St. Cruz(%)	100	80	90	50	30	5	9
				10	50	70	95	,
	Cochabamba(%) Local(%)	0	20 0	0	0	- 70	93	
		U	· · · ·		U	U	U.	
	Destination Market: Volume(t)		3 100	2.121	702	054	211	1.01
	St. Cruz(t)	893	1,122	3,121	723 723	954	311 5,903	1,21
	Cochabamba(t)	0	281	347	- 19 a - 2 a - 2	2,225 0		esies .
2.1	Local(t)	0	0	0	0		0	- 6
Other	Production(t)	1,150	3,200	6,900	1,050	6,220	1,700	50
vegetables	Commercialization(%)	85	85	85	85	85	85	<u>{</u>
	Marketing Volume(t)	978	2,720	5,865	893	5,287	1,445	42
	Destination Market: Share(%)	***				20		
	St. Cruz(%)	100	100	70	60	60	70	9
	Cochabamba(%)	0	0	30	40	40	30	
	Local(%)	0	0	. 0	0	0	0	
	Destination Market: Volume(t)				ممند			
	St. Cruz(t)	978	2,720	4,106	536	3,172	1,012	• 40
	Cochabamba(t)	0	0	1,760	357	2,115	434	
	Local(t)	0	. 0	0	. 0	0	0	
Fruits	Production(t)	1,900	2,500	1,300	400			3,50
	Commercialization(%)	85	85		85			
	Marketing Volume(t)	1,615	2,125	1,105	340	0	0	2,9
	Destination Market: Share(%)						1.1	
	St. Cruz(%)	90	100		50			
	Cochabamba(%)	0	. 0		50	2.4		
	Local(%)	10	. 0	40	. 0			
	Destination Market: Volume(t)							
	St. Cruz(t)	1,454	2,125		170			2,2
	Cochabamba(t)	0	0		170			_
	Local(t)	162			0		· · · · · · · · · · · · · · · · · · ·	7:
Total	Production(t)	9,270			6,340			15,4
	Commercialization(%)	82			82			
	Marketing Volume(t)	7,621	7,592	13,678	5,230	13,866	14,391	12,5
	Destination Market: Share(%)			and the second second		11.2		
	St. Cruz(%)	98			57			
	Cochabamba(%)	0		i i				:
	Local(%)	2	(3	0	0	- 0	
	Destination Market: Volume(t)				The second second	a 160	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	St. Cruz(t)	7,460	7,311	11,130	2,959	7,906	3,342	11,7
	Cochabamba(t)	0			2,270			
	Local(t)	162) 442	0			8
Source:	Results of study by JICA Study				7			1.0

A.1.T-28

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

					Operation	
Major					ঐ	•
Producing Areas	Facility	Constructed	Possession	Capacity	Management	Use/Remarks
Samaipata Area	Collection facility	1985	ASOHFRUT		ASOHERUT	Rented out for storage of food stuff under PAIS program
	Fruit processing facility (only building)	1994	ASOHFRUT	· ·	ASOHFRUT	Not used: trial production of fruit jam & marmalade in 1996 under the guidance of JOCV
	I ocal open market		Municipal government	1	Municipal government	Opened daily
Mairana Area	Com flour mill	1978	Private	400 t/day	Private	Commercial operation
	Tobacco collection center	,	Private	ı	Private	Operation from April to July
	Municipal market	1978	Municipal government	2900т2	Municipal government	Open mainly on Sunday; presently under renovation
Pampa Grande Area	Wheat seed processing facility		Private	1	Private	Commercial operation
	Local open market	ı	Municipal government	ı	Municipal government	Daily; operation started in August 1998
	Municipal market	6661	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	1	EMCA	4	ЕМСА	Storage of farm inputs
San Isidro Area	Collection facility	1983	PETHOSAN		San Isidro sub-municipali	San Isidro sub-municipality Not used; originally constructed tor tomato processing use of facility entrusted to San Isidro in 1993 for 5 years
	Municipal market		Municipal government	•	Municipal government	Daily
	Local open market	•	Municipal government	-	Municipal government	Daily; operation started in August 1998
Saipina Area	Municipal market	1	Municipal government	•	Municipal government	Daily
	Brown sugar processing facility		Individual		Individual	About 30 in total
Vallegrande Area	Farmers market(retail market)	1993	Municipal government	800m2	Municipal government	Saturday & Sunday
	Local open market - Municipal government - Municipal government	1	Municipal government	1	Municipal government	Daily; 2 markets in municipal

Table A.1.4-1 Quiline of the City Infrastructure of Target Area in Valley Area (Florida Caballas, Valley)

Items Canton	Samalnata	Mairana	Pampa Grande	San Iskkro	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)	24.000 ZZUV	24,000V, 380V (3-phase), 220V	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	private lines (and 99 spare lines)	COTAS, 10 existing private lines in Pampa Grande, no detail for Los Negros.	ENTEL cabin, no private lines	private lines	ENTEL (terminal station is no functioning now:	ENTEL, 350 existing private lines, 350 more lines will be installed in 1999.
4 Wasted Water Treatment	only for urban area, 4 aeration tanks (total 20,000 ton)	Discharging to road, Pit latrine.	No service. Seepage pit, Pit Lattine.	Scepage pit, Pit 🕴	No service. Discharging to river		Drainage system for urban area, 6 aeration tanks (total 172,800 ton)
5 Gatbage Collection Service	times/week (16 ton/week), Dump	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 Tha		imes/week (10- it 14 ton/week), Diimp area; mywhere	Ston fruck, 2 imes/week (6 on/week), Dump irea : anywhere	Bron truck, every

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

Items Canton	Samaipeta	Mairana	Pampa Grande	San Isidro	Соплагара	Salpina	Valle Grande
Condition of Project	Site proposed by Al	aldia for C/D Cer	iter	L			
1.1 Land Owner	ASOHFRUT	Association de Ganaderos (private land)	Pampa Grande Mayor (private land)	Canton San Isidro	Municipal	(private land)	Alternative I) Municipal
	Alternative 2) Municipal Alternative 3) Municipal						Alternative 2) Municipal
1.2 Location	Alternative 1) Along Route 4,	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 ASOHFRUT/CIA T office, existing PETHOSAM facilities		600m east from Plaza almost city boundary area near public cemetery	Alternative I) 0.6km east from Plaza, city boundary area uear football stadium
	Alternative 2) Old butcher facilities, 1km south from Plaza Alternative 3) Old			**************************************			Alternative 2) 0.6km east from Plaza, city boundary area
	school facilities, Ikm north from Plaza						
1.3 Total Land Area	Alternative 1) 0.28ha Alternative 2) 0.24ha Alternative 3)	lha out of 4ha	40-50ha	0.79ha	0,66ha	10-20ha	Alternative 1) 2.8ha Alternative 2) 0.25ha
1.4 Land Surface	0.34ha Alternative 1)	Flat, cattle farming area	Hill foot, moderate Slope	Flat, 6 existing facilities for agri- products	Flat, 2 existing facilities under construction, but	Hai	Alternative 1) Moderate slope
	Alternative 2) Slope, 1 existing facilities		***************************************	The state of the s	abandoned		Alternative 2) Moderate slope
	Alternative 3) Flat, 4 existing facilities						
1.5 Infrastructure	Alternative 1) Electricity (E), Water (W), Wireless transmitter, Drainage (D)	No, 50m to E and Telephon(T) line, 200m away from W line	E, W, T	E, W (existing river water supply pump/line)		No, 250m away from E line, 160m away from W line	
		frequency: SUB 7382	All property of the second sec			THE REAL PROPERTY OF THE PERTY	Alternative 2) E, W, D, 50m away from T line
	Alternative 3) E, W, I, 70m away from D line				**************************************	The state of the s	
t 6 Surroundings	Alternative 1) Residences and small shop	Traffic police station, residentia area	Cattle farming Farea	Football playground, residence	Residence, cattle farming area	beside public cemetery	Alternative 1) Stadium, residence, small airport
	Alternative 2) Residential area Alternative 3) Residential area					Table (mail on the other)	Alternative 2) Residences
1.7 Land Price	Afternative 1) no information Alternative 2) 13-16 \$/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	Alternative 3) 13- 16 \$/m2 or Agri-products by		ASOHERIT				
2.1 Building Ages	6 years (1992)	1	/	/14 years (1984)	T 5 7	7	//
2.2 Construction cost	80,000 US\$	<u> </u>	47	300,000 US\$	\ 	\	
2.3 Loan Source	Fond Social de Emergencia, ASOHFRUT	2 facilities approx. 390m2		Cordectuz (75%) ASOHFRUT (25%)	арргох. 1,479 m2		
2.4 Building Owner	ASOHFRUT (1992-1998)			Cordecruz (1984) Canton San Isidro (1991)			
2.5 Land Owner	ASOHFRUT (1992-1998)	T /	T /	Canton San Isidro (1984-1998)	17	T . /	
2.6 Building Functions	: jam processing facilities / Now, food storage for "Programa			Original function tomate canning processing plant (PETHOSAM) Now, no function			-
	Pais"(ex- Prodecaf)	V- <u></u>	<u> </u>		/	/	/

		R	anking of	each target a	rea for the c	riteria		
	Samaipata	Mairana	Pampa Granda	San Isidro	Сотвгара	Saipina	V. Grando	
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	
Project Evaluation (economic/financial reliabilities, income redistribution)				1	3	•	4	
Possibility for Organizing Farmers (farmers intention to participate in cooperative collection/distribution, presence of current farmers cooperative activities, presence of current water management association)	27	2	2	2	2	2	1	
8 Effective Technology Transfer to the related persons		1	2	2;	ź			lst Group :
6 Environmental Impact Assessment (social impact to the related persons, environmental impact)	- 1	l	1	1	1	1	1	* high potential for production/supply volume / * high possibility for
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	a. is 4		3	adaptation of transshipping me /* high (compara high) beneficiarie

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
- * iow 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 Eva						
			Ranking of e	each target a	rea for the e	riteria
	Sumainata	V Culinama	Pampa	San faiden	<i>C</i>	0_:_:

		K	Canking of c	uch target a	rea for the c	riteria	***************************************	
	Samaipata	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	galantina ang mangangang ang mangang a	2	
3 Possibility for Adaptation of Proposed Transshipping Method (presence of transshipment, employment ratio of local transporters, presence of transporters cooperative)	2		*			2	2	
4 Beneficiaries (owner farmers ratio, no. of beneficiaries, illiteracy ratio)	4.4		4	1	4.4	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	-	-
8 Effective Technology Transfer to the related persons	8	J	2	2.5 2.5	2			1st Group :
6 Environmental Impact Assessment (social impact to the related persons, environmental impact)	-	l	1	•	1	1	1	* high potential for production/supply volume / * high possibility for
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)]			2	4		3	adaptation of transshipping method /* high (comparative high) beneficiaries
3rd Group • low potential for productio volume • high possibility for adaptat transshipping method • low beneficiaries	.,,	volume tow poss	ibility for a	duction/sup daptation of	, ,	volume * low poss	ential for pro	oduction/supply daptation of d

* low beneficiaries

* low beneficiaries

* 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.

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Laule A.1.++ Cincilator Cinacoca.		200	Corrector examples	LO V			Score	Score of each target area	et area		
Criteria	*HEDUS-ODC				Samaipata	Mairana	Patmpa	San Isidro	San Isidro Comarapa	Saipina	V. Grande
1 Production & Supply Potential	hupply Potential		*****					,,,,,,			
	1 1 D. Assetter B. Constant	Comple	Madinm	Small			·	,	,	ť	
	1.1 Production of target collection volume	200	TWO TO SAIL		сч	64	m	m	74	9	a .
		ю	6	7							
	1.2 Position as target area for agriculture development	Designated		Not designated	۶	8.	ю	٠,	r)	щ	m
		m		-							
	1.3 Potential for production	Exist / Plan of irrigation	Under	Not exist	•		,	~	اب	'n	۸,
	irrigation development plan)		•		4	4		l			
		e.	7	-							
	(Score sub-total)				9	7	•	80	80	6	0 0
	(Ranking of each target area for this criteria	for this criteria			7	٥	7	7	7	1	2

V. Grande Saipina 4. 7 Pampa San Isidro Comarapa Grande 4 4 Score of each target area Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (2/8) 4 4 Mairana Samaipata Not exist Not exist Scores for evaluation (Ranking of each target area for this criteria) Exist 3 2.1 Current farmers cooperative activities 2.2 Curtent water management association (for irrigation) Sub-criteria (Score sub-total) 2 Possibility for Organizing Farmers Criteria

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Criteria	Sub-criteria	Sco	Scores for evaluation	ion			Score	Score of each target area	et area		
	****				Samaipata	Mairos	Pumpa Grande	San Isidro	San Isidro Comarapa	Saipina	V. Grande
3 Possibility for	3 Possibility for Adaptation of Proposed Trans-shipping Method (transshipment at C/D center)	ng Method (tra	nsshipment at	C/D center)							
	3.1 Transshipment in current shipping method	Exist	Under Preparation	Not exist	-	1	=	-	٤	69	ھ
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	n	C ‡	7~4							
	3.2 Employment ratio of local transporters in current shipment	More than More than 50% of crops 25% of crops	More than 2.5% of crops	0-25% of crops	æ	3	ю	<u>ب</u>	۳	ю	ю
	************	e)	2								
	3.3 Current transporters cooperatives	Exist		Nor exist	8	-	-		٣		, w-r
		es.		1							
	(Score sub-total)				7	5	5	5	6	7	7
	(Ranking of each target area for this criterial	for this criteria			2	5.	5	S	1	2	2
	11000										

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

Criteria	Sub-criteria	Sco	Scores for evaluation	ion			Score	Score of each target area	et area		
			-		Samaipata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipina	V. Gran
4 Beneficiaries											
	4.1 Owner farmers ratio	More than 50%	More than 25%	0-25%	r	۶	en	6	3	દ	n
		m	7	Ħ							
	4.2 Farmers intention to participate in cooperative collection and distribution	Exist		Not exist	e	8	۳	6	e	့်ဗ	٣
		· ·	:								
	4.3 No. of beneficiaries	Large	Medium	Small	1	w -2	2	6	-	3	3
: : : : : : : : : : : : : : : : : : : :	4	8	2	1							
	4.4 Illireracy ratio	More than 17%	Approx. equal to 17%	Less than 1796		-	71	m	٣	'n	60
		m	71	-							
	(Score sub-total)				10	80	10	12	10	12	12
	(Ranking of each target area for this criteria)	for this criteria	(4	7	+	1	+	1	

Criteria	Sub-criteria	юэ <u>ς</u>	Scores for evaluation	ion		:	Score	Score of each target area	et area		
					Samaipata	Mairan	Pampa Grande	San Isidro	Comarapa	Saipina	V. Grande
5 Site Condition								.,			
	5.1 Accessibility from feeder road in production area	Easy/ Effective	Medium 2	Not easy / Ineffective 1	ч	£	ત	7	-	ന	۲۹
	5.2 Posmbility of actual practical use of existing facilities after rehabilitation	Possible		Not possible	40	-		8	-	bool	
		n		1				10000			
	5.3 Reliability of land acquisition (* 1) (*2)	Eary (Public land) 3		Not enay (Private land) f	દ		-	س	ಣ	v-1	_د
	5.4 Necessity of large scale land- cut, filling, bank protection, and ect. for land preparation	Not necessary	A little works required	Necessary	٣	۳	7	۴	ç	8	٣
	i i i i i i i i i i i i i i i i i i i	m	7	•							
	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	Equipped with only 1 item or no	ю	.	7	7	ĸ		ю.
		ო	7	. +-							
	(Score sub-total)				14	6	80	13	=	٥	21
	(Ranking of each target area for this criterial	for this criteria			1	5	7	7	4	2	3
							.,				••••

*1: In case that the land owner of project site is ASOHFRUT, this site is classified to the public land.
*2: In case that one urget area has a few alternatives, the best one is selected considering the site condition, i.e. project site No. 1 is selected in Samaipata, and project site No. 1 in Valle Grande.

		V. Grande	-1114		2				7	,,,,,,	m		7		7		ત			~		7		т.		₩.		2		25			
		Saipina			3		• ••		2		8		7		2		7			1		1		ы		т		7		25	1		
3)	et area	Comarapa			7		-		3		3		2		7		7							က		**		7		25	1		
n Center (6/l	Score of each target area	San Isidro			2		-		3		3		2	-463110	7	2010-10-	7	*****		-	******	1		3		æ		2		25			ĺ
Distribution	Score	Pumpa Grande			٣		-		2		æ		2		2		2					¥		3		દ		2		25	•		
Collection /		Mairana			ε,		-		ત	:	6	reifee	7	*******	ત		ભ			-		-		3		3		7		2.5	-	naint.	
or Products		Samaipata			3		ī		2		3		2		7		2		impace)	_	153541	_		3		6		2		25			
Target Area fo	ion			ive impact)	Small	T	Small	=	Small	1	Small	÷	Small	-	Small		Small	1	rge negative	Large	-	Large	T .	Large	-	Large	-	Large	1				
valuation of	Scores for evaluation			n-Small posit	Medium	7	Medium	7	Medium	7	Medium	7	Medium	7	Medium	74	Medium	۲۱	z-Medium-La	Medium	сч	Medium	~	Medium	7	Medium	7	Medium	7				
naracteristics E	SCO			impact-Mediu	Large	·····	Large	ĸn.	Large	۲,	Large	m	Large	········	Large	6	Large	es.	negative impa	Small	е.	Small	63	Small	е.	Small	67	Small	ĸ		or this criterial)		
Table A.1.4-4 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (6/8)	Sub-criteria		6 Environmental Impact Assessment	5.1 Social Impact (Large positive impact-Medium-Small positive impact)	(1) To small scale farmers		(2) To women engaged in small scale transportation works		(3) To large scale farmers		(4) To local transporters		(5) To local intermediates		(6) To dealers of consumption area		(7) To neighboring inhabitants		6.2 Environmental Impact (Small negative impact-Medium-Large negative	(1) Noise pollution	30 30 30 30 30 30 30 30 30 30 30 30 30 3	(2) Air pollution		(3) Water pollution		(4) Soil pollution		(5) Garbage / Dust		(Score sub-total)	(Ranking of each target area for this criteria)		
Table A.1.4-4 Crite	Criteria		6 Environmental																						;								

Chironia	Criteria Sun-criteria Scores for evaluation Score of each target	Sco	Scores for evaluation	ion		-	Score	Score of each target area	et ares		
e i					Samaipata	Mairana	Pampa Grande	San Isidro	Comarapa	Saipina	V. Grande
? Project Evaluation	ion										
	(1) Fortomic reliability	Large	Medium	Small	_	-	1	60	ю	က	
		, w	71	-	•••••			1-20-71			
	(A) The second of and last likes	Tomore	Medinm	Small	·	-	٥	3	7	ო	~
	(z) Citamena Ichanit)	, -	2	-	1	<	١.				*******
			1000	Cmall	,	,	,	,	,	~	2
	(3) Income redistribution	Lage	IIIn IDai A	Osmen.	~1	4	4	4	3	1	
		3	2	7						١	,
	(Score sub-total)				5	4	Ś	∞	_	× .	0
	(Ranking of each target area for this criteria)	for this criteria			5	7	2		3	-	•
									·		
le A.14-4 Crite	Table A.1.44 Criteria for Characteristics Evaluation / Characteristics Evaluation of Target Area for Products Collection / Distribution Center (8/8)	Characteristics	valuation of	Target Area fo	or Products	Collection /	Distributio	n Center (8)	8)		
Criteria	Sub-criteria	Sco	Scores for evaluation	ton			Score	Score of each target area	et area		
					Samaipata	Mairana	Pampa Grande	San Isidro	Contarapa	Saipina	V. Grande
8 Effective Technology Transfer	nology Transfer								******		
	(1) To small scale farmers	Effective	Medium	Not effective		3	7	4		7	
		6	7								
	(2) To women engaged in small scale transportation works	Effective	Medium	Not effective	1	7				+-1	
		٣	Ci	-							
	(3) To large scale farmers	Effective	Medium	Not effective	2	2	7	٣.	~·		ત
		6	7	-							
	(4) To local transporters	Effective	Medium	Not effective	7	2	. (4	7	71	64	74
		દ	2	1							
	(5) To local intermediates	Effective	Medium	Not effective	2	71	64	7	N	7	~
	*******	٣	ભ	1							
	(6) To dealers of consumption area	Effective	Medium	Not effective	1	 -		~		# 4	
	*******	ĸ	7	1							
	(Score sub-total)				6	12	10	10	10	6	۸
	(Ranking of each target area for this criterial	for this criteria			\$	1	7	~	2	S	5
							ļ				

Table A.1.45. TARGET AREAS OF PRODUCTS COLLECTION

	Targe	Target Areas for Collecction	ection		
	Principal Areas	53			
		Estimated A	Estimated Area(Net Irrigated Areas)	Areas)	Ī
Target Collection Area	Areas Basi	Base Year & 2000	2005	2010	Other Areas
Samaipata Collection Area	- Írrgated areas in Samaipata municipality	340	340	340	Other fruit growing areas
Mairana Collection Area	- Irrgated areas along the Mataral river (Filadelfia/Mandiola Irrigation Project)	400	400	400	Other fruit growing areas
	- Area along Quirusillas river	80	80	80	
	Total	480	480	480	
Pampa Grande Collection Area	- Irrgated areas in Los Negros	650	650	650	Other fruit growing areas
4	- Other ingated areas in Pampa Grande Municipality	190	190	190	
	- Irrigated areas in San Juan del Potrero	150	150	180	
	Total	066	066	1,020	
Comarapa Collection Area	- Rio Amiba / Comarapa	190	190	190	Other fruit growing areas
•	- La Canada Irrigation Project	150	150	150	
	- Banados Irrigation Project	220	220	220	
	- La Pista(newly imgated area)	0	260	260	
	Total	260	820	820	
San Isidro Collection Area	- Irrigated areas in San Isidro and Pulquina Canton	-			•
	(Pulquina Arriba Irrigation Project)	270	270	270	
	(Moco Moco Imigation Project)	35.	35	35	
	(El Tunal Irrigation Project)	45	45	45	
	(San Isidro Imigation Project)	530	530	230	
	(Pulquina Abajo Imgation Project)	130	130	130	
	(Butron Irrigation Project)	06	06	8	
	Total	1,100	1,100	1,100	
Saipina Collection Area	- Irrigated areas along Comarapa niver	. *		-	
	(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

			Yc	ar		
Collection Center/Development Step	1999	2000	2001	2002	2003	2004
an 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		040000	nes::::::::::::::::::::::::::::::::::::	0000000000000	***************	300000000
Construction						
Operation & Management Arrangement						
Steering Committee for O&M						
Preparatory Stage	*****	000000000000000000000000000000000000000				
Operation Stage			10000000000		coonuvonoua	
amaipata C/D Center			·			
Steering Committee for Development		ļ,				
Trial Operation at Existing Facility						
Institutional Training to Potential Users						
Guidance & Organization of Users Groups				610000	****************	
-		<u> </u>				
Construction	··					
Operation & Management Arrangement	<u> </u>	 				
Steering Committee for O&M	<u></u>					
Preparatory Stage		-			00000000000	100000000
Operation Stage	ļ					
/allegrande & Saipina C/D Centers						
Steering Committee for Development	ļ	- 				
Institutional Training to Potential Users	ļ					
Guidance & Organization of Users Groups						
Construction ,	<u> </u>		ļ			
Operation & Management Arrangement		<u> </u>				
Steering Committee for O&M						
Preparatory Stage		_				
Operation Stage		<u> </u>	<u> </u>			
Mairana, Pampa Grande & Comarapa C/D Center	ļ	i ·			į	
Steering Committee for Development			<u> </u>			
Institutional Training to Potential Users		<u> </u>	<u> </u>			ļ
Guidance & Organization of Users Groups		<u> </u>	<u> </u>			
Construction						
Operation & Management Arrangement				<u></u>		
Steering Committee for O&M						
Preparatory Stage		1		***************************************		+
Operation Stage		<u> </u>				***********

File: Tab A.1.4-6

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

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

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

1. Existence of Available Facility 2. Production Volumes of Target Commodities 3. Currently Prevailing Marketing System 4. Results of Discussion Meeting 5. Coverage of Existing Farmers Organization 6. Activities of Supporting organization & Municipal government support CD Intention of Local Government 7. Existence of Movement for Cooperative Marketing & Others 8. Construction Costs per Ton of Products Concerns among members. 8. Construction Costs per Ton of Products Concerns among members. 9. Existence of Movement for Cooperative manager accepted the role. Need to have concerns among members. 9. Construction Costs per Ton of Products Collected at Pail Operation Stage Collected at Pail Operation Stage Collected at Fail Operation Stage Concerns among members. 12,600 Concerns ABASTO & Cochabation ABASTO & Concerns obtained among participants at the meeting held on Nov. 27 Concerns of Discussion Meeting Parmers Organization & Concerns obtained among participants at the meeting held on Nov. 27 Concerns of Existing Farmers Organization & All products in target collection areas (ingated areas) organized areas) & others areas for water distribution 6. Activities of Supporting organization & Municipal government support CD Intention of Local Government 12,600 Concerns obtained among participants 12,600 Concerns obtained and Subastro & Concerns obtained areas of Concerns obtained areas ob		
Existence of Available Facility Production Volumes of Target Commodities at Full Operation Stage(t) Currently Prevailing Marketing System Courenaty Prevailing Marketing System Coverage of Existing Farmers Organization Activities of Supporting organization & Municipal government for Cooperative Marketing & Others Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage Concensus among members. Collected at Full Operation Stage (San Isidro: USS 8.5/t)	Caballero Province	Vallegrande Province
Existence of Available Facility Production Volumes of Target Commodities at Full Operation Stage(t) Currently Prevailing Marketing System Results of Discussion Meeting Results of Discussion Meeting Activities of Existing Farmers Organization Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	Saipina Collection Area	Vallegrande Collection Area
Production Volumes of Target Commodities at Full Operation Stage(t) Currently Prevailing Marketing System Results of Discussion Meeting Coverage of Existing Farmers Organization Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	S.	ON.
Production Volumes of Target Commodities at Full Operation Stage(t) Currently Prevailing Marketing System Results of Discussion Meeting Activities of Existing Farmers Organization Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage		
Currently Prevailing Marketing System Results of Discussion Meeting Coverage of Existing Farmers Organziation Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	21,700	21,900
Currently Prevailing Marketing System Results of Discussion Meeting Coverage of Existing Farmers Organziation Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage		
Results of Discussion Meeting Coverage of Existing Farmers Organziation Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	Consignment marketing to Cochabamba (highly positive factor to use of C/D)	Seeling to intermediary at site (destination: ABASTO)
Results of Discussion Meeting Coverage of Existing Farmers Organziation Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage		
	Concensus obtained among participants at the meeting held on Nov. 27	Concensus obtained among participants at the meeting held on Nov. 27
	All producres in target collection areas	ASOHFRUT: registered member 61
Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	(irigated areas) organized into water users	CAPA(all vallegrande prov.): 700
Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	associations	
Activities of Supporting organization & Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage		
Activities of Supporting organization of Intention of Local Government Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	Mimicinal ooverment support C/D	Municipal government has strong intention
Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage	and the manuscript of military	to promote fruit production and to establish
Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage		C/D 1CO viril amoraide technical comment
Existence of Movement for Cooperative Marketing & Others Construction Costs per Ton of Products Collected at Full Operation Stage		Totalish and of ED EGundarion mans of
Collected at Full Operation Stage	All the representatives of water users associations summorted C/D center	Desarrollo Fruticola de la Provincia)
Concensus an Construction Costs per Ton of Products Collected at Full Operation Stage		planned by initiative of ICO
Construction Costs per Ton of Products Collected at Full Operation Stage		CAPA has intention & plan
	36.9	32.7
Overall Assessment	1st Phase Development	1st Phase Development
		File: Tab A 1 4-7

Table A.1.4-8.

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

Over					Saipin		
		Target Con	nmoodities	Over	all	Target Com	moodities
Cropped Area	Production	Cropped Area	Production	Cropped Area	Production	Cropped Area	Production
(ha)	(t)	(ha)	(t)	(ha)	(t)	(t/ha)	(1)
440	4,840	440	4,840	940	10,340	940	10,340
1.50	2,550	150	2,550	580	9,860	580	9,860
100	1,200	. 100	1,200	.*		•	•
250	1,250	250	1,250	470	2,350	470	2,350
500	5,000	500	5,000	1,050	12,210	1,050	12,210
40	. 400	40	400	0	0	0	, 0
			·····				
n.a.	n.a.			350	21,000		*
n.a.	n.a.			n.a.	n.a.		
		0	0	350	21,000	0	(
980	10,240	980	10,240	1,990	22,550	1,990	22,550
Remarks 1: Assu	med as follows	8;		Remarks 5: Assur	ned as follows:	 	
- All potaces &	vegetables cu	iltivated under in	rigation	- All potaces &	vegetables cul	tivated under irris	ation
- Cropping patt	tern under irrig	ation: potato 45 9	% ,	- Cropping patt	ern under irriga	tion: potato 40 %	
				tomato 25%, s	ugarcane 15%,	others vegetables	20 %
- Cropping inte	ensity in irrigate	ed area: about 13	0 % of	- Cropping inter	nsity in irrigated	darea: about 140	% of
imigated area	s(750ha)			irrigated areas	(1,675ha)		
		s: Commodities i	or	Remarks 6: Targe	t Commodities	Commodities fo	г
co	llection under (he present study					
Remarks 3:		•		Remarks 7:			
"Others" in 2, Ve	egetables repres	sented by pea/bea	ın.	"Others" in 2. Ve	getablesreprese	nted by pea/bean.	
					. ·		
	(ha) 440 150 100 250 500 40 n.a. n.a. n.a. 980 Remarks 1: Assu - All potaces & - Cropping pattomato 15%, - Cropping intering atted area Remarks 2: Targ co Remarks 3: "Others" in 2. Ve Remarks 4: "Oth	(ha) (t) 440 4,840 150 2,550 100 1,200 250 1,250 500 5,000 40 400 n.a. n.a. n.a. n.a. n.a. n.a. n.a. cropping pattern under irrig tomato 15%, green pepper I - Cropping intensity in irrigate irrigated areas(750ha) Remarks 2: Target Commoditie collection under ir Remarks 3: "Others" in 2. Vegetables represented.	(ha) (t) (ha) 440 4,840 440 150 2,550 150 100 1,200 100 250 1,250 250 500 5,000 500 40 400 40 n.a. n.a. n.a. n.a. n.a. 0 980 10,240 980 Remarks 1: Assumed as follows; - All potaces & vegetables cultivated under in Cropping pattern under irrigation: potato 45 tomato 15%, green pepper 10%, fruit 5 %, of Cropping intensity in irrigated area: about 13 irrigated area: about 13 irrigated areas (750ha) Remarks 2: Target Commodities: Commodities collection under the present study Remarks 3: "Others" in 2. Vegetables represented by pea/ber Remarks 4: "Others" in 3. Fruits represented by	(ha) (t) (ha) (t) 440 4,840 440 4,840 150 2,550 150 2,550 100 1,200 100 1,200 250 1,250 250 1,250 500 5,000 500 5,000 40 400 40 40 400 n.a. n.a. n.a. n.a. n.a. 0 0 980 10,240 980 10,240 Remarks 1: Assumed as follows; - All potaces & 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	(ha) (t) (ha) (t) (ha) (s) (ha) (ha) (ha) (ha) (ha) (ha) (ha) (ha	(ha) (t) (ha) (ha) (ha) (ha) (ha) (ha) (ha) (ha	(ha) (t) (ha) (t) (ha) (t) (t) (tha) 440 4,840 440 4,840 940 10,340 940 150 2,550 150 2,550 580 9,860 580 100 1,200 100 1,200 250 1,250 250 1,250 470 2,350 470 500 5,000 500 5,000 1,050 12,210 1,050 40 400 40 400 0 0 0 0 n.a. n.a. n.a. 350 21,000 n.a. n.a. n.a. 0 0 0 350 21,000 0 980 10,240 980 10,240 1,990 22,550 1,990 Remarks 1: Assumed as follows; - All potaces & 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 pea/bean.

Table A.1.4-9. PROJECTED CROPPED AREA AND CROP PRODUCTION IN 2010 UNDER WITH IRRIGATION DEVELOPMENT PROJECTS: COMARAPA & VALLEGRANDE

		Comar	apa Area	:		Vallega	nde Area	
•	Over	all	Target Cor	nmoodities	Over	all	Target Con	moodities
	Cropped Area	Production	Cropped Area	Production	Cropped Area	Production	Cropped Area	Production
Crops	(ha)	(t)	(ha)	(t)	(ha)	(t)	(t/ha)	(t)
 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				i i
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.			п.а.	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: Assi	umed as follow			Remarks 5: Assu			

- All potaces & 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

- 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

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

]st)	1st Year of Operation	eration	2nd	2nd Year of Operation	peration	3rd)	3rd Year of Operation	eration	4th	4th Year of Operation	peration	5th Year	oth year of Operation & after	n & arter
		Rates(%)			Rates(%)			Rates(%)			Rates(%)		- 1	Rates(%)	
Collection Area/Commodity	1	2	3	1	2	. 3	1	2	3	1	2	3	1	2	c
1. San Isidro Collection Area															
Potatoes	8	30	27	8	40	36	8	20	45	06	S S	54	8	70	63
Vegetables	85	30	97	85	40	34	85	20	43	85	9	51	8	5	63
Fruits	•		•	. ,	•	•	٠	,			•	'	•	'	•
2. Samaipata Collection Area															
Potatoes	80	20	16	8	30	24	08	40	32	80	20	4	82	8	51
Vegetables	\$	20	17	85	30	56	85	40	34	85	20	43	·8	8	54
Fruits	85	20	17	82	30	56	85	50	43	85	70	99	96	08	72
3. Vallegrande Collection Area															
Potatoes	80	20	16	8	30	24	80	40	32	&	20	9	85	8	51
Vegetables	85	30	76	85	40	35	85	20	43	82	9	51	8	5	63
Fruits	85	30	56	82	4	34	85	50	43	85	9	51	8	0,2	63
4. Saipina Collection Area													*		
Potatoes	8	30	77	8	40	36	06	20	45	8	8	54	8	2	63
Vegetables	85	30	56	85	40	34	82	20	43	82	8	51	06	6	63
Fruits	•	•	•	,	1	•	•	•	•	,			-	,	,
5. Mairana Collection Area															
Potatoes	80	30	24	98	40	32	80	9	48	80	9	96	82	80	89
Vegetables	85	8	56	82	40	35	85	9	51	82	5	9	8	80	72
Fruits	85	30	56	85	40	34	85	09	51	85	70	9	8	80	72
6. Pampa Grande Collection Area						-									
Potatoes	8	20	18	8	30	27	8	20	45	8	99	5.	8	70	63
Vegetables	\$\$	20	17	\$	30	56	85	20	43	85	9	51	8	5	63
Fruits	85	20	17	85	30	26	85	20	43	85	99	51	8	6	63
7. Comarapa Collection Area					,										
Potatoes	8	30	24	98	40	32	80	20	40	80	8	48	82	5	9
Vegetables	85	30	26	85	40	34	85	50	43	85	8	51	8	70	63
	85	30	26	\$2	40	34	85	20	43	82	ઉ	51	8	70	63

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

•			Province		
Commodity	Items	Florida	Caballero	Vallegrande	Valley Region Total
	Base Year(1998,	estimation) & 2	000(projection)		
I, 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
	Yea	r 2005(projectio	n)	,	
I. 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
	Yea	ır 2010(projectio	n)		
1. Root Crop(Potato)	Production(000 t)	16.5	23.3	24,1	
	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

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

•								Collection Ar	rue.i.	11.1.00
			San Isidro Collection Area	tion Area			Samarpan	Samaipara Conecuon Area	7	
		Development				Development	٠.		:	
Year	Factors	Stage	Potato V	Vegetables	Total	Stage	Potato	Vegetables	rruts	1 0121
	1. Production(t)		6,000	006'6	15,900					
	Commercialization Rate(%)	;	3 8	2 8	•					
2001	3. Rate of Collection(%)	1st Year) P	ς χ.	. 90					٠
	 1 arget Collection Rate(%; 2 x 3) 7 Terror Collection Volume(t: 1 x 4 /100) 	l	1.620	2,520	4,140					
	1 Production(t)		900'9	006'6	15,900					
	2. Commercialization Rate(%)		8	82	•					
2002	3. Rate of Collection(%)	2nd Year	4	₹	, ;		•			
	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		2000	3.350	1 900	0350
	1. Production(t)		6,000	006'6	15,900		0070	0577	3,5	?
	2. Commercialization Rate(%)		8	82	•		Q (2	S 5	3 8	١
2003	3. Rate of Collection(%)	3rd Year	S ,	ς; ς	. 5	Istrear	2 2	17	17	16
	 Target Collection Rate(%, 2 x 3) 	i	45	43	C# 4		010	087	120	0.51
	5. Target Collection Volume(t: 1 x 4 /100)		2,700	4,210	0.910		5 200	7 250	006	9350
	1. Production(t)	i	900,9	98,5	15,900		3 8	\$ X	;; \$8	
	2. Commercialization Rate(%)	441.47	₹ 6	& &		2nd Vear	S C	300	90	1
2004		4th rear	8 7	3 5	· \$	7 7 777	24	56	79	25
	4. Target Collection Kate(%; 2 x 3)	•	7000	5.050	0000	•	1.250	570	490	2,310
	Target Collection Volume(t: 1 x 4 /100)		97.5	0000	000 51		\$ 200	2.250	1.900	9,350
:	1. Production(t)		000,0	86,8	006,01	-	5	85	82	,
,	2. Commercialization Rate(%)	2.4. W	3 8	3 8	• 1	3rd Vest	3 4	3	ନ	•
2005	3. Rate of Collection(%)	or rest	? ₹	≳ ຊ	• Ç	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	68	34	43	35
	4. Target Collection Rate(%; 2 x 3)	•	50	60	0000		1 660	770	810	3.240
	Target Collection Volume(t: 1 x 4 /100)		3,780	6,240	10,020		300,4	2,250	26.	9,350
-	1. Production(t)	First Or Continue	00°	96,5	J., J.		8	85	82	,
	2. Commercialization Kate (%)	run Operation	8.6	2 5		4th Year	50	50	5	•
2002	 Kate of Confection (%) Terrat Collection Data(%: 2 x 3) 	1 TO	2 %	2 63	63	! !	4	43	8	45
	5 Target Collection Volume(f: 1 x 4/100)		4.160	6.870	11,030		2,080	096	1,130	4,170
	1. Production(t)		9,600	10,900	17,500		5,200	2,250	1,900	9,350
	2. Commercialization Rate(%)	Full Operation	8	8			88	8 :	S, 3	ŀ
2007	3. Rate of Collection(%)	7th Year	20	92	• ;	5th Year	9 :	8 2	8 €	, Y
		,	63	63	63		2,650	1 220	1370	\$240
	5. Larget Collection Volume(f; 1 x 4 /100)		4,160	00001	17,500		3,700	2,500	2,500	10,700
	1. ryoutenout () 2. Commercialization Rate(%)	Full Operation	8	9) i		82	96	8	t
2008	3. Rate of Collection(%)	8th Year	70	22	•	6th Year	99	φ;	08 (1 [
	4. Target Collection Rate(%; 2 x 3)		63	63	63	1	51	54	77	/500/
	Target Collection Volume(1: 1 x 4 /100)		4,160	6,870	11,030		2,910	1,350	1.800	0000
	1. Production(t)		009'9	10,900	17,500		5,700	2700	7,700 2,700	10,900
	Commercialization Rate(%)	Full Operation	ଛ :	S 1	1	ī	88	06	2 8	, ,
2009	3. Rate of Collection(%)	9th Year	0,5	0/	1 2	'm rear	3 6	3 %	72	57
	4. Larget Collection Rate(%, 2 x 3)	1	. 20	600	11.030	1	2,910	1.350	1.940	6.200
	5. larget Collection Volume(1: 1 x 4 /100)		4,100	0,000	17.500		\$ 700	2.500	2,900	11,100
	1. Production(1)	Till Operation	000	3 S	300,1	Full Operation	\$	8	8	
2010	2. Commet Management (2)	10th Vear	3 2	2,02	1	8th Year	8	9	<u>0</u> 8	•
2010	4. Target Collection Rate(%: 2 x 3)		: G	63	63		51	54	72	57
						•		(C	*	24.

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

			Vallegr	Vallegrande Collection Area	Area			Saipina Collection Area	ection Area	
		Development					Development		;	
Year	Factors	Stage	Potato	Vegetables	Fruits	Total	Stage	Potato	Vegetables	lotal
	1. Production(t)									
	 Commercialization Rate(%) 									
2001	3. Rate of Collection(%)									
	 1 arget Collection Kafe(%; 2 x 5) 7 Target Collection Volume(t: 1 x 4 /100) 									
	1. Production(t)									
	2. Commercialization Rate(%)					*				
2002	3. Rate of Collection(%)									
	 Target Collection Rate(%; 2 x 3) 									
	5. Target Collection Volume(t: 1 x 4 /100)					XXX		900	W7 0	17 500
	1. Production(t)		006'6	2,000	3,500	15,400		3,5	,	2006/1
	 Commercialization Rate(%) 		&	\$6 i	£ 8	•	1	2 8		
2003	3. Rate of Collection(%)	1st Year	20	00 T	Q `		1st Year	3 6	2 %	y
	 Target Collection Rate(%; 2 x 3) 	;	16	56	50	4 4 4		77	,	027 V
	5. Target Collection Volume(t: 1 x 4 /100)		1,590	510	068	2,990		05150	Ϋ́	0000
	1. Production(t)		006'6	2,000	3,500	15,400		8	2	10,100
	Commercialization Rate(%)		8	£	8	•	10.7%	R &		• •
2004	3. Rate of Collection(%)	2nd Year	30	04	5 7	• 6	ZDG X ear	₹ %	} ?	32
	4. Target Collection Rate(%; 2 x 3)		24	34	34	87	,	90,00	3	653
	5. Target Collection Volume(t: 1 x 4 /100)		2,380	089	35.1	4,250		0,100	, [00000
	1. Production(t)		006,6	2,000	3,500	15,400		3	, ,	20,00
	Commercialization Rate(%)		ွ လ	82	S 1			2 2		•
2005	3. Rate of Collection(%)	3rd Year	4	S	SS :	. ;	3rd Year	2 4	S 4	
	4. Target Collection Rate(%; 2 x 3)	•	32.	43	43	36		456	*	1000
	5. Target Collection Volume(t: 1 x 4 /100)		3,170	820	1,490	0144		200	*	004.05
	1. Production(t)		006'6	2,000	3,500	15,400		9	11,4	200,02
	2. Commercialization Rate(%)		08	£8 (£ (Att. Venn	2 6		
2006	3. Rate of Collection(%)	4th Year	S S	3 5	3 5	1 7	401 1CM	3 %	3 5	· \$-
	 Target Collection Rate(%, 2 x 3) 	,	940	1000	100	Viet >	•	080.5	*	10.790
	Target Collection Volume(t: 1 x 4 /100)		3,960	1,020	1,790	0,770		0.40	11 200	20,600
	1. Production(t)		96. 78.	2,000	3,8	70 ,4 00		8	1	,
	2. Commercialization Rate(%)	Cab. Viers	6 6	3 8	? ?	· •	5th Year	2.2	2	•
2007	3. Kate of Collection(%)		3 €	? €	63	55		63		63
	4. Larget Collection Rate 76, 2 X 5)	1	\$050	1 260	2.200	8.510		5,920	1,	12,980
	5. Target Condenson Youthday, 1 A + 1100)		11 100	3.500	4,800	19,400		10,300	12,4	22,700
	1. Froductional ()		85	8	8		Full Operation	8	8	•
2008	3 Rate of Collection(%)	6th Year	8	20	70	•	6th Year	92		۱ (
	4. Target Collection Rate(%; 2 x 3)		51	63	63	56	•	63		63
	5. Target Collection Volume(t: 1 x 4 /100)		2,660	2,210	3,020	10,890		6,490	- 1	14,500
	1. Production(t)		11,300	4,300	5,300	20,900	100 P	95.01 8	006,21	77,777
	2. Commercialization Rate(%)		82	8	8 i	•	ruli Operation	X 5		•
2009	3. Rate of Collection(%)	7th Year	8 (2.5	2 8	· [;	/th rear	3.6	2 %	· 52
÷	 Target Collection Rate(%; 2 x 3) 	•	-10	3	60	7.01.1		200.2	*	14 300
	5. Target Collection Volume(t: 1 x 4 /100)		5,760	2,710	3,540	11,810		24.0 00.00	, 61	200.44
	1. Production(t)	, ; ;	11,400	8,4	008.5	71,500	Full Operation			3,5
	2. Commercialization Rate(%)	Full Operation	Ç 5		<u> </u>		Sth Vear	2	3,8	•
2010	3. Rate of Collection(%)		3 5	2 %	\$ 59	57				63
	4. Larget Collection Nation 76, 4 x 3)		5.810	2,960	3,650	12,420		6,49	7,810	14,300
	J. Imger concensus vienes a second									

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

			Mai	Mairana Collection Area	Jea			Pampa G	Pampa Grande Collection Area	Area	
		Development					Development				
Year	Factors	Stage	Potato	Vegetables	Fruits	Total	Stage	Potato	Vegetables	Fruits	Total
2001	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Collection Rate(%; 2 x 3) Target Collection Rate(%; 2 x 3) Target Collection Pate(%; 2 x 3)				•					·	
2002	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Collection Rate(%; 2 x 3) Target Collection Volume(t: 1 x 4 /100)										
2003	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Collection Rate(%; 2 x 3) Target Collection Volume(t: 1 x 4 /100)								1.1	38	7 C
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)	1st Year	1,700 80 30 24 410	4,900 85 30 26 1,250	2,500 85 30 26 640	2,100 - 2,300	lst Year	20 20 18 10 18	88 20 17 17 1,98	20 20 17 220 220	3,020
2005	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Collection Rate(%; 2 x 3) Target Collection Volume(t: 1 x 4 /100)	2nd Year	1,700 80 80 40 32 32	4,900 85 40 34 1,670	2,500 85 85 40 34 850	9,100 - 3,060	2nd Year	4,585 90 30 27 1,220	30 30 30 26 2980 26 2980	30 26 30	26 4 4340
2006	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Collection Rate(%; 2 x 3) Target Collection Volume(t 1 x 4 /100)	3rd Year	1,700 80 60 48 48	4,900 85 60 51 2,500	2,500 85 85 60 51 1,280	9,100 - 51 4,600	3rd Year	4,500 90 50 4,500 4,500 4,500 4,500 4,500 4,500	11,500 85 50 50 43 5,060	50 50 50 530 530 530	43 7,640
2007	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Collection Rate(%, 2 x 3) Target Collection Volume(t: 1 x 4 /100) Target Collection Volume(t: 1 x 4 /100)	4th Year	1,700 80 70 70 56	4,900 85 70 60 2,920	2,500 85 70 60 60 1,490	9,100 - 59 5,360	4th Year	4,500 90 60 60 54 54 2,430	85 85 60 51 51	88 68 88 88 88 88 88 88 88 88 88 88 88 8	52 52 82 82 82 82 82 82 82 82 82 82 82 82 82
2008	1. Production(1) 2. Commercialization Rate(%) 3. Rate of Collection(%) 4. Target Collection Rate(%, 2 x 3) 5. Target Collection Volume(t. 1 x 4 /100)	5th Year -	1,700 85 80 68 68 1,160	4,900 90 80 72 3,530	2,500 90 80 72 72 1,800	9,100 - 71 6,490	Sth Year	4,500 90 70 70 53 53	01,500 57 63 63 7,500	95. 05. 05. 05. 05. 05. 05. 05. 05. 05. 0	63,77
2009	Production(t) Commercialization Rate(%) Rate of Collection(%) Target Coilection Rate(%), 2 x 3) Target Collection Volume(t: 1 x 4 /100)	Full Operation 6th Year	1,900 85 80 68 68 1,290	5,400 90 80 72 7,890	2,800 90 80 72 2,020	10,100	Full Operation 6th Year	00,70 70 63 63 63	13,500 90 70 70 63 83,380	85 85 86 86 87 88 88 88 88 88 88 88 88 88 88 88 88	63 63
2010	1. Production(t) 2. Commercialization Rate(%) 3. Rate of Collection(%) 4. Target Collection Rate(%; 2 x 3)	Full Operation 7th Year	0,900 88 88	5,406 90 80 77	2,800 90 80 72	10,100	Full Operation 7th Year	5,100 90 70 63	13,500 90 70 73 63	96 75 85 85	508.81 63

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

70,190 100,150 29.310 Total 9,600 13,600 89 5,400 999 Fruits 34,600 14,300 28,050 2 520 48,350 8 Vegetables Querall 060,03 16.170 Potato Overall Full Operation 2010 Year 2005 2006 2007 2008 5003 2003 2004 201 2002 Total 8 8 8 2 8 8888 5882 § 8 4 4 4 5 8 8 8 4 Fruits Comarapa Collection Area 8 8 8 4 8882 Vegetables 8888 8833 888 28 28 882 8 3.4 æ Potato Full Operation 6th Year Full Operation 7th Year Development 2nd Year 3rd Year 4th Year 5th Year Stage 1st Year arget Collection Volume(t: 1 x 4 /100) Rate of Collection (%)
Target Collection Rate (%; 2×3)
Target Collection Volume(t: $1 \times 4/100$) [arget Collection Volume(t: 1 x 4 /100) arget Collection Volume(t: 1 x 4 /100) Target Collection Volume(t: 1 x 4 /100) Target Collection Volume(t: 1 x 4 /100) Target Collection Volume(t: 1 x 4 /100) Farget Collection Rate(%; 2 x 3)

Farget Collection Volume(t: 1 x 4 /100) arget Collection Volume(t: 1 x 4 /100) arget Collection Volume(t: 1 x 4 /100) Target Collection Rate(%; 2 x 3) Target Collection Rate(%; 2 x 3) Target Collection Rate(%, 2 x 3) (auget Collection Rate(%; 2 x 3) Farget Collection Rate(%; 2 x 3) Target Collection Rate(%; 2 x 3) Target Collection Rate(%; 2 x 3) Target Collection Rate(%; 2 x 3) Commercialization Rate(%) Factors Rate of Collection(%) roduction (t) roduction(t 2009 2010 2008 2004 2005 2006 2007 2002 2003 Year 282

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

Incidention Training for Samipas, Vallegrande & Vallegrande, Samipas, Vallegrande & Coracter of Coracter of Coracter of Samipas, Sami	ub-Project Office	The state of the s			
International Programs Institutional Internation Programs Institutional Internation Programs Institutional Internation Programs Institutional Programs Technical Extension Pro	ub-troject Office			Landand Madeine Camping	Inchibitional Tenining for Mairons
Edido O'D center Samina Vallegrands & Vallegrands & Vallegrands & Vallegrands (Samina Samina Porpara Committee		 Institutional Iraining for San 	- Institutional training for	 Insurance it aming for Samarpara, 	- Hishing transity for interioral
Technical Estension Programs		Isidro C/D center	Samaipata, Vallegrande &	Vallegrande, Saipina, Mairana, Pampa	Pampa Grande & Cpomarapa C/D Center
Technical Extension Programs Technical Extension Programs Technical Extension Programs Technical Extension Programs For Statistical Actas			Caming CO	Grande & Comarana Citi	 Technical Extension Programs for San Isidro.
Technical Exercise Programs Technical Extension Programs Technical Extensi					
For Sharp of Charles For Charles Fo		 Technical Extension Programs 	 Technical Extension Programs 	- Technical Extension Programs	Samapata, Vallegrande & Sapina Areas
the CD Center - National Color - Initial Stage of Operation C Support/Nomine C AM of CD Center - Initial Stage of Operation of CD Center - Initial Stage of Operation of CD - Initial Stage of Operation of Stage of Operation of CD - Initial Stage of Operation of Stage of Operation of Stage of Operation of Stage of Operation of CD - Initial Stage of Operation of		for San Isidro Areas	for San Isidro Areas	for San Isidro Areas	
to CDD Center - Renovation of CDD Center - Initial Stage of Operation - Institutional Theining/Guidance - Institutional Ord CDD - Management of Scenario Committee - for Operation of CDD - Management of Scenario Committee - CDD with ASOHFRUT - Preparation of OAM Guidelines - Support/Supervise O&M of CD Center - Suppo		- Support O&M Arrangement	- Support/Moniter O&M of C/D Center	- Support/Monitor O&M of C/D Center	 Support/Monitor O&M of C/D Center
Linking of Governities Particuloual Training/Guidance Listinutional Training/Guidance Listinutional Training/Guidance Management of Steering Committee Management of Steering Committee Management of Steering Committee Management of CD Management Arrangement of CD Management of CD CD With ASOHEPUT Preparation of CDA Guidelines SupportSupervise O&M of CD Center SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center Enact Regulations for Users Users Tees SupportSupervise O&M of CD Center Enact Regulations for Users Us	in Teichen CID Conter	- Renovation of C/D Center	- Initial State of Operation	- Initial Stage of Operation	- Initial Stage of Operation
Language Committee - Institutional committee - Insti			January of the Control of the Contro	factional Training Condeace	. Institutional Training/Canidance
Famb. Of Stering Committee Management of Stering Committee Management of Stering Committee Management of Stering Committee Famb. Of Stering Committee Famb. Of Stering Committee Famb. Of Stering Committee Fample Objects of CDC Center SupportSupervise Objects SupportSupervise Objects of CDC Center SupportSupervise Objects SupportSupe			- Institutional Halling Culcance	- manualta Hanning Cardana	Andrew Transport of the Company of t
For Operation of CD For Operation of CD For Operation of CD For Operation of CD	Municipal Gov.	 Estab. of Steering Committee 	 Management of Steering Committee 	 Management of Steering Committee 	 Management of Meeting Communer
Committee Comm		for Operation of C/D	for Operation of C/D	for Operation of C/D	for Operation of C/D
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					& vallegrande C/D Centers
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Table A.1.5-1 Major Functions/Activities to be Performed by Institutions Concerned with O&M of C/D Centers - 2/2

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ing Committee - Support/Supervise O&M of C/D Center - Support/Supervis			Mairana, P. Grande & Comarapa	
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Vallegrande, Mairana & Pampa Grande Vallegrande, Mairana & Pampa Grande C/D Centers - Support Establishment of Users Cooperative in San Isidro - Management of Comarapa C/D Center - Management of Comarapa C/D Center	O&M of San Isidro, Samaipata, Saipin - O&M of Samaipata, Vallegrande,		- O&M of Mairana & Pampa Grande	
C/D Centers - Support Establishment of Users - Cooperative in San Isidro - Management of Comarapa C/D Center - Management of Comarapa C/D Center	Vallegrande, Mairana & Pampa Grande	Saipina, Mairana & Pampa Grande	C/D Centers	
Support Establishment of Users Cooperative in San Isidro Management of Comarapa C/D Center Management of Comarapa C/D Center	Centers	C/D Centers		
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Management of Comarapa C/D Center - Management of Comarapa C/D Center	:	in Samaipata, Vallegrande, Saipina	in Mairana & Pampa Grande	
	•	Management of Comarapa C/D	 Management of Comarapa C/D 	
			 Support Establishment of Cooperative in Comarapa 	ve in Comarapa

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

		es/Regulations
Items of Rules/Regulations	Initial Stage	Advanced Stage
rganizational Issues		
Steering Committee	- Steering committee for O&M of C/D center composed of representatives of Sub-project office, municipal government, management	 Management committee organized by CCUC Board of directors & general assembely take part of functions of steering committee
	body, users and other related innstitutions O&M guidelines, prescription of rules & regulations of C/D center	
	- Supervision, guidance & support of O&M - Reconcilation of conflicts	
Management Body	- Entrusting to existing farmers organization	- Organized within CCUC
Users Groups	- Individual users or arbitrary users groups	- CCUC
· · · · · · · · · · · · · · · · · · ·		
peration Issues Transaction System	- Cooperative collection, selection, packing & shipment and individual selling under name of C/D center	- Cooperative collection, selection, packing, shipment & selling under name of CCUC
·	- Transaction by the management under name of C/D center	 Transaction by the management under name of CCUC
Target Products	- Potatoes, vegetables & fruits in principle & other products approved by the management	 Potatoes, vegetables & fruits in principle & other products approved by the managemen
Qualification of Users	- Any farmers in target areas of collection who	- Members of CCUC & non-members accept
·	observe the rules & regulations	by the management
Users Fees	 Prescribed by municipal government throub steering committee 	- Prescribed by CCUC
	- Annual reiview with exceptional review	- Annual reiview with exceptional review
	in case of needs	in case of needs - Operating days & hours prescribed by the
Operating Days & Hours	 Operating days & hours prescribed by the management 	management
	- Users to observe strictly delibery times	- Users to observe strictly delibery times announced by the management
Preliminary Selection	announced by the management - By users under guidance of the management	- By users under guidance of the management
		- By users under guidance of the managemen
Delivery of Products	- By users under guidance of the management (time, forms of packing etc.)	(time, forms of packing etc.)
Counting/Weighing	- By C/D center at the presence of users	- By C/D center at the presence of users
at Delivery		
Selection/Standard	 By C/D center & grading standard decided by the management 	 By C/D center & grading standard decided by the management
Packing	- By C/D center & forms of packing decided	- By C/D center & forms of packing decided
	by the management	by the management - By C/D center
Counting/Weighing after Packing	- By C/D center	
Shippment	- By C/D center by employing transpoter	- By C/D center by employing transpoter
Destination Market	- Decided by the management	- Decided by the management
Selling & Price of Products	- By C/D center (at the presence of users)	- By C/D center
Accounting/Payment	- Payment after deducting trabsportation costs/users fees after receipt of disbursment	 Payment after deducting trabsportation costs/users fees after receipt of disbursmen from buyers by C/D center
Production Information	from buyers by C/D center - Users to supply information to C/D center	- Users to supply information to C/D center
·		- Users to observe security measures taken
Security & Sanitary Issues	 Users to observe security measures taken by the management 	by the management
Prohibition/Penalties	- Users negligence of rules/regulations will face penalty	- Users negligence of rules/regulations will face penalty
Mediation of Conflicts	- By municipal government/steering committee	

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		San Isidro S	amaipata V		/D Center Saipina	Mairana	P. Grande	Comara
egetables									············
omato	1. Production(t)		4,114	1,210	2,550	9,980	1,870	5,100	3,42
	2. Commercialization Rate(%)		90	90	90	. 90	90	90	9
	3. Rate of Collection(%)		70	60	. 70	70	80	70	7
	4. Target Collection Rate(%)	(2×3)	63	- 54	63	63	72	63	6
	5. Target Collection Volume(t)	(1×4)	2,592	653	1,607	6,287	1,346	3,213	2,15
	6. Net Unit Producers Price(US\$/t)	,	135	135	135	135	135	135	13
	7. Annual Hundling Amount(US\$)	(5×6)	349,896	88,209	216,878	848,799	181,764	433,755	290,87
ettuce	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(%)	(2×3)		54			72	63	
	5. Target Collection Volume(t)	(1×4)		594			1,742	3,339	
	6. Net Unit Producers Price(US\$/t)	(/		100			100	90	
	7. Annual Hundling Amount(US\$)	(5×6)		59,400			174,240	300,510	
hoclo	1. Production(t)		1,452						
	2. Commercialization Rate(%)		90						
	3. Rate of Collection(%)		70						
	4. Target Collection Rate(%)	(2×3)	63						
	5. Target Collection Volume(t)	(1 x 4)	915	,					
	6. Net Unit Producers Price(US\$/t)	(,	285						
	7. Annual Hundling Amount(US\$)	(5 x 6)	260,707		, e s				
rcen Penner	1, Production(t)	(*)	5,390				1,100		1,0
	2. Commercialization Rate(%)		90				90		9
	3. Rate of Collection(%)		70				80		
•	4. Target Collection Rate(%)	(2×3)	63				72		1
	5. Target Collection Volume(t)	(1 x 4)	3,396			-	792	12.4	6
	6. Net Unit Producers Price(US\$/t)	(205				205		2
	7. Annual Hundling Amount(US\$)	(5 x 6)	696,119				162,360		129,1
Beans/Peas	1. Production(t)			165	2,200	2,420		2,860	1,2
	2. Commercialization Rate(%)			90	90	90	-	90	
	3. Rate of Collection(%)			60	70	70		70	
	4. Target Collection Rate(%)	(2 x 3)		54	63	63		. 63	
	5. Target Collection Volume(t)	(1 x 4)		89	1,386	1,525		1,802	· · ,8
	6. Net Unit Producers Price(US\$/t)			435	435	435	•	435	·, . 4
-	7. Annual Hundling Amount(US\$)	(5 x 6)		38,759	602,910	663,201	<u> </u>	783,783	350,7
Fotal	A. Total Collection Volume		6,902	1,337	2,993	7,812	3,881	8,354	3,5
	B. Total Annual Hundling Amount(US\$)	1,306,721	186,368	819,788	1,512,000		1,518,048	770,8
ighted Aver	age Net Unit Producers Price(US\$/t) (B/A)	189	139	274	194	134	182	2
ruits									
Peach/Pum	1. Production(t)			1,350	5,750		2,200		. 6
	2. Commercialization Rate(%)			90	90	1.0	-90		100
	3. Rate of Collection(%)			80	70		80		
	4. Target Collection Rate(%)	(2×3)		72	63		72		
	5. Target Collection Volume(t)	(1 x 4)	*	972	3,623	.1.	1,584		3
	6. Net Unit Producers Price(US\$/t)			420	420		420		. 4
	7. Annual Hundling Amount(US\$)	(5 x 6)		408,240	1,521,450		665,280		158,7
Citrus	1. Production(t)			1,500			550		
	2. Commercialization Rate(%)			90			90		
	3. Rate of Collection(%)			80			80		
	4. Target Collection Rate(%)	(2 x 3)		72	•	•	72		
	5. Target Collection Volume(t)	(1 x 4)		1,080			396		
	6. Net Unit Producers Price(US\$/t)		·	135	1000		135	and the second second	
	7. Annual Hundling Amount(US\$)	(5 x 6)		145,800	<u> </u>		53,460		
Total .	A. Total Collection Volume			2,052	3,623	0	1,980		
	B. Total Annual Hundling Amount	(US\$)		554,040	1,521,450	0	718,740		
eighted Ave	rage Net Unit Producers Price(US\$/			270	420		36:	3 249	
Potatoes	1. Target Collection Volume(t)		4,160	2,910	5,810	6,490	1,290	3,210	
	2. Net Unit Producers Price(US\$/t)		220	220	220	220			
	3. Annual Hundling Amount(US\$)		915,200	640,200	1,278,200	1,427,800	283,80	706,200	690,
	A. Target Collection Volume		11,062	6,299	12,425	14,302	7,15	1 12,509	
Overall	a. Target Concention Volume								
Overail	B. Annual Hundling Amount(US\$)	•		1,380,608	3,619,438	2,939,800	1,520,90	4 2,459,553	1,620

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

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

										ì		
!		Ļ	2001	2002	2003	2004	2005	2006	2007	2008		2010 & on
C/D Center	cts	retors	1 620	2 160	2.700	3.240	3.780	4,160	4,160	4,160	4,160	4,160
San Isidro	Potatoes	Target Collection Volume(t)	020,1	720	220	220	220	220	220	220	220	220
		Net Producers Price (USA/I)	077	077	703	713	832	915	915	915	915	915
		Hundling Amount(US\$1.000)	326	4/3	160	C1/	040 2	0289	6.870	6.870	6.870	6,870
	Vegetables	Target Collection Volume(t)	2,520	3,370	012.4	0,00	180	0.00	180	189	189	189
		Net Producers Price(US\$/t)	189	189	189	100	103	102	000	200	1 208	1 298
,	• .	Hundling Amount(US\$1,000)	476	637	796	954	6/1,1	1,298	067.1	1,620	11 030	11 030
	Total	Target Collection Volume(t)	4,140	5,530	6,910	8,290	10,020	11,030	11,030	050,11	11,030	2000
		Sales Amount(TIS\$1 000)	833	1,112	1,390	1,667	2,011	2,214	2,214	2,214	4,2,14	+1777
	9	Torget Collection Volume(t)			830	1,250	1,660	2,080	2,650	2,910	2,910	2,910
Samaipata	rotatoes	Net Beducer Described			220	220	220	220	220	220	220	220
		(set Froducess Frince Open)			183	275	365	458	583	640	640	25
		Hunding Amount Cost.com			380	570	770	096	1,220	1,350	1,350	1,350
	Vegetables	Larget Collection Volume(t)			130	139	139	139	139	139	139	139
		Net Producers Price(USS/U)	-		5	79	107	133	170	188	188	188
		Hundling Amount(US\$1,000)			000	460	810	1 130	1.370	1.800	1,940	2,090
	Fruits	Target Collection Volume(t)			020	07.6	070	2270	270	270	270	270
		Net Producers Price(USS/t)			0/7	130	010	305	370	486	524	564
	ļ	Hundling Amount(US\$1.000)			00	201	0700	4 170	0775	6.060	6.200	6.350
	Total	Target Collection Volume(t)			1,530	015,2	5,240 102	906	1 122	1314	1.352	1,392
		Hundling Amount(US\$1,000)			322	48/	1430	020	5.050	2 200	092.5	5.810
Vallegrande	Potatoes	Target Collection Volume(t)			1,590	2,380	3,170	9966	050,5	2,500	22.6	220
)		Net Producers Price(US\$/t)			220	220	077	077	777	777	2361	1 278
		Hundling Amount(US\$1,000)			350	524	697	871	1,111	1,144	1,20,1	077.1
	Vegetables	Target Collection Volume(t)			510	089	820	1,020	1,260	2,080	2,710	2,560
		Net Producers Price (118\$/t)			274	274	274	274	274	274	2/4	7/7
		Her Houses Hire (See 9)			140	186	233	279	345	570	743	811
	; ;	Trenst Collection Volume(t)			890	1.190	1,490	1,790	2,200	2,770	3,340	3,650
		Not Producers Price(11S\$/t)	٠		420	420	420	420	420	420	420	420
		Hundling Amount(US\$1.000)			374	200	979	752	924	1,163	1,403	1,533
	Total	Target Collection Volume(t)			2,990	4,250	5,510	6,770	8,510	10,050	11,810	12,420
		Hundling Amount(15\$1 000)			863	1,210	1,556	1,902	2,380	2,877	3,413	3,622
	Detector	Target Collection Volume(t)			2.130	3,100	4,230	5,080	5,920	6,490	6,490	5,490
Saipina		Not Droducers Price(LISC/f)			220	220	220	220	220	220	220	- 220
		Lindling Amount(1981 000)			469	682	931	1,118	1,302	1,428	1,428	1,428
		Torret Collection Volume(t)			2.440	3.430	4.760	5,710	7,060	7,810	7,810	7,810
	vegetables	Net Producers Price(I IS\$(f)			194	194	194	194	194	194	194	194
		Hundling Amount [155] (000)			473	665	923	1,108	1,370	1.515	1,515	1,515
	T	Torner Collection Volume(t)			4 570	6.530	8.990	10,790	12,980	14,300	14,300	14,300
٠		Hundling Amount(HSS1 000)			942	1.347	1,854	2,225	2,672	2,943	2,943	2,943
•		Hunding Amount Coarses)										

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

							X	Year				
C/D Center	Commodit	, Fctors	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 & on
Mairana	Potatoes	Target Collection Volume(t)				410	540	820	950	1,160	1,290	1,290
-		Net Producers Price(US\$/t)				220	220	220	220	220	220	220
		Hundling Amount(US\$1,000)				06	119	180	602	255	284	284
	Vegetables	Target Collection Volume(t)				1,250	1,670	2,500	2,920	3,530	3,890	3,890
	٠	Net Producers Price(US\$/t)			-	134	134	134	134	134	134	134
		Hundling Amount(US\$1,000)				168	224	335	391	473	521	521
	Fruits	Target Collection Volume(t)				640	820	1,280	1,490	1,800	2,020	2,020
		Net Producers Price(US\$/t)		4		363	363	363	363	363	363	363
•	-	Hundling Amount(US\$1,000)				232	309	465	541	653	733	733
	Total	1 Target Collection Volume(t)				2,300	3,060	4,600	5,360	6,490	7,200	7,200
		Hundling Amount(US\$1,000)				490	651	086	1,141	1,382	1,538	1,538
Pampa Grande	Potatoes	Target Collection Volume(t)				810	1,220	2,030	2,430	2,840	3,210	3,210
		Net Producers Price(US\$/t)			:	220	220	220	220	220	220	220
		Hundling Amount(US\$1,000)				178	268	447	535	625	706	706
	Vegetables	Target Collection Volume(t)				1,990	2,990	5,060	6,070	7,500	8,380	8,380
		Net Producers Price(US\$/t)				182	182	182	182	182	182	182
		Hundling Amount(US\$1,000)				362	544	921	1,105	1,365	1,525	1,525
	Fruits	Target Collection Volume(t)				220	330	550	099	820	950	950
		Net Producers Price(US\$/t)	!			249	249	249	249	249	249	249
		Hundling Amount(US\$1,000)				55	82	137	15	202	237	237
	Total	Target Collection Volume(t)				3,020	4,540	7,640	9,160	11,160	12,540	12,540
	.	Hundling Amount(US\$1,000)	:			595	895	1,504	1,804	2,194	2,468	2,468
Comarapa	Potatoes	Target Collection Volume(t)				1,180	1,570	1,960	2,350	2,920	3,140	3,140
		Net Producers Price(US\$/t)				220	220	220	220	220	220	220
		Hundling Amount(US\$1,000)				260	345	431	517	642	169	691
	Vegetables	Target Collection Volume(t)				1,330	1,770	2,210	2,650	3,280	3,590	3,590
		Net Producers Price(US\$/t)				215	215	215	215	215	215	215
		Hundling Amount(US\$1,000)				286	381	475	570	705	772	772
	Fruits	Target Collection Volume(t)				100	140	170	200	250	380	380
٠		Net Producers Price(US\$/t)			-	420	420	420	420	420	420	420
		Hundling Amount(US\$1,000)				42	59	71	84	105	160	160
	Total	Target Collection Volume(t)				2,610	3,480	4,340	5,200	6,450	7,110	7,110
		Hundling Amount(US\$1,000)	and the second s			- 588-	785	978	1,171	1,453	1,622	1,622
Overall	Potatoes	Target Collection Volume(t)	1,620	2,160	7,250	12,370	16,170	20,090	23,510	25,680	26,960	27,010
		Hundling Amount(US\$1,000)	356	475	1,595	2,721	3,557	4,420	5,172	5,650	5,931	5,942
	Vegetables	Target Collection Volume(t)	2,520	3,370	7,540	14,300	19,050	24,330	28,050	32,420	34,600	34,850
		Hundling Amount(US\$1,000)	476	637	1,462	2,701	3,591	4,550	5,249	6,114	6,562	6,631
	Fruits	Target Collection Volume(t)	0	0,	1,210	2,640	3,620	4,920	5,920	7,440	8,630	060,6
		Hundling Amount(US\$1,000)	0	. 0	460	1961	1,294	1,730	2,083	2,612	3,056	3,227
	Total	Target Collection Volume(t)	4,140	5,530	16,000	29,310	38,840	49,340	57,480	65,540	70,190	70,950
			833	1,112	3,517	6.384	8,443	10,700	12,504	14,376	15,549	15,799
Remarks I: Ne	t Producers Pric	Remarks 1: Net Producers Price: selling price at market - transpor	transportation costs	+ ***	Remarks 2: N	et Producers	Price in veg	etables & fru	its: weighted	Remarks 2: Net Producers Price in vegetables & fruits: weighted average net producers price	producers pr	မ္သ

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

Commence of the Charleton	San Isidro	San Isidro Samainata Vallegrande) allegrande	C/D Center Sainina	Mairana	P. Grande Comarapa	Сотагара
Commodity/ractors	Sall Island	Camerbana	ance: mice	2			4
A. Base Users Fee(%)	5.0	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	2.5
C. Users Fees to Be Collected (A + B)	7.5	7.5	0.9	7.0	7.5	7.5	7.5
Proportion of Selection/Packing Costs to Net Unit Producers Price(%)							
Potatoes	4.160	2.910	5.810	6,490	1,290		3,140
2. Annual Hundling Amount(US\$1,000)	915	640	1,278	1,428	284	200	691
Vegetables							
1. Collection Volume(t)	6,870	1,350	2,960	7,810	3,890	8,380	3,590
2. Annual Hundling Amount(US\$1,000)	1,298	188	811	1,515	521	1,525	772
Fruits							
1. Collection Volume(t)		2,090	3,650		2,020	950	380
2. Annual Hundling Amount(US\$1,000)		564	1,533		733	237	160
Overall							
1. Collection Volume(t)	11,030	6,350	12,420	14,300	7,200	_	7,110
2. Annual Hundling Amount(US\$1,000)	2,214	1,392	3,622	2,943	1,538	4	1,622
Overall Net Unit Producers Price(US\$/t) (2/1)	201	219	292	206	214		228
Cooperative Selection/Packing Costs(US\$/)	6.0	6.0	6.0	6.0	6.0	0.9	6.0
Proportion of Selection/Packing Costs to Net Unit Producers Price(%)	3.0	2.7	2.1	2.9	2.8		2.6

Remarks 1: Target collection volumes and annual hundling amount at full operation stage(see Table A.1.5-3) Remarks 2: Overall Net Unit Producers Price = Wighted average net unit producers price

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

			Con Icidao	Con Iridao C. Contor					Samainata C/D Center	/D Center		
	-	1et & 2nd Year	Ι.	1	From 3rd Year		Is	st & 2nd Year			From 3rd Year	
	!				This Date	, and a		Thir Date	Amount		Linit Rate	Amount
	Itame	No (175%)	Amount (TISS)	Ž		CUS\$)	Š	(USS)	(USS)	No.	(USS)	(SSD)
0.35	Management	Í -	00100	-	0 100	0010	-	0016	010	-	9.100	9 100
I. Starr Kernaneranon	Manager	001,6	2017	٠.	201	201.		2037	200	-	9	V 500
	Superviser I	005,6	9,500	-	2000	2000	-	O)Cro	2000	•	3	3
	Superviser 2			-	6,500	6,500					:	
	Administration/Accounting Staff	1 4,500	4,500	_	4,500	4,500				-	4,500	4,500
	Staff at Destination Market	1 2,600	2,600		2,600	2.600	1	1.300	1,300	I	1,300	1,300
	Sub-Total	4	22.700	'n		29,200	3.		16.900	4		21,400
A desiration of Contra	1 C.m/30% of remuraming)		6810			8.760			5.070			6,420
2. Administration Costs	Lainp Sum(3076 of Temanstation)		2100									•
Total (Manage	Total (Management & Administration Costs)		29,510			37,960			21,970			27,820
			Vallegrande	Vallegrande C/D Center					Saipina C/D Center	O Center		:
		Second Sad Very	2000	1	From 3rd Vear		Ţ	st and 2nd Years			From 3rd Year	
	1	ner ,	. 1		00.0	6		6	Ł	-	o to	0 100
1. Staff Remuneration	Мапаgeт	1 9,100	9.100	 •	9,100	9,100	٦.	30,7	33,	٠,	2,100	201,6
	Superviser I	1 6.500	6,500		6,500	6,500		6,500	6,500	-	9700	2000
	Superviser 2			~ •	6,500	6,500				-	6,500	6,500
	Administration/Accounting Staff	1 4.500	4.500	p.4	4.500	4,500		4,500	4,500		4,500	4,500
	Staff at Destination Market	1 2,600	2.600	•	2.600	2,600		2,600	2,600	7	2,600	2,600
٠	Start at Countainon Plants		2000	,		20,200	4		22.700	5		29.200
-	Sub-Total	t	30,73	,		0010			0107	1		0.35.0
2. Administration Costs	Lump Sum(30% of remuneration)		6,810			%'\ %			0,810			8.78
				-					0.00			020.00
Total (Manage	Total (Management & Administration Costs)		29,510			37,380		,	015,62	0 000		27.700
				Mairana C/D Center				3.	Pampa grande CD Center	Cocenter		
	•	1st & 2nd Year			From 3rd Year		ls	st & 2nd Year	.	ı.	From 3rd Year	
1 Staff Remuneration	Manager	I 9,100	9,100	-	9,100	9,100	7	9,100	9,100	-	9,100	9,100
	Supervisor!	1 6.500	6.500	_	6.500	6,500		6,500	6,500	1	6,500	6.500
	Cupanicon									1	6.500	6,500
	Supervisor =				200	200	,-	7 500	4 500	-	A SOO	4 500
	Administration/Accounting Staff		000	~4 F	86	55	- ·	80	85.6	-	200	200
	Staff at Destination Market		000.1	-	300	300	- .	2,000	2007	-	4,000	0000
	Sub-Total	en.	16,900	4		21.400	4		22,700	'n		29,200
2. Administration Costs	Lump Sum(30% of remuneration)	-	5,070			6,420			6,810			8.760
Total (Manage	Total (Management & Administration Costs)		21.970		-	27.820			29.510			37,960
and the same of	//		Comarapa C/D Center	C/D Center								
		1st and 2nd Years		1	From 3rd Year							
1 Conff Demundantion	1	1 0100	0.100		9.100	0016						
1. Mail Reministration	Manager	0037	2017		2017	2000						
٠.	Superviser	00c'o I	3000	-1	3000	2000						
	Superviser 2											
	Administration/Accounting Staff			 1.	4,500	4,500						
	Staff at Destination Market	1.300	1.300		1,300	1,300						
	Sub-Total	6	16,900	4		21,400						
2. Administration Costs	Lump Sum (30% of remuner		5,070		:	6,420						
Tarel (Manage	The state of the s		21 070			27 820						
ाणवा (म्पनावहरू	Total (Management of Administration Costs)		41,710			070.17						

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

				Year				
1	-1st	İst	2nd	3rd	4th	Sth	6th	7th & on
Coeff	2000	2001	2002	2003	2004	2005	2006	2007 & on
I. Target Collection Volumes(t)		4,140	5,530	6,910	8,290	10,020	11,030	11,030
II. Annual Hundling Amount(US\$1,000)	٠.	832.7	1,112.1	1,389.7	1,667.3	2,011.0	2,213.6	2,213.6
III. Users Fees Collected(USS1.000; II x 7.5%)		62.5	83.4	104.2	125.0	150.8	166.0	166.0
(000)		803	99.4	119.1	129.1	141.7	160.1	160.1
IV. Operation Costs(USS), UUU)		503	59.3	69.1	69.1	69.1	80.2	80.2
I. Fixed Costs(USS1,000)		20.5	29.5	38.0	38.0	38.0	38.0	38.0
a. Management Administration Costs		22.7	22.7	29.2	29.2	29.2	29.2	29.2
Operation Staff Remuneration		89	8.9	80.00	8.8	8.8	8.8	8.8
Administration Costs		1.0	1.0	1.0	1.0	1.0	12.1	12.1
5. Extension service costs							6.5	6.5
Extension Personnel							3.6	3.6
Extension Services Costs		1.0	10	1.0	1.0	1.0	2.0	2.0
Institutional Iraining Costs		2:0 2:0	5.0	5.0	5.0	5.0	5.0	5.0
C. OCINI OI CID Cellici		7.6	97	8.5	8.5	8.5	8.5	8.5
d. Coding of vehicle(50%)		11.6	911	11.6	11.6	11.6	11.6	11.6
e. Depreciation Costs of Datturings 3.76 f. Depreciation Costs of Vehicle & Equipment (10%)		4.6	4.6	4.9	4.9	4.9	4.9	4.9
		000	100	50 1	109	72.6	79.9	79.9
2. Variable Costs(US\$1,000)		20.0	+0.1 F 0	50.1		0.6	6.6	6.6
a. Loading & Un-loading Costs(US\$ 0.9/t)		7.6	J. C.	71.6	7 07	109	66.2	66.2
b. Selection & Packing Costs(US\$ 6.0/t)		0.4.7	19.50	7.4	5.0	3.5	ю. 00:	3.8
c. Misceraneous $\{(a + b) + 0.00\}$		†.	:	i	i			
V. Users Fees - Operation Costs (USS1.000; III - IV)		-26.8	-15.9	-14.9	4.	9.2	5.9	5.9
VI. Users Fees - Operation Costs(no depreciation)(US\$1.000: III -	ш-гу)	-10.6	0.3	1.6	12.5	25.7	22.5	22.5
1	Q'ty Amount	Q'ty · Amount	Q'ty Amount	Q'ty Amount	Total			
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)		1		1 3.2	9.5			
Total	109.7	25.2		7.6	130.1			

Remarks 1: Depeciation 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 — Iton/1manday; labor costs @US\$6.00eUS\$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 - 27: Samaipata C/D Center

					Year	-			
1	-1st	lst	2nd	3rd	4th	5th	6th	7th	8th & on
Costs	2002	2003	2004	2005	2006	2007	2008	2009	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	6:069	896.1	1,122.5	1,313.9	1,351.7	1,392.2
III. Users Fees Collected(USSI.000; II x 7.5%)		24.1	36.5	51.8	67.2	84.2	5.86	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
1. 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		0.5	5.0	0.5	0.5	6.5	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)		4.1	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. Misceraneous $((a + b) * 0.05)$		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	9.0-	<u>E.</u>
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)	- IV)	-21.0	-14.3	-11.5	-2.9	6.4	9.2	11.0	12.9
VII. Initial Investment Costs(US\$1,000)	Q'ty Amount	Q'ty Amount	Total						
a. Construction	1 60.5		\$.09						
b. Equipment/Facility	1 15.8		15.8						
c. Vehicle(1 ton truck)		1 18.9	18.9	٠					
d. Motorcycle(125 cc)		2 6.3	6.3						
Total	76.3	25.2	101.5						
Pemarks 1. Depectation Costs of Building estimated replacemen		t costs of A SOHFRIT facility 11SS 250 000 x 0.03	\$\$ 250 000 × 0.0°						

Remarks 1: Depeciation Costs of Building --- estimated replacement costs of ASOHFRUT facility US\$ 256,000 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 --- Iton/Imanday; 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

					Year				
		1 2 3	2nd	3rd	4th	Sth	6th	7th	8th & on
	3SI-	2003	2004	2005	2006	2007	2008	2009	2010 & on
Costs Tornes Collection Volumes(1)	7007	2,990	4,250	5,510	6,770	8,510	10,050	11,810	12,420
I. Lagor Concessor Commercy	-	863.3	1,209.7	1,556.1	1,902.5	2,380.2	2,877.3	3,412.5	3,622.2
III There Heet Collected (1881 000: II x 6.0%)		51.8	72.6	93.4	114.2	142.8	172.6	204.8	217.3
III. Cotts to Consolidate and the Cotts of t		0	0 00	1177	126.8	140.4	169.4	182.1	186.5
IV. Operation Costs(US\$1.000)		0.68	0.07	1.67	7.77	78.7	96.5	96.5	96.5
1. Fixed Costs(USS1,000)		0.860	085.U	38.0	38.0	38.0	38.0	38.0	38.0
a. Management/Administration Costs		£ 60	22.7	29.2	29.2	29.2	29.2	29.2	29.2
Operation Staff Kemuneration		, , , , , , , , , , , , , , , , , , ,	89	00	8.8	8.8	8.8	80 80	8.8
Administration Costs		9:0	0.	1.0	1.0	2.0	19.8	19.8	19.8
b. Extension Service Costs		2:1					13.0	13.0	13.0
Extension Personnel		-					4.8	4.8	&. &.
Extension Services Costs		-	9	0 -	0.1	2.0	2.0	2.0	2.0
Institutional Training Costs		0.1) V	0.5	2.0	5.0	5.0	5.0	5.0
c, O&M of C/D Center		0.00	0.0) v	00	85	8.5	8.5	8.5
d. O&M of Vehicle(30%)		0.7	5. 60	50.00	203	20.3	20.3	20.3	20.3
e. Depreciation Costs of Buildings(3%)		203	2.52.5	4	4.9	4.9	4.9	4.9	4.9
 Depreciation Costs of Vehicle & Equipment(10%) 		0.4	ř	}	•				
(000 13311) to 2 (1757-17 C		21.7	30.8	39.9	49.0	61.7	72.8	85.6	90.0
Z. Variable Cosis(Usa Livou)		2.7	8	5.0	6.1	7.7	0.6	10.6	711.7
a. Loading & Un-toading Costs (USA U.9/L)		17.9	25.5	33.1	40.6	51.1	60.3	70.9	74.5
b. Selection & Packing Costs(US+ 0.07) c. Misceraneous ((a + b) * 0.05)		1.0	1.5	1.9	2.3	2.9	3.5	4.1	4 ,
V. Users Fees - Operation Costs(USS1.000; III - IV)		-37.8	-26.2	-24.3	-12.6	2.4	3.3	22.6	30.8
VI Item Fees - Operation Costs(no depreciation)(US\$1,000: III - IV	: III - IV)	-12.9	-1.3	6.0	12.6	27.6	28.5	47.9	56.0
VII. Initial Investment Costs (USS1.000)	y A	Q'ty Amount	Q'ty Amount	O'ty Amount	Total				
a. Construction	1 405.6				405.6				
b. Equipment/Facility	1 21.0				21.0				
c. Vehicle(1 ton truck)		1 18.9		,	18.9				
d. Motorcycle(125 cc)				3.2	0.527				
Total	426.6	,		3.2	455.0				
	,	11 CO O O COURT OF A DO O O O O O O O O O O O O O O O O O	500						

Remarks 2: Loading & Un-loading Costs — loading 10v4 men x 1.5hr; un-loading 10v4 men x 1.0hr = 10v/10manhours; labor costs @US\$7.00/8manhours x 10manhours=US\$0.90/t
Remarks 3: Selection & Packing Costs — Iton/Imanday; labor costs @US\$6.00=US\$6.00/t
Remarks 4: VI. Users Fees - Operation Costs — operation costs not including depreciation costs Remarks 1: Depeciation Costs of Building --- estimated construction costs of facility US\$ 405,600 x 0.03

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Table A.1.5-7 Annual Operation Plan and Initial Investment Costs of C/D Centers - 4/7: Saipina C/D Center

				Year			
	-1st	lst	2nd	3rd	4th	Sth	6th & on
Costs	2002	2003	2004	2005	2006	2007	2008 & on
I. Target Collection Volumes(t)		4,570	6,530	8,990	10,790	12,980	14,300
II. Annual Hundling Amount(US\$1,000)		942.0	1,347.4	1,854.0	2,225.3	2,672.0	2,942.9
III. Users Fees Collected(USS1,000; II x 7.0%)		6.59	94.3	129.8	155.8	187.0	206.0
IV Operation Costs(13S1.000)		9.96	110.8	138.4	160.8	186.1	195.7
1. Fixed Costs(US\$1.000)		63.5	63.5	73.3	82.6	92.1	92.1
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		8.9	. 8.9	80. 80.	8.8	89. 80. 80.	8.8
b. Extension Service Costs		1.0	1.0	1.0	10.3	8.61	19.8
Extension Personnel			,		6.5	13.0	13.0
Extension Services Costs					2.8	4.8	4.8
Institutional Training Costs		1.0	1.0	1.0	1.0	2.0	2.0
c. O&M of C/D Center		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
e. Depreciation Costs of Buildings(3%)		15.8	15.8	15.8	15.8	15.8	15.8
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)		33.1	47.3	65.1	78.2	94.0	103.6
a. Loading & Un-loading Costs(US\$ 0.9/t)		4.1	5.9	8.1	2.6	11.7	12.9
b. Selection & Packing Costs(US\$ 6.0/t)		27.4	39.2	53.9	64.7	677	85.8
c. Misceraneous $\{(a+b)*0.05\}$		1.6	2.3	3.1	3.7	2.4	4.9
V. Users Fees - Operation Costs(US\$1,000; III - IV)		-30.7	-16.5	-8.7	-5.0	6.0	10.3
VI. Users Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)		-10.2	3.9	12.1	15.8	21.7	31.1
VII. Initial Investment Costs(US\$1,000)	O'ty Amount	O'ty Amount	O'ty Amount	Q'ty Amount	Total		
a. Construction	1 528.3				528.3		
b. Equipment/Facility	1 21.0			٠	21.0		
c, Vehicle(1 ton truck)	,				18.9		
d. Motorcycle(125 cc)	-	2		1 3.2	9.5		
Total	549.3	25.2		3.2	577.7		

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\$7.00/8manhoursx10manhours=US\$0.90/t Remarks 1: Depeciation Costs of Building --- estimated construction costs of facility US\$ 538,300 x 0.03 Remarks 3: Selection & Packing Costs --- Iton/Imanday; 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 - 5/7: Mairana C/D Center

NAME OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER OF THE OWNER OWNE				Year			
		**	2.00	3rd	4th	Sth	6th & on
	2003	2004	2005	2006	2007	2008	2009 & on
I. Target Collection Volumes(t)	5007	2,300	3,060	4,600	5,360	6,490	7,200
II. Annual Hundling Amount(US\$1,000)		490.0	651.1	0.086	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
		7 87	747	91.2	296.7	104.9	115.2
IV. Operation Costs(US\$1,000)		52.0	52.0	57.8	57.8	57.8	63.0
I. Fixed Costs(USSI, UUU)		22.0	22.0	27.8	27.8	27.8	27.8
a. Management Administration Costs		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
Februarion Control		0.5	0.5	0.5	5.0	5.0	5.7
Extension Personnel							3.3
Extension Services Costs							1.4
Indicational Training Costs		0.5	0.5	0.5	0.5	5.0	1.0
INSTITUTION TO THE PROPERTY OF		4.5	. 4	4.5	4.5	4.5	4.5
A DAM of Wellial (2008)		99	9.9	9:9	9.9	6.6	9.9
u. Occivi of Veiller(30%)		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 Mariable Correct 1881 0000		167	22.2	33,3	38.8	47.0	52.2
Z. Validole Costs (Costs) Costs (Costs)			2.8	4.1	8.4	5.8	6.5
a. Loading & Oil-roading Costs (Ost V.71) F. Colonting & Doubing Costs (198 & 04)		13.5	18.4	27.6	32.2	38.9	43.2
c. Misceraneous ((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)	IV)	-13.5	-7.0	0.7	7.3	17.2	18.6
VII. Initial Investment Costs(US\$1,000)	Q'ty Amount	t Q'ty Amount	Total				
a. Construction(including land acquisition cost)	1 491.4	_	491.4				
b. Equipment/Facility	1 15.8		15.8				
c. Vehicle(i ton truck)		1 18.9	18.9				
d. Motorcycle(125 cc)		-	3.2				
Total	207.7	7.77	2.62.0				

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 1: Depeciation Costs of Building --- estimated construction costs of facility US\$ 487,100 x 0.03 Remarks 3: Selection & Packing Costs --- Iton/Imanday; 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

	Year						
	-lst	lst	2nd	3rd	4th	Sth	6th & on
Costs	2003	2004	2002	2006	2007	2008	2009 & on
I. Target Collection Volumes(t)		3,020	4,540	7,640	9,160	11,160	12,540
II. Annual Hundling Amount(US\$1,000)		595.2	894.8	1,504.5	1,803.7	2,194.0	2,467.9
III. Users Fees Collected(USS1,000; 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(USS1.000)		67.8	67.8	. 9'12	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		8.9	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		1.0	1.0	1.0	1.0	1.0	2.0
c. O&M of C/D Center		9.9	0.9	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(118\$1 000)		21.9	32.9	55.4	66.4	80.9	6.06
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. Misceraneous $\{(a+b)*0.05\}$		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
AT 11.20 Exc. Description of descriptions of the IND.		213	· «	40	; 4	30.2	29.6
VII. Initial Investment Costs(USS1.000)	O'ty Amount	Q'ty Amount Q'ty	Amount	Q'ty Amount	Total		
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		٠
Total	663.1	25.2		3.2	691.5		

Remarks 2: Loading & Un-loading Costs — loading 10V4 men x 1.5hr; un-loading 10V4 men x 1.0hr = 10V10manhours; 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 Remarks 1: Depeciation Costs of Building --- estimated construction costs of facility US\$ 636,800 x 0.03

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

1. Target Collection Volumes()	The state of the s				Year			
2003 2004 2005 2006 2007 2008 2009 & cop 2		12	lef	2nd	3rd	4th	Sth	6th & on
2610 3,480 4,340 5,200 6,450 71, 87, 87, 87, 87, 87, 87, 87, 87, 87, 87		2003	2004	2005	2006	2007	2008	2009 & on
587.6 784.8 977.8 1,170.8 1,422.6 1,62 44.1 58.9 73.3 87.8 108.9 12 44.1 58.9 73.3 87.8 108.9 13 50.3 50.3 50.3 56.1 56.1 56.1 103.4 11 50.3 50.3 50.3 56.1	1 Target Collection Volumes(t)		2,610	3,480	4,340	5,200	6,450	7,110
44.1 \$8.9 73.3 87.8 108.9 12 69.2 75.5 87.6 93.8 103.4 11 50.3 50.3 50.3 56.1 56.1 56.1 56.6 50.3 50.3 50.3 56.1 56.1 57.8 27.8 50.4 50.4 50.4 50.4 50.4 50.5 50.5 50.5 50.5 50.5 50.5 60.5 50.5 50.5 50.5 50.5 50.5 60.5 50.5 50.5 50.5 50.5 60.5 50.5 50.5 50.5 50.5 60.5 50.5 50.5 50.5 50.5 60.5 50.5 50.5 60.5 50.5 50.5 50.5 60.5			587.6	784.8	977.8	1,170.8	1,452.6	1,622.3
85 692 755 87.6 938 1034 11 8 120 220 27.8 561 566 6 1 1 1 15.8 16.9 12.4 21.4 21.4 5 1	III. Users Fees Collected(US\$1.000; II × 7.5%)		44.1	58.9	73.3	87.8	108.9	121.7
Sci. 1 S			703	75.5	87.6	93.8	103.4	117,4
10000-111-1V 22.0 27.8	IV. Operation Costs(US\$1.000)		503	\$0.5 50.3	56.1	56.1	56.6	629
rent(10%) S1, 51, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64	1. Fixed Costs(US\$1,000)		20.5	22.0	27.8	27.8	27.8	27.8
Si Si Si Si Si Si Si Si	a. Management/Administration Costs		0.77	16.9	21.4	21.4	21.4	21.4
10 10 10 10 10 10 10 10	Operation Staff Remuneration		5.1	5.1	6.4	6,4	6.4	6.4
1.0	Administration Costs		50	0.5	0.5	0.5	1.0	10.3
1.0	b. Extension Service Costs		}					6.5
10.5	Extension resonates							2.8
1.000; III - IV)	Extension Services Costs		50	0.5	0.5	0.5	1.0	1.0
1.56 7.6	Institutional Training Costs		40	4.0	4.0	4.0	4.0	4.0
12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.3 13.3	c. O&M: of C/D Center		7.6	7.6	7.6	7.6	7.6	7.6
18.9 25.2 31.4 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1	d. O&M of Vehicle(30%)		12.2	12.2	12.2	12.2	12.2	12.2
18.9 25.2 31.4 37.7 46.7 2.3	e. Depreciation Costs of Vehicle & Equipment(10%)		4.1	4.1	4.1	4.1	4.1	4.1
19.3 3.1 3.9 4.7 5.8 15.7 20.9 26.0 31.2 38.7 15.7 20.9 26.0 31.2 38.7 -25.2 -16.7 -14.2 -6.0 5.6 1 405.6 1 15.8 15.8 1 15.8 1 18.9 18.9 421.4 25.2 446.6			001	750	31.4	37.7	46.7	51.5
15.7 20.9 26.0 31.2 38.7 15.7 20.9 26.0 31.2 2.2 15.8 1.8 2.2 25.2 -16.7 -14.2 -6.0 5.6 25.2 -16.7 -14.2 -6.0 5.6 1 405.6 1 15.8 15.8 1 15.8 1 18.9 18.9 421.4 25.2 446.6	2. Variable Costs(US\$1,000)		10.7		3.0	4.7	5.8	6.4
\$\text{S1,000, III - IV}\$ \[\begin{array}{cccccccccccccccccccccccccccccccccccc	a. Loading & Un-loading Costs (US\$ 0.9/t)		5.7	20.9	26.0	31.2	38.7	42.7
S1,000; III - IV) Qity Amount Qity Am	b. Selection & Packing Costs (US\$ 0.07)c. Misceraneous {(a + b) * 0.05}		6.0	112	1.5	1.8	2.2	2.5
preciation)(US\$1,000; III - IV) Qty Amount Qty Amount Total 405.6 15.8 1 405.6 15.8 15.8 2 6.3 6.3 421.4 25.2 446.6	V. Users Fees - Operation Costs(US\$1,000; III - IV)		-25.2	-16.7	-14.2	-6.0	5.6	4.2
Q'ty Amount Q'ty Amount Tota	VI Ilsers Fees - Operation Costs(no depreciation)(US\$1,000; III - IV)		6.8	-0.4	2.0	10.3	21.9	20.5
1 405.6 1 15.8 1 18.9 2 6.3 421.4 25.2	VII Initial Investment Costs (US\$1,000)	ł		Total				
1 15.8 1 18.9 2 6.3 421.4 25.2 4	a. Construction			405.6				
1 18.9 2 6.3 421.4 25.2 4	b. Equipment/Facility	15.8		15.8				
421.4 25.2	c. Vehicle(1 ton truck)			18.9				
421.4 25.2	d. Motorcycle(125 cc)			6.3				
	Total	421.4	25.2	446.6				

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

Remarks 2: Loading & Un-loading Costs --- loading 10v4 men x 1.5hr, un-loading 10v4 men x 1.0hr = 10v/10manhours; labor costs @US\$7.00/8manhours x 10manhours=US\$0.90/1

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

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%	 Operation deficits for infitial 1 year. Full depreciation amounts will be reserved from 6th year. Operation surplus at the full operation stage estimated at US\$ 22.5 thousand. 	 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.
Samaipata Users Fees: 7.5%	 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. 	 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%	 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. 	 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 shoild better be revised(reduced) based on operation results.
Saipina Users Fees: 7.0%	 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. 	 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%	 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. 	 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%	 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. 	 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%	 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. 	- 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

															ĺ						500
	Items	2000 2	2001	2002 2	2003 2	2004 20	2005 20	2006 200	2007 2008	38 2009	9 2010	2011	2012	2013	2014	2015	2016	2017	2018	6107	0.0
I. Cash Inflow	1. Initial Investment	109.7	25.2		3.2						010	25.0	-	3.2			220.0	ļ			535.2
	2. Cash Reserve				1	- 1	ł	1660	71 0 251	166.0 166	1660	-	0 166.0	1	166.0	0.991	ļ	166.0	166.0	166.0	4,814.0
	3. Users Fees		62.5	83.4	2.45	0.62	130.6			1	1	ł	1	1							0.0
	4. Long Term Loan Total	109.7	98.3	83.4	107.4	125.0	150.8	166.0	166.0 16	166.0 160	166.0 187.0	0 191.2	2 166.0	0 169.2	2 166.0	0 166.0	556.0	166.0	166.0	166.0	5,349.2
II. Cash Outflow	1. Investment Costs					·.											387.0			3	387.0
	- C/D Development	88.7		j							2.1	21.0									63.0
	- Facility/Equipment	21.0	25.7		3.2							25.2									82.0
	- venicie iviolote - Subtotal	109.7	25.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	21.0 25.2	2 0.0	0 3.2	2 0.0	0.0	387.0	0.0	9	0.0	335.0
	2. C/D Operation Costs	0.0	73.1	83.1	102.6	112.6	i					- 1	- 1	- 1		5 143.5	143.5	143.5	143.5	143.5	4,161.5
Sec. (1975)	Total	109.7	98.3	83.1	105.8	112.6	25.7	143.5	143.5 L	143.5 14 22.5 2	22.5 22.5	22.5 22.5 22.5 22.5	5 22.5	5 22.5	5 22.5		1		225	22.5	655.7
III. Cash surpids Denen	Alicii.	3	<u>.</u>	}																	
TV. Loan Repayment Principal	int Principal						10.6														
	Interest(12%)						5.1														
	Total						15.7	- [ŀ		ŀ	-1		* 11.	0 001	24	270	504	72.9	193.4
V Cumilative Cash Reserve				0.3	1.9	14.3	24.3	46.8	69.3	24.3 46.8 69.3 91.8 114.3		115.8 113.1	135.6	6 154.9	-	-		١			
/D Center: Sz	C/D Center: Samaipata C/D Center											Vest								U	Unit:US\$ 1.000
	, small	2002	2003	2004	2005	2006	2007	2008 20	2009 20	2010 2011	11 2012	2 2013	3 2014	2015	2016	2017	2018	2019	2020	2021 2	2022 - 2050
I Cash Inflow	1. Initial Investment		۱,	1	1												220.0				373.0
	2. Cash Reserve							- 1	- 1	- 1	- 1	- 1	-	ı	- 1	7. 7.		1,00	104.4	194	3.027.6
	3. Users Fees		24.1	36.5	51.8	67.2	84.2	98.5	101.4	104.4	104.4	104.4 104.4	104.4	4.104.4	t.		1	1			
	4, Long Term Loan	1.47	21.0	50.8	633	70.1	84.2	98.5	101.4	104.4 10	104.4 10	104.4 104.4	1,4 104.4	1,4 120.2	2 129.6	6 104.4	354.4	104.4	104.4	104,4	3,400.6
II. Cash Outflow	1. Investment Costs	3						1	l .	Į.	1						0.030				250.0
	- C/D Development	60.5												1	15.8		2002				47.4
	- Facility/Equipment	15.8	0												25.2	2					75.6
	- venicie/Motorcycle 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	15.8 25.2	.2 0.0	0 250.0	99	0:0	0.0	373.0
			15.1	808	63.3	102	77.8	89.4	4.06	91.5	6 5.19	91.5 91	16 5.16	16 5.16	91.5 91.5	5 91.5	- 1	- 1	91.5	91.5	2,653.5
	Total	76.3	70.3	50.8	63.3	70.1	77.8	89.4	90.4							-	$^{\circ}$	91.5	91.5	91.5	3.026.5
III. Cash Surplus/Deficit		0:0	0.0	0.0	0.0	0.0	6.4	9.1	11.0		12.9	12.9 12	12.9 12	12.9 12	12.9 12.9	9 12.9	9 12.9	ĺ	12.9	12.9	1.4/6
IV Loan Renavment Principal	ent Principal								15.0	10.01	10.01		4.7								
T. Com troped	Interest(5%)								5.4	4.0			2.1								-
	Total								20.4	14.0			ł	1	Ì		ł	١	. [10,	0.1,
Transfer of the Control of the Contr							6.4	15.5	6.1	6.4 15.5 6.1 5.0 3.7		2.4	8.5 21	21.4 18	18.5 6	6.2 19.1	1 2.0	14.9	8.17	5	

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

Unit: US\$ 1,000	2022 - 20	0.0	217.3 2,824.9		217.3 3,326.1	405.6	42.0	53.6	0.0 501.2	161.3 2,096.9	56.0 728.0				719.3 8540.1	1 mirring 1 000		21 2022-2034	0.0	206.0 2,678.0		206.0 3,301.9	528.3	21.0		0.0		4	51.1 450.5				426.6 253.2
	202 2021		217.3 21		217.3 21				0.0		56.0				663.3 71	on costs		20 2021		206.0 20	l i	206.0 20				0.0	- 1	1	31.1			- 1	395.5 42
	19 2020	.	217.3 2.1		217.3 21				00		56.0			- 1	607.3 66	lepreciati		19 2020		206.0 20	1 1	206.0 20	;			0.0	ļ		31.1			- 1	364.4
	18 2019		217.3 21	l l	217.3 21		,		0.0		\$6.0			. 1	551.3 66	cluding o		18 2019		206.0 20	1 1	206.0 20			ļ	0.0	ļ	-	31.1			- 1	333.3 36
	17 2018		2173 2		217.3 2				0:0		56.0			- 1	495.3 5:	s — not in		17 2018		206.0 20	1 1	206.0 20				0:0			31.1			ı	302.2
	16 2017		217.3 2		217.3 2				0.0		56.0			1	439.3 45	tion Cost		16 2017		206.0 20	Į I	206.0				000	- 1	- 1	31.1	•		- 1	271.1 30
	2015 2016		3.2		220.5 21			3.2	3.2	- 1	56.0				383.3 45	/D Opera		2015 2016		3.2 206.0 20	1 1	209.2 20			3.2	3.2	174.9 17	- 1	31.1			ļ	240.0 27
	2014 20		2173 2	1	217.3 2				0.0	ļ	56.0				330.5	Remarks 2: C/D Operation Costs not including depreciation costs		2014 20		206.0 20		206.0 20				0.0	ŀ		31.1			- 1	212.1 24
	2013 20		25.2		242.5 2			25.2	25.2		56.0				274.5 3	Ren		2013 20	į	25.2		231.2 2			25.2	25.2	- 1	.]	31.1				181.0 2
	Year 2012 20		21.0	1	238.3		21.0		21.0	- 1	56.0				243.7	SIS	Year	2012 20		206.0	1	227.0 2		21.0		21.0	174.9		31.1				175.1
	2011 2		, 173	1	217.3				0.0	- 1	56.0			ΙI	208.7	cration co		2011 2	:	2060		206.0				0.0	174.9	ı	31.1				165.0
	2010 2		2172		217.3				0.0	161.3	56.0				152.7	mitial op		2010 2		0902	1	206.0				0.0	174.9	174.9	31.1				133.9
	2009		9 50	i	204.8				0.0	156.9	156.9.				7.96	12% for		2009		206.0		206.0				0.0	174.9	174.9	31.1				102.8
	2008		7 021	1/2.0	172.6				0.0	14.1	28.5				8.8	iterest rate		2008		206.0	Į	206.0				0.0	174.9	174.9	31.1				71.7
	2007		9 641	0.747	142.8				0.0	115.2	27.6	14.2	6.7	20.9	20.3	C/D at in	-	2007		0.731	2.01	187.0				0.0	165.4	165.4	21.6				40.6
	2006			114.6	114.2				0.0	101.6	101.6				13.6	mment to		2006		155.8	123.0	155.8				0.0	140.0	140.0	15.8				19.0
	2005	3.2	7 68	43.4	9.96			32	3.2	92.4	95.6				1.0	apal gove		2005	3.2	170.8	0.621	133.0			3.2	3.2	117.7	1 1	12.1	10.3	2.5	12.8	3.2
	2004		200	0.7	73.9				0.0	73.9	73.9					by munic		2004		6 70	ĵ.	94.3				0.0	8	4.06	3.9				3.9
	2003	25.2	0.5	12.0	89.9			25.2	25.2	64.7	0.0					provided		2003	25.2	65.0	503	101.4			25.2	25.2	76.2	101.4	0:0				
	2002	426.6			426.6	405.6	21.0		426.6	0.0	426.6					term loan		2002	549.3	-		549.3	5783	21.0		549.3		549.3	0.0				
C/D Center: Vallegrande C/D Center	Items	1. Cash Inflow 1. Initial Investment		3. Users Fees	Total	Cash Outflow 1. Investment Costs CAD Development	- Faciliy/Equipment	- Vehicle/Motorcycle		2. C/D Operation Costs	Total III. Cash Surplus/Deficit	W I can Dangmant Principal	Loui repayment interpri	Total	V. Cumulative Cash Reserve	Remarks 1: Long Term Loan assuming long term loan provided by municipal government to C/D at interest rate 12% for initial operation costs	C/D Center: Saipina C/D Center	fems	I, Cash Inflow 1. Initial Investment	2. Cash Reserve	3. Users Frees 4. Short Term Joan	Fotal	II. Cash Outflow 1. Investment Costs	- Facility/Equipment	- Vehicle/Motorcycle	Subrotal	2. C/D Operation Costs		III. Cash Surplus/Deficit	IV. Loan Repayment Principal	Interest(12%)	Total	V. Cumulative Cash Reserve