

Table N.1.2 Economic Farmgate Price of Unmilled Rice (1998/99 price)
(per Ton exported)

| Item | Unit | Price |
|--|------|-------|
| World Bank projected price to the year 2010 for rice, Thai 5% broken F.O.B. Bangkok in 1990 constant price | US\$ | 207 |
| Adjusted to 1998/99 price(-4%) 1/ | US\$ | 270 |
| Ocean Freight and insurance | US\$ | 0 |
| Cost F.O.B. Alexandria Port | US\$ | 270 |
| Converted to LE(US\$1=LE3.40) 2/ | L.E | 945 |
| Port charges, handling, etc. 3/ | L.E | 28 |
| Wastage and losses(3% of F.O.B.) | L.E | 27 |
| Exporter Charge, etc.(5% of F.O.B.) | L.E | 47 |
| Price at Alexandria Port | L.E | 843 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of price at Alexandria) 4/ | L.E | 74 |
| Ex-mill price of rice at Delta | L.E | 753 |
| Price at milled rice | L.E | 71 |
| Equality price of paddy(65% milling rate) | L.E | 932 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 443 |
| Trader's margins etc.(10% of unmilled price) 5/ | L.E | 7 |
| Economic Farmgate price of Unmilled rice(paddy) | L.E | 39 |

(Remark)
1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
3/ : L.E 42 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
4/ ~ 5/ : Adjusted by SCF of 0.88.

Table N.1.4 Economic Farmgate Price of Maize (1998/99 price)
(per Ton imported)

| Item | Unit | Price |
|--|------|-------|
| World Bank projected price to the year 2010 for Maize, US No.2 Yellow, F.O.B. US Gulf Ports in 1990 constant price | US\$ | 100 |
| Adjusted to 1998/99 price(-4%) 1/ | US\$ | 104 |
| Ocean Freight and insurance | US\$ | 13 |
| Cost C.I.F. Alexandria Port | US\$ | 117 |
| Converted to LE(US\$1=LE3.40) 2/ | L.E | 398 |
| Quality adjustment 3/ | L.E | 318 |
| Port charges, handling, etc. 4/ | L.E | 37 |
| Wastage and losses(3% of C.I.F.) | L.E | 10 |
| Importer Charge, etc.(5% of C.I.F.) | L.E | 16 |
| Price at Alexandria Port | L.E | 381 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of price at Alexandria) 5/ | L.E | 33 |
| Price at Delta | L.E | 430 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 7 |
| Trader's margins etc.(10% of Delta price) 6/ | L.E | 38 |
| Economic Farmgate price of maize per ton | L.E | 385 |
| Economic Farmgate price of maize per ardeb(140kg) | L.E | 54 |

(Remark)
1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
3/ : A 20% discount factor on the price of yellow U.S. No.2 maize is used to reflect lower price of white maize in Egyptian market.
4/ : L.E 42 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
5/ ~ 6/ : Adjusted by SCF of 0.88.

Table N.1.3 Economic Farmgate Price of Wheat (1998/99 price)
(per Ton imported)

| Item | Unit | Price |
|--|------|-------|
| World Bank projected price to the year 2010 for wheat, US No.1 Hard Red Winter F.O.B. at Gulf Ports in 1990 constant price | US\$ | 128 |
| Adjusted to 1998/99 price(-4%) 1/ | US\$ | 133 |
| Ocean Freight and insurance | US\$ | 14 |
| Cost C.I.F. Alexandria Port | US\$ | 149 |
| Converted to LE(US\$1=LE3.40) 2/ | L.E | 507 |
| Port charges, handling, etc. 3/ | L.E | 37 |
| Wastage and losses(3% of C.I.F.) | L.E | 15 |
| Importer Charge, etc.(5% of C.I.F.) | L.E | 25 |
| Price at Alexandria Port | L.E | 584 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of price at Alexandria) 4/ | L.E | 51 |
| Price at Delta | L.E | 651 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 7 |
| Trader's margins etc.(10% of Delta price) 5/ | L.E | 57 |
| Economic Farmgate price of wheat per ton | L.E | 587 |
| Economic Farmgate price of wheat per ardeb(150kg) | L.E | 88 |

(Remark)
1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
3/ : L.E 42 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
4/ ~ 5/ : Adjusted by SCF of 0.88.

Table N.1.5 Economic Farmgate Price of Broad Beans (1998/99 price)
(per Ton imported)

| Item | Unit | Price |
|--|------|-------|
| World Bank projected price to the year 2010 for wheat, US No.1 Hard Red Winter F.O.B. at Gulf Ports in 1990 constant price | US\$ | 128 |
| Adjusted to 1998/99 price(-4%) 1/ | US\$ | 133 |
| Ocean Freight and insurance | US\$ | 16 |
| Cost C.I.F. Alexandria Port | US\$ | 149 |
| Converted to LE(US\$1=LE3.40) 2/ | L.E | 507 |
| Port charges, handling, etc. 3/ | L.E | 37 |
| Wastage and losses(3% of C.I.F.) | L.E | 15 |
| Importer Charge, etc.(5% of C.I.F.) | L.E | 25 |
| Price at Alexandria Port | L.E | 584 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of price at Alexandria) 4/ | L.E | 51 |
| Price at Delta | L.E | 651 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 7 |
| Trader's margins etc.(10% of Delta price) 5/ | L.E | 57 |
| Economic Farmgate price of wheat | L.E | 587 |
| Economic Farmgate price of broad beans per ton 6/ | L.E | 1,642 |
| Economic Farmgate price of broad beans per ardeb(155kg) | L.E | 255 |

(Remark)
1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
3/ : L.E 42 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
4/ ~ 5/ : Adjusted by SCF of 0.88.
6/ : Adjusted by the ratio of average prices of pulses and wheat, 1975 to 1984, Table 15, World Bank Commodity Trade and Price Trends, 1995 edition.

Table N.1.6 Economic Farmgate Price of Sugar-beet (1998/99 price)
(per Ton imported)

| Item | Unit | Price |
|---|------|-------|
| World Bank projected price to the year 2010 for Sugar, International Sugar Agreement (ISA) daily price, raw/F.O.B. and stowed at greater Caribbean Ports in 1990 constant price | US\$ | 216 |
| Adjusted to 1998/99 price(-4%) 1/ | US\$ | 225 |
| Ocean Freight and insurance | US\$ | 35 |
| Cost C.I.F. Alexandria Port | US\$ | 260 |
| Converted to L.E.(US\$1=L.E.3.40) 2/ | L.E | 884 |
| Port charges, handling, etc. 3/ | L.E | 40 |
| Wastage and losses(3% of C.I.F.) | L.E | 27 |
| Importer Charge, etc.(7.5% of C.I.F.) | L.E | 66 |
| Price at Alexandria Port | L.E | 1017 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of price at Alexandria) 4/ | L.E | 90 |
| Price at Delta | L.E | 1123 |
| Processing costs 5/ | L.E | 31 |
| Price at sugar factory | L.E | 1092 |
| Price of Sugarbeet 6/ | L.E | 142 |
| Price of molasses 7/ | L.E | 4 |
| Total | L.E | 146 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 7 |
| Trader's margins etc.(10% of sugarbeet price) 8/ | L.E | 13 |
| Economic Farmgate price of sugar-beet | L.E | 126 |

(Remark)
 1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
 2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
 3/ : L.E 42 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
 4/ : 1 ton sugarbeet yields: 130kg raw sugar, 50kg molasses, 700kg beet pulp and 120kg of waste.
 5/ : 50kg molasses at L.E80/ton.

Table N.1.8 Economic Farmgate Price of Onion(1998/99 price)
(per Ton exported)

| Item | Unit | Price |
|---|------|-------|
| Price F.O.B. Alexandria Port in average price from 1995 to 1997 | L.E | 410 |
| Adjusted to 1998/99 price(-8%) 1/ | L.E | 377 |
| Port charges, handling, etc. 2/ | L.E | 37 |
| Wastage and losses(3% of F.O.B.) | L.E | 11 |
| Exporter Charge, etc.(5% of F.O.B.) | L.E | 19 |
| Price at Alexandria Port | L.E | 343 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of price at Alexandria) 3/ | L.E | 30 |
| Price at Delta | L.E | 297 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 7 |
| Trader's margins etc.(10% of Delta price) 4/ | L.E | 26 |
| Economic Farmgate price of Onion(-4% Vegetables) | L.E | 264 |

(Remark)
 1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
 2/ : L.E 42 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
 3/ : 4/ : Adjusted by SCF of 0.88.

Table N.1.7 Economic Farmgate Price of Cotton (1998/99 price)
(per Ton exported)

| Item | Unit | Price |
|--|------|--------|
| A. Cotton lint for export: | | |
| World Bank projected prices for the year 2010 for the price middling 1-3/32 inch, C.I.F. Europe in 1990 constant price | US\$ | 1,493 |
| Adjusted to 1998/99 price(-4%) 1/ | US\$ | 1,553 |
| Quality premium of (+120%) | US\$ | 3,417 |
| Ocean Freight and insurance to Europe | US\$ | 412 |
| Cost F.O.B. Alexandria Port | US\$ | 3,005 |
| Converted to L.E.(US\$1=L.E.3.40) 2/ | L.E | 10,217 |
| Port charges, handling, etc. 3/ | L.E | 35 |
| Wastage and losses(3% of F.O.B.) | L.E | 307 |
| Exporter charge, etc.(5% of F.O.B.) | L.E | 511 |
| Price at Alexandria Port of 1,00mt of lint | L.E | 9,364 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Price of lint at Delta(local ginners) | L.E | 9,348 |
| B. Cotton seed: | | |
| World Bank projected prices for the year 2010 for soybeans C.I.F. US\$ rapps(Rotterdam) in 1990 constant price | US\$ | 247 |
| Adjusted to 1998/99 price(-4%) | US\$ | 257 |
| Cotton seed price C.I.F. Alexandria, 80% of soybean 4/ | US\$ | 206 |
| Converted to L.E.(US\$1=L.E.3.40) 2/ | L.E | 700 |
| Port charges, handling, etc. 5/ | L.E | 28 |
| Wastage and losses(3% of C.I.F.) | L.E | 21 |
| Importer charge, etc.(5% of F.O.B.) | L.E | 35 |
| Price at Alexandria Port | L.E | 784 |
| Transport from Port to Delta(120km, L.E 0.13/ton-km) | L.E | 16 |
| Trader's margins etc.(10% of Delta price) 6/ | L.E | 69 |
| Price at Delta | L.E | 869 |
| C. Seed cotton: | | |
| One ton seed cotton has : 289kg lint | L.E | 2,702 |
| 544kg seed | L.E | 473 |
| Total | L.E | 3,175 |
| Ginning cost 7/ | L.E | 122 |
| Transport from farm to Delta (50km, L.E 0.13/ton-km) | L.E | 7 |
| Trader's margins etc.(5% of Delta price) 8/ | L.E | 140 |
| Economic Farmgate price per ton | L.E | 2,906 |
| Economic Farmgate price per Kantar(157.5kg) | L.E | 458 |

(Remark)
 1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index(in constant 1990 dollars).
 2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
 3/ : L.E 40 of port charges, handling, etc. are adjusted by standard conversion factor(SCF) of 0.88.
 5/ : 8/ : Adjusted by SCF of 0.88.
 4/ : Adjusted by the ratio of average prices of cotton seed and soybeans from 1971 to 1984, World Bank Commodity Trade and Price Trend, 1986 edition.

Table N.1.9 Economic Farmgate Price of Fertilizer (1998/99 price) (per Ton)

| Item | Unit | Urea (N) | Super-Phosphate (P2O5) | Muriate Potash (K2O) |
|---|------|----------|------------------------|----------------------|
| World Bank projected price to the year 2010 for Urea, bagged, spot, F.O.B. West Europe in 1990 constant price | US\$ | 139 | 112 | 99 |
| Adjusted to 1998/99 price(=N) 1/ | US\$ | 145 | 116 | 99 |
| Ocean Freight and insurance | US\$ | 18 | 15 | 13 |
| Cost C.I.F. Alexandria Port | US\$ | 163 | 131 | 112 |
| Converted to L.E.(US\$=L.E.5.40) 2/ | L.E. | 554 | 445 | 381 |
| Port charges, handling, etc. 3/ | L.E. | 28 | 23 | 28 |
| Wastage and losses(3% of C.I.F.) | L.E. | 17 | 13 | 11 |
| Importer Charge, etc.(5% of C.I.F.) | L.E. | 28 | 22 | 19 |
| Bagging | L.E. | - | 31 | 31 |
| Price at Alexandria Port | L.E. | 627 | 539 | 470 |
| Transport from Port to Delta(120km, L.E. 0.13/ton-km) | L.E. | 18 | 16 | 16 |
| Distributor's margin etc.(10% of price at Alexandria) 4/ | L.E. | 55 | 47 | 41 |
| Price at Delta | L.E. | 698 | 602 | 527 |
| Transport from farm to Delta (50km, L.E. 0.13/ton-km) | L.E. | 7 | 7 | 7 |
| Local Distributor's margin etc.(10% of price at Delta) 5/ | L.E. | 61 | 53 | 46 |
| Economic farmgate price of fertilizer | L.E. | 766 | 662 | 580 |
| % of N, P2O5, K2O | % | 46 | 44 | 50 |
| Economic farmgate nutrient price | L.E. | 1,665 | 1,505 | 1,160 |

(Remark)

- 1/ : Inflated to 1998/99 basis by World Bank C-5 MUV price index(in constant 1990 dollars).
- 2/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
- 3/ : 5/7 ; Adjusted by SCF of 0.85.

Table N.1.10 Economic Cost of Farm Labour (1998/99 price)

| Item | Unit |
|--|------------|
| 1. Average farm household size in the Priority Area | person |
| 2. Full-time Workers per household 1/ | 2.0 |
| 3. No. of Farm Household (exclude landless) 2/ | 24,793 |
| 4. No. of Farm Household (include landless) 2/ | 28,316 |
| 5. Present labour supply 3/ | 58,632 |
| 6. Man-hours per worker per year 4/ | 1,440 |
| 7. Present farm labour utilization 5/ | 81,550,080 |
| 8. Present off-farm labour utilization 7/ | 29,586,156 |
| 9. Present farm labour utilization 7/ | 25,484,400 |
| 10. Total W/O (present) labour utilization | 56,070,556 |
| 11. W/O percentage of utilization to total labour supply 8/ | 67.5 |
| 12. W/P farm labour utilization 9/ | 32,635,056 |
| 13. Total W/P labour utilization 10/ | 58,119,456 |
| 14. W/P percentage of utilization to total labour supply 11/ | 71.3 |
| 15. Standard conversion Factor(SCF) | 0.88 |
| 16. W/O labour conversion factor 12/ | 59.4 |
| 17. W/P labour conversion factor 13/ | 62.7 |
| 18. Present farm labour wage per hour 14/ | L.E |
| 19. W/O economic cost of farm labour per hour 15/ | 0.79 |
| 20. W/P economic cost of farm labour per hour 16/ | 0.83 |

(Remark)

- 1/ : 65% of family is labor force(32) and actually working No. is 60% by the result of Farm Economy survey. Hence the full-time worker is 5.24(60/95)=2.0
- 2/ : No. of Farm household in Charbia, Dakahlia, and Kfar El Sheikh in the Priority Area is 2,309, 980, and 21,304 respectively.
- No. of Farm household with landless is estimated regarding the ratio of landless farm household by governorate as :
2,509/(1-0.08)=980/(1-0.11)=21,304/(1-0.13)=28,316

(ratio of landless)

| | Charbia | Dakahlia | Kfar El Sheikh |
|---------------|---------|----------|----------------|
| Landless | 19,146 | 32,787 | 21,487 |
| Land holder | 206,208 | 303,961 | 171,319 |
| % of Landless | 8 | 11 | 13 |

Source: Agriculture Census 1989/90

- 3/ : No.2=No.5
- 4/ : 240days/year=6hour.
- 5/ : No.5=No.6
- 6/ : Based on present cropping pattern, land use and labour(man/day or hour) by crops. Refer to Table N.1.18
- 7/ : Off-farm labour utilization: 0.5 labour/Hr.H=500 day.No. of household/hour. (0.8 labor per 5.1 labor force by the result of Farm Economy Survey. Hence for average farm household = 0.8*32/5.1 = 6.5
- 8/ : 6/ : No.10/No.7
- 9/ : Based on proposed cropping pattern, land use and labour(man/day or hour) by crops. Refer to Table N.1.18
- 10/ : No.9 = No.12
- 11/ : No.13/No.7
- 12/ : No.15 = No.11
- 13/ : No.15 = No.14
- 14/ : Average farm labour wage of L.E.8(during the last three years) /6 hour.
- 15/ : No.18 = No.16
- 16/ : No.18 = No.17

Table N.1.1.11 Pumping Cost at Economic Price (1998/99 price)

| Item | Unit | 5HP | 7.5~7.7HP | 15.5HP |
|---|-----------|---------|-----------|---------|
| 1) Investment costs (1998/99) | | | | |
| 1) Replacement cost of pumps (1986/87 price) 1/ | US\$ | 1,070 | 1,418 | 1,891 |
| 2) Value in 1998/99 price (1.04/0.87) 2/ | US\$ | 1,279 | 1,695 | 2,261 |
| 3) Converted to L.E (US\$=LE3.40) 3/ | L.E | 4,349 | 5,762 | 7,687 |
| 2) Pumping Cost | | | | |
| 1) Fixed costs of operation per hour | | | | |
| Investment costs | L.E | 4,349 | 5,762 | 7,687 |
| 1) Amortization cost 4/ | L.E | 762.43 | 1010.32 | 1347.62 |
| 2) Repair and maintenance cost 5/ | L.E | 381.22 | 505.16 | 673.81 |
| Total | L.E | 1143.65 | 1515.48 | 2021.43 |
| Life hours per year | hr. | 1000 | 1000 | 1000 |
| Fixed costs per hour | L.E | 1.14 | 1.52 | 2.02 |
| 2) Variable cost of operation per hour | | | | |
| 1) Diesel fuel cost | L.E/liter | 0.39 | 0.39 | 0.39 |
| 2) Lubricants cost 6/ | L.E/liter | 0.04 | 0.04 | 0.04 |
| 3) Required per hour | liter | 1.00 | 1.30 | 2.10 |
| 4) Variable cost per hour | L.E | 0.43 | 0.56 | 0.9 |
| 3) Operator cost per hour 7/ | L.E | 1.76 | 1.76 | 1.76 |
| Total operating cost per hour | L.E | 3.33 | 3.84 | 4.68 |

(Remark)

- 1/ : Based on the information provided by Agricultural Mechanization Project Shepley et al. Agri. Cost Model.
- 2/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index (in constant 1990 dollars).
- 3/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
- 4/ : Amortization assuming at a interest rate of 10%, 10 years.
Life time: 10000 hours, 10 years, 1000 hours/ year.
- 5/ : 50% of amortization cost.
- 6/ : 10% of fuel cost.
- 7/ : Financial operator cost = SCF.

Table N.1.1.13 Economic Cost of Diesel Fuel (1998/99 price)

| Item | Unit |
|--|-------------|
| World Bank projected price to the year 2010 for Crude Oil, average spot of, in 1990 constant price | US\$/barrel |
| Adjusted to 1998/99 price (=4%) 1/ | US\$/barrel |
| Adjusted to projected diesel fuel of 1998/99 price 2/ | US\$/barrel |
| Converted to L.E (US\$=LE3.40) 2/ | L.E/barrel |
| Economic price of diesel fuel per litre 4/ | L.E/litre |

(Remark)

- 1/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index (in constant 1990 dollars).
- 2/ : Based on the assumption that diesel and petroleum prices will remain in the same general proportion as in 1985.
- 3/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
- 4/ : It is assumed that one ton of diesel equals 1150 litres.

Table N.1.1.12 Economic Cost of Threshing - Winnowing Machine Operation (1998/99 price)

| Item | Unit |
|---|-----------|
| 1) Investment costs (1998/99) | |
| 1) Replacement cost of chisel plow (1986/87 price) 1/ | US\$ |
| 2) Value in 1998/99 price (1.04/0.87) 2/ | US\$ |
| 3) Converted to L.E (US\$=LE3.40) 3/ | L.E |
| 2) Operating Cost | |
| 1) Fixed costs of operation per hour | |
| Investment costs | L.E |
| 1) Amortization cost 4/ | L.E |
| 2) Repair and maintenance cost 5/ | L.E |
| Total | L.E |
| Life hours/year | hr. |
| Fixed costs per hour | L.E |
| 2) Variable cost of operation per hour | |
| 1) Diesel fuel cost | L.E/liter |
| 2) Lubricants cost 6/ | L.E/liter |
| 3) Required per hour | liter |
| 4) Variable cost per hour | L.E |
| 3) Driver wage per hour 7/ | L.E/man/h |
| Sub-total operating costs | L.E |
| 4) Allowance for un productive time at 10% of sub-total | L.E |
| Total operating cost per hour | L.E |

(Remark)

- 1/ : Based on the information provided by Agricultural Mechanization Project Shepley et al. Agri. Cost Model.
- 2/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index (in constant 1990 dollars).
- 3/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
- 4/ : Amortization assuming at a interest rate of 10%, 10 years.
Life time: 4000 hours, 10 years, 400 hours/ year.
- 5/ : 100% of amortization cost.
- 6/ : 10% of fuel cost.
- 7/ : Financial operator cost = SCF

Table N.1.14 Economic Costs of Back Motor Sprayer Operation (1998/99 price)

| Item | Unit |
|---|--------------------|
| 1. Investment costs (1998/99) | |
| 1) 1993 Back motor sprayer Market Price 1/ | L.E 1,500 |
| 2) Adjusted to 1998/99 price (+15%) 2/ | L.E 1,730 |
| 3) Shadow price 3/ | L.E 1,500 |
| 4) Transport from Cairo to Project (80km, L.E 0.13/ton-km | L.E 10 |
| 5) Trader's margins etc. (10% of Cairo price) | L.E 150 |
| 6) Price at project | 1,660 |
| 2. Operating Cost | |
| 1) Fixed costs of operation per hour | |
| Investment costs | L.E 1,660 |
| 1. Amortization cost 4/ | L.E 291 |
| 2. Repair and maintenance cost 5/ | L.E 58 |
| Total | L.E 349 |
| Life hours/year | hr. 500 |
| Fixed costs per hour | L.E 0.70 |
| 2) Variable cost of operation per hour | |
| 1. Diesel fuel cost | L.E /liter 0.39 |
| 2. Lubricants cost 6/ | L.E /liter 0.04 |
| 3. Required per hour | liter 0.2 |
| 4. Variable cost per hour | L.E 0.09 |
| 3) Driver wage per hour 7/ | L.E./man/hour 1.76 |
| Sub-total operating costs per hour | L.E 2.55 |
| 4) Allowance for un productive time at 10% of sub-total | L.E 0.26 |
| Total operating cost per hour | L.E 2.81 |

(Remark)

- 1/ : Based on the information provided by Agricultural Mechanization Project: Shepley et al. Agri. Cost Model.
 2/ : Statistical Year Book
 3/ : 2/ * SCF
 4/ : Amortization assuming at a interest rate of 10%, 10 years.
 Life time: 5000 hours, 10 years, 500 hours/year.
 5/ : 20% of amortization cost.
 6/ : 10% of fuel cost.
 7/ : Financial operator cost * SCF

Table N.1.15 Economic Costs of Tractor Operation (1998/99 price)

| Item | Unit |
|--|--------------------|
| 1. Investment Costs (1998/99) | |
| 1) Import cost of tractor C.I.F. Alexandria (1986/87 price) 1/ | US\$ 17,000 |
| 2) Value in 1998/99 price (1.04/0.87) 2/ | US\$ 20,322 |
| 3) Converted to L.E (US\$=L.E3.40) 3/ | L.E 69,095 |
| 4) Port charges, handling etc. 4/ | L.E 37 |
| 5) Wasteage and losses (3% of C.I.F.) | L.E 2,073 |
| 6) Importer Charge, etc. (5% of C.I.F.) | L.E 3,455 |
| 7) Price at Alexandria | L.E 74,660 |
| 8) Transport from Port to Delta (120km, L.E 0.13/ton-km | L.E 16 |
| 9) Distributer's margins etc. (10% of price at Alexandria) | L.E 7,466 |
| 9) Price at Delta | L.E 82,142 |
| 1) Fixed costs of operation per hour | |
| Investment costs | L.E 82,142 |
| 1. Amortization cost 5/ | L.E 19,365 |
| 2. Repair and maintenance cost 6/ | L.E 9,603 |
| Total | L.E 29,048 |
| Life hours/year | hr. 1,333 |
| Fixed costs per hour | L.E 21.79 |
| 2) Variable cost of operation per hour | |
| 1. Diesel fuel cost | L.E /liter 0.39 |
| 2. Lubricants cost 7/ | L.E /liter 0.04 |
| 3. Required per hour | liter 10 |
| 4. Variable cost per hour | L.E 4.29 |
| 3) Driver wage per hour 8/ | L.E./man/hour 1.76 |
| Sub-total operating costs per hour | L.E 27.84 |
| 4) Allowance for un productive time at 10% of sub-total | L.E 2.78 |
| Total operating cost per hour | L.E 30.62 |
| | = 31.00 |

(Remark)

- 1/ : Based on the information provided by Agricultural Mechanization Project: Shepley et al. AgriMech. Cost Model.
 2/ : Inflated to 1998/99 basis by World Bank G-5 MUV price index (in constant 1990 dollars).
 3/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
 4/ : Port charge, handling * SCF of 0.88.
 5/ : Amortization assuming at a interest rate of 10%, 6 years.
 Life time: 8000 hours, 6 years, 1333 hours/year.
 6/ : 50% of amortization cost.
 7/ : 10% of fuel cost.
 8/ : Financial operator cost * SCF

Table N.1.16 Economic Cost of Chisel Plowing (1998/99 price)

| Item | Unit |
|--|------------|
| 1. Investment Costs (1998/99) | |
| 1) Replacement cost of chisel plow (1986/87 price) 1 | US\$ 2,094 |
| 2) Value in 1998/99 price (1.04/0.87) 2/ | US\$ 2,503 |
| 3) Converted to L.E (US\$=L.E3.40) 3/ | L.E 8,510 |
| 2. Operating Cost | |
| 1) Fixed costs of operation per hour | |
| Investment cost | L.E 8,510 |
| 1. Amortization cost 4/ | L.E 2,296 |
| 2. Repair and maintenance cost 5/ | L.E 914 |
| Total | L.E 3,200 |
| Life hours/year | hr. 600 |
| Fixed costs per hour | L.E 5.33 |
| 2) Management charge per hour 6/ | |
| | L.E 0.53 |
| Total cost of plowing per hour | L.E 5.86 |
| Traction operation cost per hour | L.E 32 |
| Traction operation cost and plowing cost per hour | L.E 37.86 |
| | = 38.00 |

- (Remark)
- 1/ : Based on information from EUROCONSULT-PACER, Land Master Pla. Draft Final Report, Volume 6, Annex E-Agriculture, Appendix II.
 - 2/ : Inflated to 1998/99 price by World Bank G-5 MUV price index (in constant 1990 dollars).
 - 3/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
 - 4/ : Amortization assuming at a interest rate of 10%, 5 years. Life time: 3000 hours, 5 years, 600 hours/year.
 - 5/ : 40% of amortization cost.
 - 6/ : 10% of fixed costs per hour

Table N.1.17 Shadow price for Tractor-Trailer Transport Costs Including Loading (1998/99 price)

| Item | Unit |
|--|----------------------|
| 1. Investment Costs (1998/99) | |
| 1) Costs of Trailer (Capacity 27 tons, max : 24 ton) | |
| Vehicle replacement cost in 1982 1/ | L.E 56,304 |
| 2) Cost in US dollars (US\$=L.E0.83) 2/ | US\$ 67,836 |
| 3) Value in 1998/99 price (1.04/0.71=1.46) 3/ | US\$ 99,041 |
| 4) Converted to L.E (US\$=L.E3.40) 4/ | L.E 336,739 |
| 2. Transporting Cost | |
| 1) Fixed costs of Transportation | |
| Investment cost | L.E 336,739 |
| 1. Amortization cost 5/ | L.E 66,188 |
| 2. Fixed cost per ton-km 6/ | L.E/ton-km 0.060 |
| 2) Variable costs of operation per ton-km | |
| 1. Diesel fuel cost | L.E /liter 0.390 |
| 2. Lubricants cost 7/ | L.E /liter 0.039 |
| 3. Required per 24ton-km | liter/24ton-km 0.500 |
| 4. Variable costs per 24ton-km | L.E/24ton-km 0.210 |
| 5. Variable cost per ton-km 8/ | L.E/ton-km 0.013 |
| 3) Wages of crew per ton-km 9/ | L.E/ton-km 0.008 |
| 4) Others cost per ton-km 10/ | L.E/ton-km 0.024 |
| Sub-total costs per ton-km | L.E/ton-km 0.103 |
| 5) Management and unitized compensation 11/ | L.E/ton-km 0.021 |
| Total transportation cost per ton-km | L.E/ton-km 0.123 |
| | = 0.13 |

- (Remark)
- 1/ : Based on information collected from the General Nile Company for Heavy Transportation (GNCHT).
 - 2/ : Adjusted with the exchange rate of 1991.
 - 3/ : Inflated to 1998/99 price by World Bank G-5 MUV price index (in constant 1990 dollars).
 - 4/ : Adjusted with the exchange rate of December 1998 considering the sustainability.
 - 5/ : Amortization assuming at a interest rate of 10%, 8 years.
 - 6/ : a) Capacity: 27 ton, max: 24 ton.
b) Life time: 548,000km, 8 years, 68500km/year.
c) 67% of loaded when operating
d) Ton-km per year: 68500km * 24ton * 67% = 1101480 ton-km.
e) Cost per ton-km = Amortization costs / 1101480 L.E.
 - 7/ : 10% of fuel cost.
 - 8/ : (Variable costs per 24ton-km)/24ton/0.67 of (loading percent when operating).
 - 9/ : Wages of crew * SCF.
 - 10/ : 40% of amortization costs/1101480 ton-km.
Others : workshop costs (water and electricity), maintenance and spare parts etc. and unitized overhead costs.
 - 11/ : 20% of sub-total cost per ton-km.

Table N.1.18 Labor Utilization for Agriculture in the Priority Area

| Crop | Area fed | Labor hr/fed | Month | | | | | | | | | | | | Total | | | |
|-------------------|----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | | | | |
| Wheat | 20,640 | 174 | 433,440 | 227,040 | 247,680 | 371,520 | 1,114,560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 227,040 | 846,240 | 227,040 | 3,694,560 |
| Broad Bean | 4,090 | 174 | 44,990 | 44,990 | 44,990 | 269,940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49,080 | 212,680 | 44,990 | 711,660 |
| Sugarbeet | 5,210 | 258 | 78,150 | 119,830 | 182,350 | 182,350 | 182,350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260,500 | 260,500 | 78,150 | 1,344,180 |
| Long Beans | 11,240 | 236 | 337,200 | 337,200 | 337,200 | 337,200 | 337,200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 460,840 | 168,600 | 337,200 | 2,652,640 |
| Short Beans | 13,690 | 125 | 342,250 | 479,150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 219,040 | 547,600 | 342,250 | 2,149,330 |
| Winter Vegetables | 1,930 | 295 | 28,950 | 28,950 | 162,120 | 154,400 | 21,200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48,250 | 67,550 | 57,900 | 569,260 |
| Maize | 4,390 | 202 | 0 | 0 | 0 | 131,700 | 131,700 | 131,700 | 131,700 | 131,700 | 131,700 | 131,700 | 131,700 | 131,700 | 175,600 | 0 | 0 | 899,950 |
| Cotton | 11,430 | 470 | 0 | 0 | 457,200 | 800,100 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 914,400 | 0 | 0 | 5,372,100 |
| Rice | 29,860 | 262 | 0 | 0 | 0 | 0 | 0 | 2,448,520 | 895,800 | 895,800 | 895,800 | 895,800 | 895,800 | 895,800 | 3,135,300 | 0 | 0 | 7,823,320 |
| Water Melon seed | 8,990 | 172 | 0 | 0 | 0 | 611,320 | 242,730 | 359,600 | 89,900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,546,280 |
| Summer Vegetables | 2,130 | 469 | 0 | 0 | 0 | 191,700 | 125,670 | 170,400 | 170,400 | 170,400 | 170,400 | 170,400 | 170,400 | 170,400 | 170,400 | 0 | 0 | 998,370 |
| Citrus | 110 | 290 | 1,100 | 1,100 | 1,100 | 7,700 | 7,700 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 38,720 |
| Sub-Total | 113,710 | | 1,266,090 | 1,238,260 | 1,432,640 | 2,734,530 | 2,680,970 | 3,406,920 | 2,015,900 | 2,203,900 | 1,950,990 | 5,990,110 | 1,788,030 | 1,098,630 | 1,098,630 | 1,098,630 | 1,098,630 | 27,801,060 |
| Livestock | | | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 1,765,095 |
| Grand Total | | | 1,414,838 | 1,387,018 | 1,581,398 | 2,883,288 | 2,833,128 | 3,555,678 | 2,164,538 | 2,352,058 | 2,099,148 | 6,139,868 | 1,936,788 | 1,247,388 | 1,247,388 | 1,247,388 | 1,247,388 | 29,566,156 |

(With Project Situation)

| Crop | Area fed | Labor hr/fed | Month | | | | | | | | | | | | Total | | | |
|-------------------|----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | | | | |
| Wheat | 20,640 | 188 | 433,440 | 227,040 | 247,680 | 454,080 | 1,217,760 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 227,040 | 846,240 | 227,040 | 3,880,320 |
| Broad Bean | 4,090 | 183 | 44,990 | 44,990 | 44,990 | 306,750 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49,080 | 212,680 | 44,990 | 746,470 |
| Sugarbeet | 5,210 | 269 | 78,150 | 130,250 | 197,980 | 197,980 | 197,980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260,500 | 260,500 | 78,150 | 1,401,490 |
| Long Beans | 7,780 | 257 | 264,520 | 264,520 | 256,740 | 256,740 | 256,740 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 318,980 | 116,700 | 264,520 | 1,999,460 |
| Short Beans | 13,690 | 166 | 410,700 | 479,150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 219,040 | 547,600 | 397,010 | 2,272,340 |
| Winter Vegetables | 5,390 | 317 | 80,850 | 80,850 | 485,880 | 468,930 | 97,020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134,750 | 188,650 | 161,700 | 1,708,630 |
| Maize | 17,900 | 230 | 0 | 0 | 0 | 537,000 | 537,000 | 537,000 | 537,000 | 537,000 | 537,000 | 537,000 | 537,000 | 537,000 | 984,500 | 0 | 0 | 4,117,000 |
| Cotton | 11,430 | 547 | 0 | 0 | 457,200 | 800,100 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 457,200 | 914,400 | 0 | 0 | 6,292,210 |
| Rice | 13,100 | 287 | 0 | 0 | 0 | 0 | 0 | 1,074,200 | 393,000 | 393,000 | 393,000 | 393,000 | 393,000 | 393,000 | 1,703,000 | 0 | 0 | 3,759,700 |
| Water Melon seed | 8,570 | 186 | 0 | 0 | 0 | 582,760 | 231,390 | 428,500 | 119,860 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,594,020 |
| Summer Vegetables | 5,800 | 530 | 0 | 0 | 0 | 522,000 | 342,200 | 531,000 | 531,000 | 531,000 | 531,000 | 531,000 | 531,000 | 531,000 | 551,000 | 0 | 0 | 3,074,000 |
| Citrus | 110 | 383 | 1,100 | 1,100 | 1,100 | 7,700 | 7,700 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 42,130 |
| Sub-Total | 113,710 | | 1,313,250 | 1,222,900 | 1,701,570 | 3,075,040 | 3,524,190 | 2,643,090 | 2,367,800 | 2,808,030 | 3,175,150 | 5,971,700 | 1,869,640 | 1,174,510 | 1,174,510 | 1,174,510 | 1,174,510 | 30,849,970 |
| Livestock | | | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 148,758 | 1,795,095 |
| Grand Total | | | 1,462,008 | 1,371,658 | 1,850,328 | 3,223,798 | 3,673,548 | 2,791,848 | 2,516,558 | 2,956,788 | 3,323,908 | 6,120,458 | 2,009,398 | 1,323,268 | 1,323,268 | 1,323,268 | 1,323,268 | 32,635,065 |

Notes: Labor for Livestock is No. of Farm Households*hr.

Source : Study team

Table N.1.19 Estimate of Standard Conversion Factor

| Item | Year | | | Average |
|---|------------|------------|------------|------------|
| | 1993 | 1994 | 1995 | |
| (1) All Imports | 27,550,409 | 32,460,649 | 39,890,830 | 44,217,817 |
| (2) All Exports | 10,595,830 | 11,924,678 | 11,953,906 | 12,277,148 |
| (3) Import Tax | 5,202,304 | 6,145,575 | 7,489,443 | 8,209,563 |
| (4) Export Tax | 514 | 422 | 493 | 419 |
| (5) Subsidy | - | - | - | - |
| (6) (1)-(2) | 38,146,239 | 44,385,327 | 51,844,836 | 56,495,005 |
| (7) (1)-(2)-(3)-(4)-(5) | 43,348,059 | 50,530,480 | 59,332,786 | 64,704,149 |
| (8) S.C.F.(7) | 0.88 | 0.88 | 0.87 | 0.87 |
| Source: Exports and Imports: Statistical Year Book 1998 | | | | |
| Tax: Estimated from Customs Tariff (Harmonized) | | | | |

Table N.1.21 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Wheat

| Item | Unit | Price | W/O Yield & Input per Fed. | With Project Situation | | | Full benefit |
|--|------------|--------|----------------------------|------------------------|-----------|-----------|--------------|
| | | | | Yr.1 L.E. | Yr.2 L.E. | Yr.3 L.E. | |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ardab | 100.00 | 16.53 | 1712.00 | 1811.00 | 1851.00 | 1851.00 |
| Second product | canal/load | 25.00 | 13.22 | 342.25 | 362.00 | 370.00 | 370.00 |
| Green fodder | per fed. | 0.00 | 0.00 | | | | |
| TOTAL GROSS INCOME | | | 1983.50 | 2054.25 | 2173.00 | 2221 | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 2.50 | 62.50 | 62.50 | 62.50 | 62.50 |
| Pumps&Irrigation) | hour | 3.20 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 1.10 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 |
| Fertilizer: | | | | | | | |
| N | kg | 1.30 | 76.00 | 97.50 | 97.50 | 97.50 | 97.50 |
| P205 | kg | 2.10 | 15.00 | 31.50 | 31.50 | 31.50 | 31.50 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure: | m3 | 2.40 | 15.00 | 36.00 | 36.00 | 36.00 | 36.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 37.50 | 26.25 | 26.25 | 26.25 | 26.25 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 1.33 | 71.00 | 94.43 | 94.43 | 94.43 | 94.43 |
| Hired labor | man/hour | 1.33 | 31.00 | 41.23 | 41.23 | 41.23 | 41.23 |
| Sub-Total | | | 519.41 | 453.41 | 453.41 | 453.41 | 453.41 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 1.33 | 54.00 | 71.82 | 76.99 | 78.68 | 80.42 |
| Hired labor | man/hour | 1.33 | 23.00 | 30.59 | 31.68 | 33.51 | 34.25 |
| Machine threshing | hour | 12.00 | 3.00 | 36.00 | 37.28 | 39.44 | 40.31 |
| Machine winnowing | hour | 10.00 | 2.60 | 26.00 | 27.87 | 28.49 | 29.11 |
| Animal transportation | donk/hour | 0.70 | 17.90 | 12.53 | 12.98 | 13.73 | 14.03 |
| Sub-Total | | | 176.94 | 182.25 | 189.67 | 193.85 | 198.12 |
| Other material | 1% | | 104.46 | 106.46 | 106.36 | 106.99 | 107.63 |
| 3-Grand Total Costs | | | 800.80 | 744.06 | 751.44 | 756.25 | 761.16 |
| | | | (634.55) | (575.25) | (580.02) | (583.14) | (586.31) |
| C-NET RETURN(L.E. per Fed.) | | | 1182.70 | 1310.19 | 1374.81 | 1416.75 | 1459.84 |
| D-NET RETURN RATIO(%) | | | 59.5 | 63.8 | 64.7 | 65.2 | 65.7 |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | 127.89 | 192.11 | 234.05 | 277.14 | |
| F-NET INCOME(L.E. per Fed.) | | | 1348.95 | 1479 | 1546.23 | 1589.85 | 1634.69 |

Note: () = production cost without family labor cost

Table N.1.20 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Wheat

| Item | Unit | Price | W/O Yield & Input per Fed. | With Project Situation | | | Full benefit |
|--|------------|-------|----------------------------|------------------------|-----------|-----------|--------------|
| | | | | Yr.1 L.E. | Yr.2 L.E. | Yr.3 L.E. | |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ardab | 88.00 | 16.53 | 1454.64 | 1539.36 | 1593.68 | 1628.88 |
| Second product | canal/load | 22.00 | 13.22 | 290.84 | 311.74 | 318.56 | 325.60 |
| Green fodder | per fed. | 0.00 | 0.00 | | | | |
| TOTAL GROSS INCOME | | | 1745.48 | 1807.74 | 1871.1 | 1912.24 | 1954.48 |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 2.50 | 95.00 | 95.00 | 95.00 | 95.00 |
| Pumps&Irrigation) | hour | 3.33 | 20.00 | 66.60 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 0.97 | 60.00 | 58.20 | 58.20 | 58.20 | 58.20 |
| Fertilizer: | | | | | | | |
| N | kg | 1.67 | 76.00 | 125.25 | 125.25 | 125.25 | 125.25 |
| P205 | kg | 1.51 | 15.00 | 22.65 | 22.65 | 22.65 | 22.65 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure: | m3 | 2.11 | 15.00 | 31.65 | 31.65 | 31.65 | 31.65 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.62 | 37.50 | 23.25 | 23.25 | 23.25 | 23.25 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 0.79 | 71.00 | 58.93 | 58.92 | 58.93 | 58.93 |
| Hired labor | man/hour | 0.79 | 31.00 | 25.73 | 25.73 | 25.73 | 25.73 |
| Sub-Total | | | 503.18 | 440.66 | 440.66 | 440.66 | 440.66 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 0.79 | 54.00 | 46.42 | 48.05 | 49.10 | 50.19 |
| Hired labor | man/hour | 0.79 | 23.00 | 19.77 | 20.46 | 20.91 | 21.38 |
| Machine threshing | hour | 13.00 | 3.00 | 40.39 | 41.81 | 42.73 | 43.67 |
| Machine winnowing | hour | 11.00 | 2.60 | 29.62 | 30.66 | 31.33 | 32.03 |
| Animal transportation | donk/hour | 0.62 | 17.90 | 11.49 | 11.90 | 12.16 | 12.43 |
| Sub-Total | | | 139.53 | 147.69 | 152.88 | 156.23 | 159.7 |
| Other material | 1% | | 64.00 | 65.01 | 66.01 | 66.35 | 66.70 |
| 3-Grand Total Costs | | | 706.71 | 653.85 | 659.55 | 663.24 | 667.06 |
| | | | (607.96) | (549.50) | (552.57) | (555.21) | (557.94) |
| C-NET RETURN(L.E. per Fed.) | | | 1038.77 | 1153.89 | 1211.55 | 1249 | 1287.42 |
| D-NET RETURN RATIO(%) | | | 59.5 | 63.8 | 64.8 | 65.3 | 65.9 |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | 115.12 | 172.78 | 210.23 | 248.65 | |
| F-NET INCOME(L.E. per Fed.) | | | 1137.52 | 1259.24 | 1314.53 | 1357.03 | 1396.54 |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 LE

Table N.1.22 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Broad Bean

| Item | Unit | Unit Price | W/O Yield/W/O P. Sit & Input per Fed. | With Project Situation | | | Full benefit | |
|---|------------|------------|--|------------------------|----------|----------|--------------|----------|
| | | | | Value per Fed/ann | | | | |
| | | | | Yr.1 | Yr.2 | Yr.3 | | |
| L.F. | L.F. | L.F. | L.F. | L.F. | | | | |
| A-INCOME: | | | | | | | | |
| Milk product(Crabs) | arab | 255.00 | 8.48 | 2162.40 | 2246.55 | 2330.70 | 2386.80 | 2442.90 |
| Second product | canal/road | 13.20 | 6.36 | 85.95 | 87.25 | 90.55 | 92.66 | 94.91 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | | | | |
| TOTAL GROSS INCOME | | | | | | | | |
| | | | 2246.55 | 2333.80 | 2421.25 | 2479.46 | 2537.81 | |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 |
| Pumpset(Irrigation) | hour | 3.33 | 15.00 | 49.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 1.94 | 60.00 | 116.40 | 116.40 | 116.40 | 116.40 | 116.40 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.67 | 15.00 | 25.05 | 25.05 | 25.05 | 25.05 | 25.05 |
| P2O5 | kg | 1.51 | 15.00 | 22.65 | 22.65 | 22.65 | 22.65 | 22.65 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other: | | | | | | | | |
| Manure: | m3 | 2.11 | 15.00 | 31.65 | 31.65 | 31.65 | 31.65 | 31.65 |
| Insecticides | liter | 37.40 | 1.00 | 37.40 | 37.40 | 37.40 | 37.40 | 37.40 |
| Fungicides | liter | 35.20 | 2.00 | 70.40 | 70.40 | 70.40 | 70.40 | 70.40 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 6.00 | 16.86 | 16.86 | 16.86 | 16.86 | 16.86 |
| Animal work: | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.62 | 37.50 | 23.25 | 23.25 | 23.25 | 23.25 | 23.25 |
| Labor cost: | | | | | | | | |
| Family labor | man/hour | 0.79 | 76.00 | 60.04 | 63.08 | 63.08 | 63.08 | 63.08 |
| Hired labor | man/hour | 0.79 | 32.00 | 25.28 | 26.56 | 26.56 | 26.56 | 26.56 |
| Sub-Total | | | 592.93 | 547.3 | 547.3 | 547.3 | 547.3 | 547.3 |
| 2-Yield Dependent Costs | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 0.79 | 36.34 | 39.67 | 41.15 | 42.14 | 43.13 | 43.13 |
| Hired labor | man/hour | 0.79 | 15.80 | 17.25 | 17.89 | 18.32 | 18.75 | 18.75 |
| Machine threshing | hour | 13.00 | 2.20 | 28.60 | 29.71 | 30.83 | 31.57 | 32.31 |
| Machine winnowing | hour | 11.00 | 2.00 | 22.00 | 22.86 | 23.71 | 24.28 | 24.85 |
| Animal transportation | donk/hour | 0.62 | 14.20 | 8.80 | 9.15 | 9.49 | 9.72 | 9.95 |
| Sub-Total | | | 111.54 | 118.64 | 123.07 | 126.03 | 128.99 | 131.94 |
| Other material | 10% | | 70.00 | 71.59 | 72.03 | 72.33 | 72.62 | 72.91 |
| 3-Grand Total Costs | | | | | | | | |
| | | | 774.47 | 737.53 | 742.4 | 745.66 | 748.91 | 752.16 |
| C-NET RETURN(L.E. per Fed.) | | | | | | | | |
| | | | (578.09) | (634.78) | (638.17) | (640.44) | (642.70) | (644.96) |
| D-NET RETURN RATIO(%) | | | | | | | | |
| | | | 147.148 | 1596.27 | 1678.85 | 1733.8 | 1788.9 | 1844.0 |
| E-NET RETURN RATIO(%) | | | | | | | | |
| | | | 65.5 | 68.4 | 69.3 | 69.9 | 70.5 | 71.1 |
| F-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | |
| | | | 1568.26 | 1699.02 | 1783.08 | 1839.02 | 1895.11 | 1951.20 |
| G-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | |
| | | | 1568.26 | 1699.02 | 1783.08 | 1839.02 | 1895.11 | 1951.20 |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 LE

Table N.1.23 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Eroded Bean

| Item | Unit | Unit Price | W/O Yield/W/O P. Sit & Input per Fed. | With Project Situation | | | Full benefit | |
|---|------------|------------|--|------------------------|----------|----------|--------------|----------|
| | | | | Value per Fed/ann | | | | |
| | | | | Yr.1 | Yr.2 | Yr.3 | | |
| L.F. | L.F. | L.F. | L.F. | L.F. | | | | |
| A-INCOME: | | | | | | | | |
| Milk product(Crabs) | arab | 190.00 | 8.48 | 1611.20 | 1673.90 | 1736.60 | 1778.40 | 1820.20 |
| Second product | canal/road | 15.00 | 6.36 | 96.40 | 99.15 | 102.90 | 106.50 | 107.85 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | | | | |
| TOTAL GROSS INCOME | | | | | | | | |
| | | | 1706.60 | 1773.05 | 1839.5 | 1893.70 | 1928.05 | |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 |
| Pumpset(Irrigation) | hour | 3.20 | 15.00 | 48.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 2.20 | 60.00 | 132.00 | 132.00 | 132.00 | 132.00 | 132.00 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.30 | 15.00 | 19.50 | 19.50 | 19.50 | 19.50 | 19.50 |
| P2O5 | kg | 2.10 | 15.00 | 31.50 | 31.50 | 31.50 | 31.50 | 31.50 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other: | | | | | | | | |
| Manure: | m3 | 2.40 | 15.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 |
| Insecticides | liter | 42.50 | 1.00 | 42.50 | 42.50 | 42.50 | 42.50 | 42.50 |
| Fungicides | liter | 40.00 | 2.00 | 80.00 | 80.00 | 80.00 | 80.00 | 80.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 6.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| Animal work: | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 37.50 | 26.25 | 26.25 | 26.25 | 26.25 | 26.25 |
| Labor cost: | | | | | | | | |
| Family labor | man/hour | 1.33 | 76.00 | 101.08 | 101.08 | 101.08 | 101.08 | 101.08 |
| Hired labor | man/hour | 1.33 | 32.00 | 42.56 | 42.56 | 42.56 | 42.56 | 42.56 |
| Sub-Total | | | 646.39 | 598.39 | 598.39 | 598.39 | 598.39 | 598.39 |
| 2-Yield Dependent Costs | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 1.33 | 46.00 | 61.18 | 63.56 | 65.94 | 67.53 | 69.12 |
| Hired labor | man/hour | 1.33 | 20.00 | 26.60 | 27.64 | 28.67 | 29.36 | 30.05 |
| Machine threshing | hour | 12.00 | 2.20 | 26.40 | 27.43 | 28.45 | 29.14 | 29.82 |
| Machine winnowing | hour | 10.00 | 2.00 | 20.00 | 20.78 | 21.56 | 22.08 | 22.59 |
| Animal transportation | donk/hour | 0.70 | 14.20 | 9.94 | 10.33 | 10.71 | 10.97 | 11.23 |
| Sub-Total | | | 144.12 | 149.74 | 155.33 | 159.08 | 162.81 | 166.54 |
| Other material | 15% | | 118.58 | 119.42 | 120.26 | 121.02 | 121.38 | 121.74 |
| 3-Grand Total Costs | | | | | | | | |
| | | | 909.09 | 867.55 | 873.98 | 878.29 | 882.58 | 886.87 |
| C-NET RETURN(L.E. per Fed.) | | | | | | | | |
| | | | (746.83) | (702.91) | (706.96) | (709.68) | (712.38) | (715.08) |
| D-NET RETURN RATIO(%) | | | | | | | | |
| | | | 797.51 | 905.5 | 965.52 | 1005.41 | 1045.47 | 1085.53 |
| E-NET RETURN RATIO(%) | | | | | | | | |
| | | | 46.7 | 51.1 | 52.5 | 53.4 | 54.2 | 54.9 |
| F-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | |
| | | | 959.77 | 1070.14 | 1132.54 | 1174.02 | 1215.67 | 1257.32 |
| G-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | |
| | | | 959.77 | 1070.14 | 1132.54 | 1174.02 | 1215.67 | 1257.32 |

Note: () = production cost without family labor cost

Table N.1.24 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Sugarbeet

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | W/O Yield/W/O P.S. Value/Feed | | | With Project Situation | | | Full benefit |
|--|-----------|------------|----------------------------|-------------------------------|-----------|-----------|------------------------|-----------|-----------|--------------|
| | | | | Yr.1 L.E. | Yr.2 L.E. | Yr.3 L.E. | Yr.1 L.E. | Yr.2 L.E. | Yr.3 L.E. | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grauh) | ton | 126.00 | 18.85 | 2372.58 | 2458.26 | 2543.94 | 2600.64 | 2657.54 | 2657.54 | |
| Second product | ton | 3.87 | 7.53 | 29.14 | 30.19 | 31.23 | 31.93 | 32.62 | 32.62 | |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | | | | | | |
| TOTAL GROSS INCOME | | | | | | | | | | |
| | | | | 2401.72 | 2488.45 | 2575.17 | 2632.57 | 2689.96 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | |
| Pumpset(Irrigation) | hour | 3.33 | 15.00 | 49.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 17.60 | 5.00 | 88.00 | 88.00 | 88.00 | 88.00 | 88.00 | 88.00 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.87 | 70.00 | 116.90 | 116.90 | 116.90 | 116.90 | 116.90 | 116.90 | |
| P205 | kg | 1.51 | 22.00 | 33.22 | 33.22 | 33.22 | 33.22 | 33.22 | 33.22 | |
| K | kg | 1.16 | 38.00 | 44.08 | 44.08 | 44.08 | 44.08 | 44.08 | 44.08 | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Insecticides | liter | 59.40 | 1.00 | 59.40 | 59.40 | 59.40 | 59.40 | 59.40 | 59.40 | |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Herbicides | liter | 22.00 | 1.00 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | |
| Sprayer | hour | 2.81 | 4.00 | 11.24 | 11.24 | 11.24 | 11.24 | 11.24 | 11.24 | |
| Animal work: | | | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Manure transportation | donk/hour | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 118.00 | 93.22 | 97.94 | 97.94 | 97.94 | 97.94 | 97.94 | |
| Hired labor | man/hour | 0.79 | 50.00 | 39.50 | 41.50 | 41.50 | 41.50 | 41.50 | 41.50 | |
| Sub-Total | | | 0.00 | 671.51 | 628.28 | 628.28 | 628.28 | 628.28 | 628.28 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 63.00 | 49.77 | 54.18 | 56.07 | 57.32 | 58.57 | 58.57 | |
| Hired labor | man/hour | 0.79 | 27.00 | 21.33 | 23.22 | 24.03 | 24.56 | 25.10 | 25.10 | |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal transportation | donk/hour | 0.62 | 37.70 | 23.37 | 24.22 | 25.06 | 25.62 | 26.18 | 26.18 | |
| Sub-Total | | | 0.00 | 94.47 | 101.62 | 105.16 | 107.5 | 109.85 | 109.85 | |
| Other material | 15% | | | 77.00 | 77.99 | 78.34 | 78.57 | 78.81 | 78.81 | |
| 3-Grand Total Costs | | | | | | | | | | |
| | | | | 842.98 | 807.89 | 811.78 | 814.35 | 816.94 | 816.94 | |
| C-NET RETURN(L.E. per Fed.) | | | | | | | | | | |
| | | | | (699.99) | (656.77) | (657.77) | (659.09) | (660.43) | (660.43) | |
| D-NET RETURN RATIO | | | | | | | | | | |
| | | | | 1.58874 | 1.68056 | 1.74339 | 1.81822 | 1.87302 | 1.87302 | |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | | | |
| | | | | 64.9 | 67.5 | 68.5 | 69.1 | 69.6 | 69.6 | |
| F-NET INCOME(L.E. per Fed.) | | | | | | | | | | |
| | | | | 1701.73 | 1832.68 | 1917.4 | 1973.48 | 2029.53 | 2029.53 | |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.63 LE

Table N.1.25 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Sugarbeet

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | W/O Yield/W/O P.S. Value/Feed | | | With Project Situation | | | Full benefit |
|--|-----------|------------|----------------------------|-------------------------------|-----------|-----------|------------------------|-----------|-----------|--------------|
| | | | | Yr.1 L.E. | Yr.2 L.E. | Yr.3 L.E. | Yr.1 L.E. | Yr.2 L.E. | Yr.3 L.E. | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grauh) | ton | 100.00 | 18.83 | 1883.00 | 1951.00 | 2019.00 | 2064.00 | 2109.00 | 2109.00 | |
| Second product | ton | 4.40 | 7.53 | 33.12 | 34.32 | 35.51 | 36.30 | 37.09 | 37.09 | |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | | | | | | |
| TOTAL GROSS INCOME | | | | | | | | | | |
| | | | | 1916.13 | 1985.32 | 2054.51 | 2100.3 | 2146.09 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 | |
| Pumpset(Irrigation) | hour | 3.20 | 15.00 | 48.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 20.00 | 5.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.30 | 70.00 | 91.00 | 91.00 | 91.00 | 91.00 | 91.00 | 91.00 | |
| P205 | kg | 2.10 | 22.00 | 46.20 | 46.20 | 46.20 | 46.20 | 46.20 | 46.20 | |
| K | kg | 0.90 | 36.00 | 34.20 | 34.20 | 34.20 | 34.20 | 34.20 | 34.20 | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Insecticides | liter | 67.50 | 1.00 | 67.50 | 67.50 | 67.50 | 67.50 | 67.50 | 67.50 | |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Herbicides | liter | 25.00 | 1.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | |
| Sprayer | hour | 2.00 | 4.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | |
| Animal work: | | | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Manure transportation | donk/hour | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 118.00 | 156.94 | 156.94 | 156.94 | 156.94 | 156.94 | 156.94 | |
| Hired labor | man/hour | 1.33 | 50.00 | 66.50 | 66.50 | 66.50 | 66.50 | 66.50 | 66.50 | |
| Sub-Total | | | 0.00 | 718.34 | 670.34 | 670.34 | 670.34 | 670.34 | 670.34 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 63.00 | 83.79 | 86.82 | 89.84 | 91.84 | 93.85 | 93.85 | |
| Hired labor | man/hour | 1.33 | 27.00 | 35.91 | 37.21 | 38.50 | 39.36 | 40.22 | 40.22 | |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal transportation | donk/hour | 0.70 | 37.70 | 26.39 | 27.34 | 28.30 | 28.93 | 29.56 | 29.56 | |
| Sub-Total | | | 0.00 | 146.09 | 151.37 | 156.64 | 160.13 | 163.63 | 163.63 | |
| Other material | 15% | | | 129.66 | 130.46 | 131.25 | 131.77 | 132.30 | 132.30 | |
| 3-Grand Total Costs | | | | | | | | | | |
| | | | | 994.09 | 952.17 | 958.23 | 962.24 | 966.27 | 966.27 | |
| C-NET RETURN(L.E. per Fed.) | | | | | | | | | | |
| | | | | (753.36) | (708.41) | (711.45) | (712.46) | (715.48) | (715.48) | |
| D-NET RETURN RATIO | | | | | | | | | | |
| | | | | 927.04 | 1033.15 | 1046.28 | 1138.06 | 1179.82 | 1179.82 | |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | | | |
| | | | | 48.1 | 52.0 | 53.4 | 54.2 | 55.0 | 55.0 | |
| F-NET INCOME(L.E. per Fed.) | | | | | | | | | | |
| | | | | 1167.77 | 1276.91 | 1343.86 | 1386.84 | 1430.61 | 1430.61 | |

Note: () = production cost without family labor cost

Table N.1.26 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Long Berseem

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | With Project Situation | | | Full benefit |
|---|------------|------------|----------------------------|------------------------|----------|----------|--------------|
| | | | | Yr.1 | Yr.2 | Yr.3 | |
| | | L.E. | Value/fed | Value per Fed/dan | L.E. | L.E. | L.E. |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ton | 55.00 | 1213.30 | 1260.60 | 1307.90 | 1339.80 | 1371.15 |
| Second product | camel/load | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 95.00 | 95.00 | 95.00 | 95.00 | 95.00 |
| Pumps(trirrigation) | hour | 3.33 | 83.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 2.73 | 68.25 | 68.25 | 68.25 | 68.25 | 68.25 |
| Fertilizer: | | | | | | | |
| N | kg | 1.67 | 33.40 | 33.40 | 33.40 | 33.40 | 33.40 |
| P205 | kg | 1.51 | 45.30 | 45.30 | 45.30 | 45.30 | 45.30 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure | m3 | 2.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 0.79 | 39.50 | 41.50 | 41.50 | 41.50 | 41.50 |
| Hired labor | man/hour | 0.79 | 17.38 | 18.26 | 18.26 | 18.26 | 18.26 |
| Sub-Total | | 0.83 | 362.08 | 301.71 | 301.71 | 301.71 | 301.71 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 0.79 | 90.86 | 99.17 | 102.89 | 105.40 | 107.87 |
| Hired labor | man/hour | 0.79 | 38.71 | 42.26 | 43.84 | 44.91 | 45.96 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.62 | 22.30 | 14.37 | 14.90 | 15.27 | 15.62 |
| Sub-Total | | | 143.39 | 155.8 | 161.63 | 165.58 | 169.45 |
| Other material | 10% | | 53.00 | 54.08 | 54.66 | 55.05 | 55.44 |
| 3-Grand Total Costs | | | | | | | |
| | | | 578.47 | 511.59 | 518 | 522.34 | 526.6 |
| | | | (448.12) | (370.92) | (373.61) | (375.44) | (377.23) |
| C-NET RETURN(L.E. per Fed.) | | | 634.83 | 749.01 | 789.9 | 817.46 | 844.55 |
| D-NET RETURN RATIO(%) | | | 52.3 | 59.4 | 60.4 | 61.0 | 61.6 |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | 765.18 | 889.68 | 934.79 | 984.36 | 993.92 |
| F-NET INCOME(L.E. per Fed.) | | | 852.91 | 981.71 | 1030.51 | 1063.43 | 1096.77 |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 L.E.

Table N.1.27 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Long Berseem

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | With Project Situation | | | Full benefit |
|---|------------|------------|----------------------------|------------------------|----------|----------|--------------|
| | | | | Yr.1 | Yr.2 | Yr.3 | |
| | | L.E. | Value/fed | Value per Fed/dan | L.E. | L.E. | L.E. |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ton | 62.00 | 22.06 | 1367.72 | 1421.04 | 1474.36 | 1510.32 |
| Second product | camel/load | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 2.50 | 62.50 | 62.50 | 62.50 | 62.50 |
| Pumps(trirrigation) | hour | 3.20 | 25.00 | 80.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 3.10 | 25.00 | 77.50 | 77.50 | 77.50 | 77.50 |
| Fertilizer: | | | | | | | |
| N | kg | 1.30 | 20.00 | 26.00 | 26.00 | 26.00 | 26.00 |
| P205 | kg | 2.10 | 30.00 | 63.00 | 63.00 | 63.00 | 63.00 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure | m3 | 2.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 1.33 | 50.00 | 66.50 | 66.50 | 66.50 | 66.50 |
| Hired labor | man/hour | 1.33 | 22.00 | 29.26 | 29.26 | 29.26 | 29.26 |
| Sub-Total | | 0.00 | 0.00 | 404.76 | 324.76 | 324.76 | 324.76 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 1.33 | 115.00 | 152.95 | 156.91 | 164.88 | 168.90 |
| Hired labor | man/hour | 1.33 | 49.00 | 65.17 | 67.71 | 70.25 | 71.96 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.70 | 22.30 | 15.61 | 16.22 | 16.83 | 17.24 |
| Sub-Total | | | 233.73 | 242.84 | 242.84 | 251.96 | 264.14 |
| Other material | 15% | | 95.77 | 97.14 | 98.51 | 99.43 | 100.34 |
| 3-Grand Total Costs | | | | | | | |
| | | | 734.26 | 664.74 | 675.23 | 682.29 | 689.24 |
| | | | (514.81) | (439.33) | (443.85) | (446.89) | (449.89) |
| C-NET RETURN(L.E. per Fed.) | | | 633.46 | 756.3 | 799.13 | 828.03 | 856.62 |
| D-NET RETURN RATIO(%) | | | 46.3 | 53.2 | 54.2 | 54.8 | 55.4 |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | 122.14 | 195.87 | 194.57 | 222.84 | 222.84 |
| F-NET INCOME(L.E. per Fed.) | | | 852.91 | 981.71 | 1030.51 | 1063.43 | 1096.77 |

Note: () = production cost without family labor cost

Table N.1.28 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Short Berseem

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | W/O P.S. Value/fed | | With Project Situation | | Full benefit |
|--|---------------------|------------|----------------------------|--------------------|-----------|------------------------|-----------|--------------|
| | | | | Yr.1 L.F. | Yr.2 L.F. | Yr.1 L.F. | Yr.2 L.F. | |
| A-INCOME: | | | | | | | | |
| Main product(Crain) | ton | 55.00 | 14.69 | 807.95 | 827.20 | 847.00 | 859.65 | 872.85 |
| Second product | canal/haed per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Pumpsset(Irrigation) | hour | 3.33 | 12.00 | 39.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 2.73 | 25.00 | 68.25 | 68.25 | 68.25 | 68.25 | 68.25 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.67 | 10.00 | 16.70 | 16.70 | 16.70 | 16.70 | 16.70 |
| P205 | kg | 1.51 | 15.00 | 22.65 | 22.65 | 22.65 | 22.65 | 22.65 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | | |
| Manure: | m3 | 2.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Labor cost: | | | | | | | | |
| Family labor | man/hour | 0.79 | 34.00 | 26.86 | 28.22 | 28.22 | 28.22 | 28.22 |
| Hired labor | man/hour | 0.79 | 14.00 | 11.06 | 11.62 | 11.62 | 11.62 | 11.62 |
| Sub-Total | | | | 185.48 | 147.44 | 147.44 | 147.44 | 147.44 |
| 2-Yield Dependent Costs: | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 0.79 | 76.00 | 60.04 | 64.58 | 66.13 | 67.12 | 68.16 |
| Hired labor | man/hour | 0.79 | 33.00 | 26.07 | 28.04 | 28.71 | 29.14 | 29.59 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.62 | 14.80 | 9.18 | 9.39 | 9.62 | 9.76 | 9.91 |
| Sub-Total | | | | 95.29 | 102.01 | 104.46 | 106.02 | 107.65 |
| Other material | 10% | | 28.00 | 28.00 | 28.94 | 29.19 | 29.34 | 29.51 |
| 3-Grand Total Costs | | | | | | | | |
| | | | 308.77 | 278.39 | 281.09 | 282.8 | 284.6 | 284.6 |
| | | | (291.87) | (185.59) | (186.74) | (187.46) | (188.23) | |
| C-NET RETURN(L.E. per Fed.) | | | | | | | | |
| | | | 499.18 | 548.81 | 595.91 | 576.85 | 588.25 | |
| D-NET RETURN RATIO(N) | | | | | | | | |
| | | | 61.8 | 66.3 | 69.8 | 67.1 | 67.4 | |
| E-INCREMANTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | |
| | | | 586.08 | 641.61 | 680.26 | 672.19 | 684.82 | |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 L.E

Table N.1.29 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Short Berseem

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | W/O P.S. Value/fed | | With Project Situation | | Full benefit |
|--|---------------------|------------|----------------------------|--------------------|-----------|------------------------|-----------|--------------|
| | | | | Yr.1 L.F. | Yr.2 L.F. | Yr.1 L.F. | Yr.2 L.F. | |
| A-INCOME: | | | | | | | | |
| Main product(Crain) | ton | 62.00 | 14.69 | 910.78 | 932.48 | 954.80 | 969.06 | 983.94 |
| Second product | canal/haed per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Pumpsset(Irrigation) | hour | 3.20 | 12.00 | 38.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 3.10 | 25.00 | 77.50 | 77.50 | 77.50 | 77.50 | 77.50 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.30 | 10.00 | 13.00 | 13.00 | 13.00 | 13.00 | 13.00 |
| P205 | kg | 2.10 | 15.00 | 31.50 | 31.50 | 31.50 | 31.50 | 31.50 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | | |
| Manure: | m3 | 2.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Labor cost: | | | | | | | | |
| Family labor | man/hour | 1.33 | 34.00 | 45.22 | 45.22 | 45.22 | 45.22 | 45.22 |
| Hired labor | man/hour | 1.33 | 14.00 | 18.62 | 18.62 | 18.62 | 18.62 | 18.62 |
| Sub-Total | | | | 224.24 | 185.84 | 185.84 | 185.84 | 185.84 |
| 2-Yield Dependent Costs: | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 1.33 | 76.00 | 101.08 | 103.49 | 105.97 | 107.55 | 109.20 |
| Hired labor | man/hour | 1.33 | 33.00 | 43.89 | 44.94 | 46.01 | 46.70 | 47.42 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.70 | 14.80 | 10.36 | 10.61 | 10.86 | 11.02 | 11.19 |
| Sub-Total | | | | 158.33 | 159.04 | 162.84 | 166.27 | 167.81 |
| Other material | 15% | | 56.94 | 56.94 | 57.49 | 58.05 | 58.43 | 58.81 |
| 3-Grand Total Costs | | | | | | | | |
| | | | 436.51 | 402.37 | 406.74 | 409.54 | 412.46 | |
| | | | (290.27) | (253.66) | (256.77) | (259.04) | | |
| C-NET RETURN(L.E. per Fed.) | | | | | | | | |
| | | | 474.27 | 530.11 | 548.09 | 559.52 | 571.43 | |
| D-NET RETURN RATIO(N) | | | | | | | | |
| | | | 62.1 | 66.8 | 67.4 | 67.7 | 68.1 | |
| E-INCREMANTAL DIFFERENCE(L.E. per Fed.) | | | | | | | | |
| | | | 670.57 | 678.82 | 699.25 | 712.29 | 725.9 | |

Note: () = production cost without family labor cost

Table N.1.30 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Winter Vegetables (Onion)

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | W/O Yield/W.O.P.S.I. | | | With Project Situation | | | Full benefit |
|--|------------|------------|----------------------------|----------------------|-----------|-----------|------------------------|-------------------|-----------|--------------|
| | | | | Value/fed | Yr.1 L.F. | Yr.2 L.F. | Yr.3 L.F. | Value per Fed/dan | Yr.1 L.F. | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ton | 264.00 | 8.78 | 2317.92 | 2402.40 | 2484.24 | 2539.68 | 2595.12 | 2595.12 | |
| Second product | canal/load | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| TOTAL GROSS INCOME | | | | 2317.92 | 2402.40 | 2484.24 | 2539.68 | 2595.12 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.50 | 133.00 | 133.00 | 133.00 | 133.00 | 133.00 | 133.00 | |
| Pumpset(Irrigation) | hour | 3.33 | 15.00 | 49.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 3.08 | 1.30 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.67 | 80.00 | 133.60 | 133.60 | 133.60 | 133.60 | 133.60 | 133.60 | |
| P2O5 | kg | 1.51 | 50.00 | 75.50 | 75.50 | 75.50 | 75.50 | 75.50 | 75.50 | |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.11 | 30.00 | 63.30 | 63.30 | 63.30 | 63.30 | 63.30 | 63.30 | |
| Insecticides | liter | 35.20 | 1.50 | 52.80 | 52.80 | 52.80 | 52.80 | 52.80 | 52.80 | |
| Fungicides | liter | 17.60 | 3.00 | 52.80 | 52.80 | 52.80 | 52.80 | 52.80 | 52.80 | |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Sprayer | hour | 2.81 | 9.00 | 25.29 | 25.29 | 25.29 | 25.29 | 25.29 | 25.29 | |
| Animal work: | | | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Manure transportation | donk/hour | 0.62 | 75.00 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 80.00 | 63.20 | 66.40 | 66.40 | 66.40 | 66.40 | 66.40 | |
| Hired labor | man/hour | 0.79 | 34.00 | 26.86 | 28.22 | 28.22 | 28.22 | 28.22 | 28.22 | |
| Sub-Total | | | | 726.80 | 681.41 | 681.41 | 681.41 | 681.41 | 681.41 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 127.00 | 100.33 | 109.25 | 112.97 | 115.49 | 118.02 | 118.02 | |
| Hired labor | man/hour | 0.79 | 54.00 | 42.66 | 46.45 | 48.04 | 49.11 | 50.18 | 50.18 | |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal transportation | donk/hour | 0.62 | 49.20 | 30.50 | 31.62 | 32.69 | 33.42 | 34.15 | 34.15 | |
| Sub-Total | | | | 173.49 | 187.32 | 193.7 | 198.02 | 202.35 | 202.35 | |
| Other material | 10% | | | 90.00 | 91.87 | 92.51 | 92.94 | 93.37 | 93.37 | |
| 3-Grand Total Costs | | | | 990.29 | 960.6 | 967.62 | 972.37 | 977.13 | 977.13 | |
| C-NET RETURN(L.E. per Fed.) | | | | (676.76) | (784.95) | (785.25) | (790.48) | (792.71) | (792.71) | |
| D-NET RETURN RATIO(%) | | | | 1327.63 | 1441.8 | 1516.62 | 1567.31 | 1617.94 | 1617.94 | |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | 57.3 | 60.0 | 61.0 | 61.7 | 62.3 | 62.3 | |
| F-NET INCOME(L.E. per Fed.) | | | | 1491.16 | 1617.45 | 1695.99 | 1749.2 | 1802.41 | 1802.41 | |

Note: () = production cost without family labor cost.
Shadow price of labor wage with project is 0.83 LE

Table N.1.31 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Winter Vegetables (Onion)

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | W/O Yield/W.O.P.S.I. | | | With Project Situation | | | Full benefit |
|--|------------|------------|----------------------------|----------------------|-----------|-----------|------------------------|-------------------|-----------|--------------|
| | | | | Value/fed | Yr.1 L.F. | Yr.2 L.F. | Yr.3 L.F. | Value per Fed/dan | Yr.1 L.F. | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ton | 260.00 | 8.78 | 2282.80 | 2366.00 | 2446.60 | 2501.20 | 2555.80 | 2555.80 | |
| Second product | canal/load | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| TOTAL GROSS INCOME | | | | 2282.80 | 2366.00 | 2446.6 | 2501.2 | 2555.8 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.50 | 87.50 | 87.50 | 87.50 | 87.50 | 87.50 | 87.50 | |
| Pumpset(Irrigation) | hour | 3.20 | 15.00 | 48.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 3.50 | 1.30 | 4.55 | 4.55 | 4.55 | 4.55 | 4.55 | 4.55 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.30 | 80.00 | 104.00 | 104.00 | 104.00 | 104.00 | 104.00 | 104.00 | |
| P2O5 | kg | 2.10 | 50.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.40 | 30.00 | 72.00 | 72.00 | 72.00 | 72.00 | 72.00 | 72.00 | |
| Insecticides | liter | 40.00 | 1.50 | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 | |
| Fungicides | liter | 20.00 | 3.00 | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 | |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Sprayer | hour | 2.00 | 9.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | |
| Animal work: | | | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Manure transportation | donk/hour | 0.70 | 75.00 | 52.50 | 52.50 | 52.50 | 52.50 | 52.50 | 52.50 | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 80.00 | 106.40 | 106.40 | 106.40 | 106.40 | 106.40 | 106.40 | |
| Hired labor | man/hour | 1.33 | 34.00 | 45.22 | 45.22 | 45.22 | 45.22 | 45.22 | 45.22 | |
| Sub-Total | | | | 763.17 | 715.17 | 715.17 | 715.17 | 715.17 | 715.17 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 127.00 | 168.91 | 175.07 | 181.03 | 186.07 | 189.11 | 189.11 | |
| Hired labor | man/hour | 1.33 | 54.00 | 71.82 | 74.44 | 76.97 | 78.69 | 80.41 | 80.41 | |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal transportation | donk/hour | 0.70 | 49.20 | 34.44 | 36.70 | 36.91 | 37.73 | 38.56 | 38.56 | |
| Sub-Total | | | | 275.17 | 285.21 | 294.91 | 301.49 | 308.08 | 308.08 | |
| Other material | 15% | | | 155.75 | 157.26 | 158.71 | 159.70 | 160.69 | 160.69 | |
| 3-Grand Total Costs | | | | 1194.09 | 1157.64 | 1168.79 | 1176.36 | 1183.94 | 1183.94 | |
| C-NET RETURN(L.E. per Fed.) | | | | (918.78) | (876.17) | (881.36) | (884.89) | (888.42) | (888.42) | |
| D-NET RETURN RATIO(%) | | | | 1088.71 | 1208.36 | 1277.81 | 1344.84 | 1371.86 | 1371.86 | |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | 47.7 | 51.1 | 52.7 | 53.0 | 53.7 | 53.7 | |
| F-NET INCOME(L.E. per Fed.) | | | | 1364.02 | 1489.83 | 1565.24 | 1619.31 | 1687.37 | 1687.37 | |

Note: () = production cost without family labor cost

Table N.1.32 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Cotton

| Item | Unit | Price L/E | W/O Yield/W/O P Sit & Input per Fed. | With Project Situation | | | Full benefit L/E | |
|---|------------|--------------|--|------------------------|-------------|-------------|------------------------|-----------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | | |
| A-INCOME: | | | | | | | | |
| Main product(Grain) | Kantar | 458.00 | 5.39 | 2468.52 | 2706.78 | 2940.36 | 3100.66 | 3258.38 |
| Second product | canal/load | 13.20 | 4.04 | 53.33 | 58.48 | 63.49 | 66.92 | 70.36 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | | |
| | | | | 2521.95 | 2765.26 | 3003.85 | 3167.58 | 3326.74 |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 |
| Pumpset(Irrigation) | hour | 3.33 | 32.00 | 106.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 1.50 | 40.00 | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.67 | 80.00 | 133.60 | 133.60 | 133.60 | 133.60 | 133.60 |
| P2O5 | kg | 1.51 | 45.00 | 67.95 | 67.95 | 67.95 | 67.95 | 67.95 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | | |
| Manure: | m3 | 2.11 | 20.00 | 42.20 | 42.20 | 42.20 | 42.20 | 42.20 |
| Insecticides | liter | 73.04 | 5.00 | 365.20 | 365.20 | 365.20 | 365.20 | 365.20 |
| Fungicides | liter | 54.12 | 1.00 | 54.12 | 54.12 | 54.12 | 54.12 | 54.12 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 12.00 | 33.72 | 33.72 | 33.72 | 33.72 | 33.72 |
| Animal work: | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cultivation | donk/hou | 0.62 | 50.00 | 31.00 | 31.00 | 31.00 | 31.00 | 31.00 |
| Manure transportation | man/hour | 0.79 | 161.00 | 127.19 | 133.63 | 133.63 | 133.63 | 133.63 |
| Labor cost: | man/hour | 0.79 | 69.00 | 54.51 | 57.27 | 57.27 | 57.27 | 57.27 |
| Family labor | man/hour | 0.79 | 161.00 | 127.19 | 133.63 | 133.63 | 133.63 | 133.63 |
| Hired labor | man/hour | 0.79 | 69.00 | 54.51 | 57.27 | 57.27 | 57.27 | 57.27 |
| Sub-Total | | | | 1190.05 | 1092.69 | 1092.69 | 1092.69 | 1092.69 |
| 2-Yield Dependent Costs: | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 0.79 | 165.00 | 132.72 | 152.89 | 166.09 | 175.14 | 183.94 |
| Hired labor | man/hour | 0.79 | 72.00 | 56.88 | 65.63 | 71.18 | 75.06 | 78.83 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hou | 0.62 | 7.00 | 4.34 | 4.76 | 5.17 | 5.45 | 5.72 |
| Sub-Total | | | | 193.94 | 223.18 | 242.44 | 255.66 | 268.49 |
| Other material | 10% | | | 138.00 | 142.24 | 144.17 | 145.49 | 146.77 |
| 3-Grand Total Costs | | | | | | | | |
| | | | | 1621.99 | 1458.11 | 1479.3 | 1493.83 | 1507.95 |
| | | | | (1762.08) | (1171.58) | (1179.58) | (1185.08) | (1190.38) |
| C-NET RETURN(L/E per Fed.) | | | | 959.96 | 1307.15 | 1524.56 | 1673.75 | 1818.79 |
| D-NET RETURN RATIO | | | | 39.7 | 47.3 | 50.8 | 52.8 | 54.7 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | | 307.19 | 524.99 | 673.79 | 818.83 | 978.83 |
| F-NET INCOME(L/E per Fed.) | | | | 1259.87 | 1593.67 | 1824.27 | 1982.62 | 2136.36 |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 L/E

Table N.1.33 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Cotton

| Item | Unit | Price L/E | W/O Yield/W/O P Sit & Input per Fed. | With Project Situation | | | Full benefit L/E | |
|---|------------|--------------|--|------------------------|-------------|-------------|------------------------|-----------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | | |
| A-INCOME: | | | | | | | | |
| Main product(Grain) | Kantar | 520.00 | 5.39 | 2802.80 | 3073.20 | 3338.40 | 3620.40 | 3697.20 |
| Second product | canal/load | 15.00 | 4.04 | 60.60 | 66.46 | 72.15 | 76.05 | 79.95 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | | |
| | | | | 2863.40 | 3139.65 | 3410.55 | 3696.45 | 3777.15 |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 |
| Pumpset(Irrigation) | hour | 3.20 | 32.00 | 102.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 1.70 | 40.00 | 68.00 | 68.00 | 68.00 | 68.00 | 68.00 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.30 | 80.00 | 104.00 | 104.00 | 104.00 | 104.00 | 104.00 |
| P2O5 | kg | 2.10 | 45.00 | 94.50 | 94.50 | 94.50 | 94.50 | 94.50 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | | |
| Manure: | m3 | 2.40 | 20.00 | 48.00 | 48.00 | 48.00 | 48.00 | 48.00 |
| Insecticides | liter | 83.00 | 5.00 | 415.00 | 415.00 | 415.00 | 415.00 | 415.00 |
| Fungicides | liter | 61.50 | 1.00 | 61.50 | 61.50 | 61.50 | 61.50 | 61.50 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 12.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| Animal work: | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cultivation | donk/hou | 0.70 | 50.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 |
| Manure transportation | man/hour | 1.33 | 161.00 | 214.13 | 214.13 | 214.13 | 214.13 | 214.13 |
| Labor cost: | man/hour | 1.33 | 69.00 | 91.77 | 91.77 | 91.77 | 91.77 | 91.77 |
| Family labor | man/hour | 1.33 | 161.00 | 214.13 | 214.13 | 214.13 | 214.13 | 214.13 |
| Hired labor | man/hour | 1.33 | 69.00 | 91.77 | 91.77 | 91.77 | 91.77 | 91.77 |
| Sub-Total | | | | 1333.30 | 1230.9 | 1230.9 | 1230.9 | 1230.9 |
| 2-Yield Dependent Costs: | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 1.33 | 168.00 | 223.44 | 245.00 | 266.14 | 280.65 | 294.74 |
| Hired labor | man/hour | 1.33 | 72.00 | 95.76 | 105.00 | 114.06 | 120.28 | 126.32 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hou | 0.70 | 7.00 | 4.90 | 5.37 | 5.84 | 6.15 | 6.46 |
| Sub-Total | | | | 324.10 | 355.37 | 386.04 | 407.08 | 427.52 |
| Other material | 15% | | | 248.61 | 253.30 | 257.90 | 261.06 | 264.12 |
| 3-Grand Total Costs | | | | | | | | |
| | | | | 1906.01 | 1839.57 | 1874.84 | 1899.04 | 1922.54 |
| | | | | (1488.44) | (1380.44) | (1394.57) | (1404.26) | (1413.67) |
| C-NET RETURN(L/E per Fed.) | | | | 957.39 | 1300.08 | 1535.71 | 1697.41 | 1854.81 |
| D-NET RETURN RATIO | | | | 33.4 | 41.4 | 45.0 | 47.2 | 49.1 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | | 342.69 | 574.32 | 740.02 | 897.22 | 1054.42 |
| F-NET INCOME(L/E per Fed.) | | | | 1394.96 | 1759.21 | 2015.94 | 2192.19 | 2363.48 |

Note: () = production cost without family labor cost

Table N.1.34 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Maize

| Item | Unit | Unit Price L/E | W/O Yield & Input per Fed. | W/O Yield/W.O.P. Sit Value/fed | | | With Project Situation Value per Fed/dan | | | Full benefit L/E |
|---|-----------|----------------|----------------------------|--------------------------------|----------|----------|--|----------|----------|------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ardab | 54.00 | 17.85 | 963.90 | 1059.48 | 1154.52 | 1218.24 | 1281.96 | | |
| Second product | cam/load | 8.80 | 12.50 | 110.00 | 120.91 | 131.82 | 139.04 | 146.34 | | |
| Green fodder | per fed. | 105.60 | 1.12 | 118.27 | 129.89 | 141.5 | 149.95 | 157.34 | | |
| TOTAL GROSS INCOME | | | | 1192.17 | 1310.28 | 1427.84 | 1507.23 | 1585.64 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | | |
| Pumpset(irrigation) | hour | 3.33 | 27.00 | 89.91 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Seed | kg | 0.62 | 25.00 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.67 | 80.00 | 133.60 | 133.60 | 133.60 | 133.60 | 133.60 | | |
| P205 | kg | 1.51 | 30.00 | 45.30 | 45.30 | 45.30 | 45.30 | 45.30 | | |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.11 | 15.00 | 31.65 | 31.65 | 31.65 | 31.65 | 31.65 | | |
| Insecticides | liter | 35.20 | 1.00 | 35.20 | 35.20 | 35.20 | 35.20 | 35.20 | | |
| Fungicides | liter | 22.00 | 1.00 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | | |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Sprayer | hour | 2.81 | 4.00 | 11.24 | 11.24 | 11.24 | 11.24 | 11.24 | | |
| Animal work | | | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Manure transportation | donk/hour | 0.62 | 37.50 | 23.25 | 23.25 | 23.25 | 23.25 | 23.25 | | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 90.00 | 71.10 | 74.70 | 74.70 | 74.70 | 74.70 | | |
| Hired labor | man/hour | 0.79 | 38.00 | 30.02 | 31.54 | 31.54 | 31.54 | 31.54 | | |
| Sub-Total | | | | 622.77 | 537.98 | 537.98 | 537.98 | 537.98 | | |
| 2-Yield Dependent Costs | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 54.00 | 42.66 | 49.26 | 53.68 | 56.65 | 59.61 | | |
| Hired labor | man/hour | 0.79 | 23.00 | 18.17 | 20.98 | 22.87 | 24.13 | 25.39 | | |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Animal transportation | donk/hour | 0.62 | 24.00 | 14.88 | 16.36 | 17.82 | 18.81 | 19.79 | | |
| Sub-Total | | | | 75.71 | 86.6 | 94.37 | 99.59 | 104.79 | | |
| Other material | 10% | | | 70.00 | 71.45 | 72.23 | 72.75 | 73.27 | | |
| 3-Grand Total Costs | | | | 768.48 | 696.03 | 704.58 | 710.32 | 716.04 | | |
| C-NET RETURN(L.E. per Fed.) | | | | (654.72) | (572.07) | (578.97) | (581.73) | (581.73) | | |
| D-NET RETURN RATIO(%) | | | | 35.5 | 46.9 | 50.7 | 52.9 | 54.8 | | |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | 35.5 | 46.9 | 50.7 | 52.9 | 54.8 | | |
| F-NET INCOME(L.E. per Fed.) | | | | 537.45 | 738.21 | 851.64 | 926.26 | 1003.91 | | |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 LE

Table N.1.35 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Maize

| Item | Unit | Unit Price L/E | W/O Yield & Input per Fed. | W/O Yield/W.O.P. Sit Value/fed | | | With Project Situation Value per Fed/dan | | | Full benefit L/E |
|---|-----------|----------------|----------------------------|--------------------------------|----------|----------|--|----------|----------|------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ardab | 65.00 | 17.85 | 1160.25 | 1275.30 | 1389.70 | 1466.40 | 1543.10 | | |
| Second product | cam/load | 10.00 | 12.50 | 125.00 | 137.40 | 149.80 | 158.00 | 166.30 | | |
| Green fodder | per fed. | 120.00 | 1.12 | 134.40 | 147.6 | 160.8 | 170.4 | 178.8 | | |
| TOTAL GROSS INCOME | | | | 1419.65 | 1560.30 | 1700.3 | 1794.8 | 1888.2 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 | | |
| Pumpset(irrigation) | hour | 3.20 | 27.00 | 86.40 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Seed | kg | 0.70 | 25.00 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.30 | 80.00 | 104.00 | 104.00 | 104.00 | 104.00 | 104.00 | | |
| P205 | kg | 2.10 | 30.00 | 63.00 | 63.00 | 63.00 | 63.00 | 63.00 | | |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.40 | 15.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | | |
| Insecticides | liter | 40.00 | 1.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | | |
| Fungicides | liter | 25.00 | 1.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | | |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Sprayer | hour | 2.00 | 4.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | | |
| Animal work | | | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Manure transportation | donk/hour | 0.70 | 37.50 | 26.25 | 26.25 | 26.25 | 26.25 | 26.25 | | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 90.00 | 119.70 | 119.70 | 119.70 | 119.70 | 119.70 | | |
| Hired labor | man/hour | 1.33 | 38.00 | 50.54 | 50.54 | 50.54 | 50.54 | 50.54 | | |
| Sub-Total | | | | 651.39 | 564.99 | 564.99 | 564.99 | 564.99 | | |
| 2-Yield Dependent Costs | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 54.00 | 71.82 | 78.94 | 86.02 | 90.77 | 95.52 | | |
| Hired labor | man/hour | 1.33 | 23.00 | 30.59 | 33.62 | 36.64 | 38.66 | 40.68 | | |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Animal transportation | donk/hour | 0.70 | 24.00 | 16.80 | 18.47 | 20.12 | 21.23 | 22.34 | | |
| Sub-Total | | | | 119.21 | 131.03 | 142.78 | 150.66 | 158.54 | | |
| Other material | 10% | | | 115.59 | 117.36 | 119.13 | 120.31 | 121.49 | | |
| 3-Grand Total Costs | | | | 886.19 | 813.38 | 826.9 | 835.96 | 845.02 | | |
| C-NET RETURN(L.E. per Fed.) | | | | (604.67) | (614.74) | (621.18) | (625.40) | (629.80) | | |
| D-NET RETURN RATIO(%) | | | | 37.6 | 47.9 | 51.4 | 53.4 | 55.2 | | |
| E-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | 37.6 | 47.9 | 51.4 | 53.4 | 55.2 | | |
| F-NET INCOME(L.E. per Fed.) | | | | 774.48 | 945.56 | 1079.12 | 1168.31 | 1258.4 | | |

Note: () = production cost without family labor cost

Table N.1.36 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Rice

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | Value/W/O.P.S.H | | | With Project Situation | | | Full benefit |
|--|---------------------|------------|----------------------------|-----------------|----------|----------|------------------------|----------|---------|--------------|
| | | | | Value/fed | Yr.1 | Yr.2 | Yr.3 | Yr.1 | Yr.2 | |
| | | L/E | | L/E | L/E | L/E | L/E | L/E | L/E | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ton | 397.00 | 3.20 | 1270.40 | 1377.59 | 1484.78 | 1556.24 | 1627.70 | 1627.70 | |
| Second product | canal/load per fed. | 4.40 | 8.00 | 35.20 | 38.19 | 41.14 | 43.12 | 45.10 | 45.10 | |
| Green fodder | | 0.00 | 0.00 | 0.00 | | | | | | |
| TOTAL GROSS INCOME | | | | 1305.60 | 1415.78 | 1525.92 | 1599.36 | 1672.8 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 2.00 | 76.00 | 76.00 | 76.00 | 76.00 | 76.00 | 76.00 | |
| Pumpset(Irrigation) | hour | 3.33 | 70.00 | 233.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 0.88 | 65.00 | 57.20 | 57.20 | 57.20 | 57.20 | 57.20 | 57.20 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.67 | 60.00 | 100.20 | 100.20 | 100.20 | 100.20 | 100.20 | 100.20 | |
| P2O5 | kg | 1.51 | 20.00 | 30.20 | 30.20 | 30.20 | 30.20 | 30.20 | 30.20 | |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.11 | 5.00 | 10.55 | 10.55 | 10.55 | 10.55 | 10.55 | 10.55 | |
| Insecticides | liter | 30.80 | 1.00 | 30.80 | 30.80 | 30.80 | 30.80 | 30.80 | 30.80 | |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Herbicides | liter | 19.36 | 2.00 | 38.72 | 38.72 | 38.72 | 38.72 | 38.72 | 38.72 | |
| Sprayer | hour | 2.81 | 6.00 | 16.86 | 16.86 | 16.86 | 16.86 | 16.86 | 16.86 | |
| Animal work | cow/hour | 1.23 | 10.00 | 12.30 | 12.30 | 12.30 | 12.30 | 12.30 | 12.30 | |
| Cultivation | donk/hour | 0.62 | 12.50 | 7.75 | 7.75 | 7.75 | 7.75 | 7.75 | 7.75 | |
| Manure transportation | | | | | | | | | | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 120.00 | 94.80 | 99.60 | 99.60 | 99.60 | 99.60 | 99.60 | |
| Hired labor | man/hour | 0.79 | 52.00 | 41.08 | 43.16 | 43.16 | 43.16 | 43.16 | 43.16 | |
| Sub-Total | | | | 749.55 | 523.34 | 523.34 | 523.34 | 523.34 | 523.34 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 63.00 | 49.77 | 56.70 | 61.11 | 64.06 | 67.00 | 67.00 | |
| Hired labor | man/hour | 0.79 | 27.00 | 21.33 | 24.30 | 26.19 | 27.45 | 28.71 | 28.71 | |
| Machine threshing | hour | 13.00 | 2.00 | 26.00 | 28.19 | 30.39 | 31.85 | 33.31 | 33.31 | |
| Machine winnowing | hour | 11.00 | 2.00 | 22.00 | 23.86 | 25.71 | 26.95 | 28.19 | 28.19 | |
| Animal transportation | donk/hour | 0.62 | 23.00 | 14.26 | 15.46 | 16.67 | 17.47 | 18.27 | 18.27 | |
| Sub-Total | | | | 133.36 | 148.51 | 160.07 | 167.78 | 175.48 | 175.48 | |
| Other material | 10% | | | 88.00 | 90.50 | 91.65 | 92.42 | 93.19 | 93.19 | |
| 3-Grand Total Costs | | | | 970.92 | 762.35 | 775.06 | 783.54 | 792.01 | 792.01 | |
| C-NET RETURN(L.E. per Fed.) | | | | (476.35) | (606.05) | (614.35) | (619.88) | (625.41) | | |
| D-NET RETURN RATIO(N) | | | | 334.66 | 633.43 | 750.86 | 815.82 | 880.79 | | |
| E-NET RETURN RATIO(N) | | | | 25.6 | 46.2 | 49.2 | 51.0 | 52.7 | | |
| F-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | 479.25 | 809.73 | 911.57 | 979.48 | 1047.39 | | |
| G-NET INCOME(L.E. per Fed.) | | | | 1061.08 | 1440.1 | 1595.07 | 1698.47 | 1801.72 | | |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 LE

Table N.1.37 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Rice

| Item | Unit | Unit Price | W/O Yield & Input per Fed. | Value/W/O.P.S.H | | | With Project Situation | | | Full benefit |
|--|---------------------|------------|----------------------------|-----------------|----------|----------|------------------------|----------|---------|--------------|
| | | | | Value/fed | Yr.1 | Yr.2 | Yr.3 | Yr.1 | Yr.2 | |
| | | L/E | | L/E | L/E | L/E | L/E | L/E | L/E | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ton | 600.00 | 3.20 | 1920.00 | 2082.00 | 2244.00 | 2352.00 | 2460.00 | 2460.00 | |
| Second product | canal/load per fed. | 5.00 | 8.00 | 40.00 | 43.40 | 46.75 | 49.00 | 51.25 | 51.25 | |
| Green fodder | | 0.00 | 0.00 | 0.00 | | | | | | |
| TOTAL GROSS INCOME | | | | 1960.00 | 2125.40 | 2290.75 | 2461 | 2511.25 | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 2.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | |
| Pumpset(Irrigation) | hour | 3.20 | 70.00 | 224.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 1.00 | 65.00 | 65.00 | 65.00 | 65.00 | 65.00 | 65.00 | 65.00 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.30 | 60.00 | 78.00 | 78.00 | 78.00 | 78.00 | 78.00 | 78.00 | |
| P2O5 | kg | 2.10 | 20.00 | 42.00 | 42.00 | 42.00 | 42.00 | 42.00 | 42.00 | |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Other: | | | | | | | | | | |
| Manure: | m3 | 2.40 | 5.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| Insecticides | liter | 35.00 | 1.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Herbicides | liter | 22.00 | 2.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | |
| Sprayer | hour | 2.00 | 6.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | |
| Animal work | cow/hour | 1.40 | 10.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | |
| Cultivation | donk/hour | 0.70 | 12.50 | 8.75 | 8.75 | 8.75 | 8.75 | 8.75 | 8.75 | |
| Manure transportation | | | | | | | | | | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 120.00 | 159.60 | 159.60 | 159.60 | 159.60 | 159.60 | 159.60 | |
| Hired labor | man/hour | 1.33 | 52.00 | 69.16 | 69.16 | 69.16 | 69.16 | 69.16 | 69.16 | |
| Sub-Total | | | | 813.51 | 589.51 | 589.51 | 589.51 | 589.51 | 589.51 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 63.00 | 83.79 | 90.86 | 97.93 | 102.64 | 107.36 | 107.36 | |
| Hired labor | man/hour | 1.33 | 27.00 | 35.91 | 38.94 | 41.97 | 42.99 | 46.01 | 46.01 | |
| Machine threshing | hour | 12.00 | 2.00 | 24.00 | 26.03 | 28.05 | 29.40 | 30.75 | 30.75 | |
| Machine winnowing | hour | 10.00 | 2.00 | 20.00 | 21.69 | 23.38 | 24.50 | 25.62 | 25.62 | |
| Animal transportation | donk/hour | 0.70 | 23.00 | 16.10 | 17.46 | 18.82 | 19.72 | 20.63 | 20.63 | |
| Sub-Total | | | | 179.80 | 194.98 | 210.15 | 220.25 | 230.38 | 230.38 | |
| Other material | 15% | | | 149.00 | 151.27 | 153.53 | 155.06 | 156.58 | 156.58 | |
| 3-Grand Total Costs | | | | 1142.31 | 935.76 | 953.21 | 964.82 | 976.47 | 976.47 | |
| C-NET RETURN(L.E. per Fed.) | | | | (89.27) | (645.30) | (695.68) | (702.58) | (709.51) | | |
| D-NET RETURN RATIO(N) | | | | 817.69 | 1182.94 | 1337.54 | 1436.18 | 1524.78 | | |
| E-NET RETURN RATIO(N) | | | | 41.7 | 56.0 | 58.4 | 59.8 | 61.1 | | |
| F-INCREMENTAL DIFFERENCE(L.E. per Fed.) | | | | 371.95 | 519.85 | 618.45 | 678.49 | 717.04 | | |
| G-NET INCOME(L.E. per Fed.) | | | | 1061.08 | 1440.1 | 1595.07 | 1698.47 | 1801.72 | | |

Note: () = production cost without family labor cost

Table N.1.39 Crop Production Model for Agricultural Net Income Estimate
 Input-Output
 Crop Name: Water Melon seed

| Item | Unit | Unit Price L/E | W/O Yield & Input per Fed. | With Project Situation Value per Fed/da | | | Full benefit L/E |
|---|---------------------|----------------|----------------------------|---|----------|----------|------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ton | 8600.00 | 0.35 | 2310.00 | 2442.00 | 2574.00 | 2706.00 |
| Second product | canal/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.00 | 114.00 | 114.00 | 114.00 | 114.00 |
| Pumpset(Irrigation) | hour | 3.33 | 15.00 | 49.95 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 6.90 | 2.00 | 13.20 | 13.20 | 13.20 | 13.20 |
| Fertilizer: | | | | | | | |
| N | kg | 1.67 | 80.00 | 133.60 | 133.60 | 133.60 | 133.60 |
| P2O5 | kg | 1.31 | 15.00 | 22.65 | 22.65 | 22.65 | 22.65 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure: | m3 | 2.11 | 10.00 | 21.10 | 21.10 | 21.10 | 21.10 |
| Insecticides | liter | 35.20 | 3.00 | 105.60 | 105.60 | 105.60 | 105.60 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.31 | 6.00 | 16.86 | 16.86 | 16.86 | 16.86 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.62 | 25.00 | 15.50 | 15.50 | 15.50 | 15.50 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 0.79 | 70.00 | 55.30 | 58.10 | 52.10 | 58.10 |
| Hired labor | man/hour | 0.79 | 30.00 | 23.70 | 24.90 | 24.90 | 24.90 |
| Sub-Total | 0.83 | 571.46 | 0.00 | 525.51 | 525.51 | 525.51 | 525.51 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 0.79 | 50.00 | 39.50 | 43.87 | 46.24 | 48.61 |
| Hired labor | man/hour | 0.79 | 22.00 | 17.38 | 19.30 | 20.35 | 21.39 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.62 | 6.30 | 3.91 | 4.13 | 4.35 | 4.58 |
| Sub-Total | 60.79 | 67.3 | 6.30 | 60.79 | 67.3 | 70.94 | 74.58 |
| Other material | 10% | 63.00 | 63.00 | 64.28 | 64.28 | 65.00 | 65.19 |
| 3-Grand Total Costs | | | | | | | |
| 695.25 | | | | | | | |
| (600.45) | | | | | | | |
| 1614.73 | | | | | | | |
| 1744.91 | | | | | | | |
| 1912.91 | | | | | | | |
| 2040.91 | | | | | | | |
| 2104.9 | | | | | | | |
| 69.9 | | | | | | | |
| 73.3 | | | | | | | |
| 74.4 | | | | | | | |
| 75.9 | | | | | | | |
| 1709.55 | | | | | | | |
| 1885.88 | | | | | | | |
| 2017.25 | | | | | | | |
| 2147.62 | | | | | | | |
| 2212.8 | | | | | | | |

Note: (*) = production cost without family labor cost
 Shadow price of labor wage with project is 0.83 LE

Table N.1.39 Crop Production Model for Agricultural Net Income Estimate
 Input-Output
 Crop Name: Water Melon seed

| Item | Unit | Unit Price L/E | W/O Yield & Input per Fed. | With Project Situation Value per Fed/da | | | Full benefit L/E |
|---|---------------------|----------------|----------------------------|---|----------|----------|------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ton | 7500.00 | 0.35 | 2625.00 | 2775.00 | 2925 | 3075 |
| Second product | canal/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.00 | 75.00 | 75.00 | 75.00 | 75.00 |
| Pumpset(Irrigation) | hour | 3.20 | 15.00 | 48.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 7.50 | 2.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| Fertilizer: | | | | | | | |
| N | kg | 1.50 | 80.00 | 120.00 | 120.00 | 120.00 | 120.00 |
| P2O5 | kg | 2.10 | 15.00 | 31.50 | 31.50 | 31.50 | 31.50 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure: | m3 | 2.40 | 10.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| Insecticides | liter | 40.00 | 3.00 | 120.00 | 120.00 | 120.00 | 120.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 6.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 25.00 | 17.50 | 17.50 | 17.50 | 17.50 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 1.33 | 70.00 | 93.10 | 93.10 | 93.10 | 93.10 |
| Hired labor | man/hour | 1.33 | 30.00 | 39.90 | 39.90 | 39.90 | 39.90 |
| Sub-Total | 0.00 | 580.00 | 0.00 | 580.00 | 532 | 532 | 532 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 1.33 | 50.00 | 66.50 | 70.30 | 74.10 | 77.90 |
| Hired labor | man/hour | 1.33 | 22.00 | 29.26 | 30.93 | 32.60 | 34.28 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.70 | 6.30 | 4.41 | 4.66 | 4.91 | 5.17 |
| Sub-Total | 105.83 | 111.61 | 6.30 | 100.17 | 105.83 | 111.61 | 117.35 |
| Other material | 15% | 102.03 | 102.03 | 102.88 | 103.74 | 104.60 | 105.03 |
| 3-Grand Total Costs | | | | | | | |
| 782.20 | | | | | | | |
| (622.80) | | | | | | | |
| 1647.90 | | | | | | | |
| 1704.93 | | | | | | | |
| 1877.63 | | | | | | | |
| 1937.05 | | | | | | | |
| 76.0 | | | | | | | |
| 70.2 | | | | | | | |
| 73.3 | | | | | | | |
| 74.4 | | | | | | | |
| 75.5 | | | | | | | |
| 2002.40 | | | | | | | |
| 2197.53 | | | | | | | |
| 2344.85 | | | | | | | |
| 2499.05 | | | | | | | |
| 2565.62 | | | | | | | |

Note: (*) = production cost without family labor cost

Table N.1.40 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Summer Vegetable (Tomato)

| Item | Unit | Unit Price L/E | W/O Yield W/O.P. Sit & Input per Fed. | With Project Situation | | | Full benefit L/E |
|--|------------------------|-------------------|---|------------------------|-------------|-------------|------------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ton | 264.00 | 10.54 | 2762.56 | 3075.60 | 3561.36 | 3756.72 |
| Second product | canal/load per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.50 | 133.00 | 133.00 | 133.00 | 133.00 |
| Pumps(Irrigation) | hour | 3.33 | 35.00 | 116.55 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 6.16 | 0.10 | 0.62 | 0.62 | 0.62 | 0.62 |
| Fertilizer: | | | | | | | |
| N | kg | 1.87 | 80.00 | 133.60 | 133.60 | 133.60 | 133.60 |
| P205 | kg | 1.51 | 15.00 | 22.65 | 22.65 | 22.65 | 22.65 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure: | m3 | 2.11 | 10.00 | 21.10 | 21.10 | 21.10 | 21.10 |
| Insecticides | liter | 35.20 | 1.50 | 52.80 | 52.80 | 52.80 | 52.80 |
| Fungicides | liter | 17.60 | 3.00 | 52.80 | 52.80 | 52.80 | 52.80 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 9.00 | 25.29 | 25.29 | 25.29 | 25.29 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.62 | 25.00 | 15.50 | 15.50 | 15.50 | 15.50 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 0.79 | 207.00 | 163.53 | 171.81 | 171.81 | 171.81 |
| Hired labor | man/hour | 0.79 | 88.00 | 69.52 | 73.04 | 73.04 | 73.04 |
| Sub-Total | | 0.83 | 0.00 | 806.96 | 702.21 | 702.21 | 702.21 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 0.79 | 122.00 | 96.58 | 111.92 | 122.49 | 136.71 |
| Hired labor | man/hour | 0.79 | 52.00 | 41.08 | 47.71 | 52.21 | 58.27 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.62 | 67.50 | 41.95 | 46.25 | 50.63 | 56.50 |
| Sub-Total | | | | 179.31 | 205.89 | 225.33 | 251.48 |
| Other material | 10% | | | 99.00 | 102.47 | 104.41 | 107.02 |
| 3-Grand Total Costs | | | | | | | |
| | | | | 1085.27 | 1010.37 | 1031.95 | 1046.33 |
| | | | | (825.35) | (726.84) | (737.65) | (744.92) |
| C-NET RETURN(L/E per Fed.) | | | | | | | |
| | | | | 1897.29 | 2065.03 | 2324.05 | 2615.03 |
| D-NET RETURN RATIO(Q) | | | | | | | |
| | | | | 61 | 67.1 | 69.3 | 70.6 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | | | | | |
| | | | | 1451.20 | 2348.76 | 2828.35 | 2816.44 |
| F-NET INCOME(L/E per Fed.) | | | | | | | |
| | | | | 2735.42 | 2963.75 | 2977.74 | 3199.03 |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 L/E

Table N.1.41 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Summer Vegetable (Tomato)

| Item | Unit | Unit Price L/E | W/O Yield W/O.P. Sit & Input per Fed. | With Project Situation | | | Full benefit L/E |
|--|------------------------|-------------------|---|------------------------|-------------|-------------|------------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOME: | | | | | | | |
| Main product(Grain) | ton | 300.00 | 10.54 | 3192.00 | 3495.00 | 4047.00 | 4269.00 |
| Second product | canal/load per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.50 | 87.50 | 87.50 | 87.50 | 87.50 |
| Pumps(Irrigation) | hour | 3.20 | 35.00 | 112.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 7.00 | 0.10 | 0.70 | 0.70 | 0.70 | 0.70 |
| Fertilizer: | | | | | | | |
| N | kg | 1.30 | 80.00 | 104.00 | 104.00 | 104.00 | 104.00 |
| P205 | kg | 2.10 | 15.00 | 31.50 | 31.50 | 31.50 | 31.50 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | | | | | | | |
| Manure: | m3 | 2.40 | 10.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| Insecticides | liter | 40.00 | 1.50 | 60.00 | 60.00 | 60.00 | 60.00 |
| Fungicides | liter | 20.00 | 3.00 | 60.00 | 60.00 | 60.00 | 60.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 9.00 | 18.00 | 18.00 | 18.00 | 18.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 25.00 | 17.50 | 17.50 | 17.50 | 17.50 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 1.33 | 207.00 | 275.31 | 275.31 | 275.31 | 275.31 |
| Hired labor | man/hour | 1.33 | 88.00 | 117.04 | 117.04 | 117.04 | 117.04 |
| Sub-Total | | 0.00 | 0.00 | 907.55 | 795.55 | 795.55 | 795.55 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 1.33 | 122.00 | 162.26 | 179.35 | 196.28 | 219.07 |
| Hired labor | man/hour | 1.33 | 52.00 | 69.16 | 76.44 | 83.66 | 93.27 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.70 | 67.50 | 47.25 | 52.22 | 57.16 | 60.47 |
| Sub-Total | | | | 278.67 | 308.02 | 337.1 | 356.66 |
| Other material | 15% | | | 177.93 | 182.34 | 186.70 | 192.57 |
| 3-Grand Total Costs | | | | | | | |
| | | | | 1304.15 | 1285.91 | 1319.35 | 1341.84 |
| | | | | (976.58) | (831.26) | (847.76) | (869.97) |
| C-NET RETURN(L/E per Fed.) | | | | | | | |
| | | | | 1797.85 | 2294.09 | 2505.65 | 2705.16 |
| D-NET RETURN RATIO(Q) | | | | | | | |
| | | | | 56.9 | 63.2 | 65.5 | 68.0 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | | | | | |
| | | | | 2735.42 | 2963.75 | 2977.74 | 3199.03 |
| F-NET INCOME(L/E per Fed.) | | | | | | | |
| | | | | 2735.42 | 2963.75 | 2977.74 | 3199.03 |

Note: () = production cost without family labor cost

Table N.1.42 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Citrus

| Item | Unit | Price | W/O Yield & Input per Fed. | W/O Yield/Value per Fed. | | With Project Situation | | Full benefit |
|--|---------------------|--------|----------------------------|--------------------------|---------|------------------------|---------|--------------|
| | | | | Yr.1 | Yr.2 | Yr.1 | Yr.2 | |
| A-INCOME: | | | | | | | | |
| Main product(Grain) | ton | 396.00 | 8.93 | 3536.28 | 3833.28 | 4130.28 | 4328.28 | 4526.28 |
| Second product | canal/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | 3536.28 | 3833.28 | 4130.28 | 4328.28 | 4526.28 |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 4.20 | 159.60 | 159.60 | 159.60 | 159.60 | 159.60 |
| Pumpset(Irrigation) | hour | 3.33 | 60.00 | 199.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 92.65 | 1.00 | 92.65 | 92.65 | 92.65 | 92.65 | 92.65 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.67 | 120.00 | 200.40 | 200.40 | 200.40 | 200.40 | 200.40 |
| P2O5 | kg | 1.51 | 30.00 | 45.30 | 45.30 | 45.30 | 45.30 | 45.30 |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other: | | | | | | | | |
| Manure: | m3 | 2.11 | 20.00 | 42.20 | 42.20 | 42.20 | 42.20 | 42.20 |
| Insecticides | liter | 3.52 | 172.00 | 605.44 | 605.44 | 605.44 | 605.44 | 605.44 |
| Fungicides | liter | 14.96 | 10.00 | 149.60 | 149.60 | 149.60 | 149.60 | 149.60 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 72.00 | 202.32 | 202.32 | 202.32 | 202.32 | 202.32 |
| Animal work: | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.62 | 50.00 | 31.00 | 31.00 | 31.00 | 31.00 | 31.00 |
| Labor cost: | | | | | | | | |
| Family labor | man/hour | 0.79 | 170.00 | 134.30 | 141.10 | 141.10 | 141.10 | 141.10 |
| Hired labor | man/hour | 0.79 | 72.00 | 56.88 | 59.76 | 59.76 | 59.76 | 59.76 |
| Sub-Total | | | | 1919.48 | 1729.37 | 1729.37 | 1729.37 | 1729.37 |
| 2-Yield Dependent Costs: | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 0.79 | 77.00 | 60.83 | 69.28 | 74.65 | 78.22 | 81.80 |
| Hired labor | man/hour | 0.79 | 33.00 | 26.07 | 29.69 | 31.99 | 33.52 | 35.06 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.62 | 49.10 | 30.44 | 33.00 | 35.56 | 37.26 | 38.96 |
| Sub-Total | | | | 117.34 | 131.97 | 142.2 | 149 | 156.82 |
| Other material | 1% | | | 204.00 | 206.11 | 207.14 | 207.82 | 208.50 |
| 3-Grand Total Costs | | | | 2240.83 | 2067.45 | 2078.71 | 2086.19 | 2093.69 |
| C-NET RETURN(L/E per Fed.) | | | | 2045.70 | 1865.83 | 1862.06 | 1866.87 | 1870.79 |
| D-NET RETURN RATION | | | | 1795.45 | 1765.83 | 2051.57 | 2247.09 | 2437.59 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | | 36.6 | 46.1 | 49.7 | 51.8 | 53.7 |
| F-NET INCOME(L/E per Fed.) | | | | 1490.58 | 1976.21 | 2287.37 | 2481.41 | 2655.49 |

Note: () = production cost without family labor cost.
Shadow price of labor wage with project is 0.80 LE

Table N.1.43 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Citrus

| Item | Unit | Price | W/O Yield & Input per Fed. | W/O Yield/Value per Fed. | | With Project Situation | | Full benefit |
|--|---------------------|--------|----------------------------|--------------------------|---------|------------------------|---------|--------------|
| | | | | Yr.1 | Yr.2 | Yr.1 | Yr.2 | |
| A-INCOME: | | | | | | | | |
| Main product(Grain) | ton | 450.00 | 8.93 | 4018.50 | 4693.50 | 4918.50 | 5143.50 | 5143.50 |
| Second product | canal/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Green fodder | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | | 4018.50 | 4693.50 | 4918.50 | 5143.50 | 5143.50 |
| B-COSTS OF PRODUCTION: | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | |
| Machinery: | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 4.20 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 |
| Pumpset(Irrigation) | hour | 3.20 | 60.00 | 192.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 105.28 | 1.00 | 105.28 | 105.28 | 105.28 | 105.28 | 105.28 |
| Fertilizer: | | | | | | | | |
| N | kg | 1.30 | 120.00 | 156.00 | 156.00 | 156.00 | 156.00 | 156.00 |
| P2O5 | kg | 2.10 | 30.00 | 63.00 | 63.00 | 63.00 | 63.00 | 63.00 |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other: | | | | | | | | |
| Manure: | m3 | 2.40 | 20.00 | 48.00 | 48.00 | 48.00 | 48.00 | 48.00 |
| Insecticides | liter | 4.00 | 172.00 | 688.00 | 688.00 | 688.00 | 688.00 | 688.00 |
| Fungicides | liter | 17.00 | 10.00 | 170.00 | 170.00 | 170.00 | 170.00 | 170.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 72.00 | 144.00 | 144.00 | 144.00 | 144.00 | 144.00 |
| Animal work: | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 50.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 |
| Labor cost: | | | | | | | | |
| Family labor | man/hour | 1.33 | 170.00 | 226.10 | 226.10 | 226.10 | 226.10 | 226.10 |
| Hired labor | man/hour | 1.33 | 72.00 | 95.76 | 95.76 | 95.76 | 95.76 | 95.76 |
| Sub-Total | | | | 2028.14 | 1836.14 | 1836.14 | 1836.14 | 1836.14 |
| 2-Yield Dependent Costs: | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | |
| Family labor | man/hour | 1.33 | 77.00 | 102.41 | 111.01 | 119.61 | 125.35 | 131.08 |
| Hired labor | man/hour | 1.33 | 33.00 | 43.89 | 47.58 | 51.26 | 53.72 | 56.18 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.70 | 49.10 | 34.37 | 37.26 | 40.14 | 42.07 | 43.99 |
| Sub-Total | | | | 180.67 | 195.85 | 211.01 | 221.14 | 231.25 |
| Other material | 1% | | | 231.32 | 233.60 | 235.87 | 238.31 | 238.91 |
| 3-Grand Total Costs | | | | 2540.13 | 2366.59 | 2383.02 | 2394.67 | 2406.3 |
| C-NET RETURN(L/E per Fed.) | | | | 1478.37 | 1326.91 | 1532.48 | 1707.83 | 1707.20 |
| D-NET RETURN RATION | | | | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | | 45.7 | 49.2 | 51.3 | 51.3 | 51.3 |
| F-NET INCOME(L/E per Fed.) | | | | 1406.88 | 2337.57 | 2556.19 | 2875.28 | 3094.28 |

Note: () = production cost without family labor cost

Table N.1.44 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Flax

| Item | Unit | Price L/E | W/O Yield/W/O P Sit & Input Value/ Fed per Fed. | With Project Situation | | | Full benefit L/E |
|--|------------|--------------|--|------------------------|-------------|-------------|------------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOMES: | | | | | | | |
| Main product(Grain) | ton | 220.00 | 2.72 | 613.80 | 627.00 | 638.00 | 646.80 |
| Second product | canal/load | 1672.00 | 0.53 | 902.88 | 936.32 | 953.04 | 963.04 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | 1484.56 | 1516.68 | 1563.32 | 1591.04 | 1599.84 |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 2.50 | 95.00 | 96.00 | 95.00 | 95.00 |
| Pumpset(Irrigation) | hour | 3.33 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 2.29 | 50.00 | 114.50 | 114.50 | 114.50 | 114.50 |
| Fertilizer: | | | | | | | |
| N | kg | 1.67 | 66.00 | 110.22 | 110.22 | 110.22 | 110.22 |
| P2O5 | kg | 1.51 | 15.00 | 22.65 | 22.65 | 22.65 | 22.65 |
| K | kg | 1.16 | 24.00 | 27.84 | 27.84 | 27.84 | 27.84 |
| Other: | m3 | 2.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure: | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 0.79 | 52.93 | 56.61 | 55.61 | 55.61 | 55.61 |
| Hired labor | man/hour | 0.79 | 22.91 | 24.07 | 24.07 | 24.07 | 24.07 |
| Sub-Total | | | 499.33 | 449.89 | 449.89 | 449.89 | 449.89 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 0.79 | 56.09 | 60.45 | 61.75 | 62.83 | 63.70 |
| Hired labor | man/hour | 0.79 | 24.49 | 26.39 | 26.96 | 27.43 | 27.81 |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.62 | 14.80 | 9.41 | 9.61 | 9.78 | 9.92 |
| Sub-Total | | | 89.76 | 96.25 | 98.32 | 100.04 | 101.43 |
| Other material | 10% | | 59.00 | 59.94 | 60.15 | 60.32 | 60.46 |
| 3-Grand Total Costs | | | 648.09 | 606.08 | 608.36 | 610.25 | 611.78 |
| C-NET RETURN(L/E per Fed.) | | | (539.07) | (490.02) | (491.00) | (491.81) | (492.47) |
| D-NET RETURN RATIO% | | | 836.47 | 910.6 | 954.96 | 980.79 | 988.06 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | 56.3 | 60.0 | 61.1 | 61.6 | 61.8 |
| F-NET INCOME(L/E per Fed.) | | | 945.49 | 1026.66 | 1072.32 | 1099.23 | 1107.31 |

Note: () = production cost without family labor-cost
Shadow price of labor wage with project is 0.83 LE

Table N.1.45 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Flax

| Item | Unit | Price L/E | W/O Yield/W/O P Sit & Input Value/ Fed per Fed. | With Project Situation | | | Full benefit L/E |
|--|------------|--------------|--|------------------------|-------------|-------------|------------------------|
| | | | | Yr.1 L/E | Yr.2 L/E | Yr.3 L/E | |
| A-INCOMES: | | | | | | | |
| Main product(Grain) | ton | 250.00 | 2.72 | 680.00 | 712.50 | 725.00 | 735.00 |
| Second product | canal/load | 1900.00 | 0.53 | 1007.00 | 1064.00 | 1083.00 | 1083.00 |
| Green fodder | per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROSS INCOME | | | 1687.00 | 1723.50 | 1776.5 | 1808 | 1818 |
| B-COSTS OF PRODUCTION: | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | |
| Machinery: | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 2.50 | 62.50 | 62.50 | 62.50 | 62.50 |
| Pumpset(Irrigation) | hour | 3.20 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seed | kg | 2.60 | 50.00 | 130.00 | 130.00 | 130.00 | 130.00 |
| Fertilizer: | | | | | | | |
| N | kg | 1.30 | 66.00 | 85.80 | 85.80 | 85.80 | 85.80 |
| P2O5 | kg | 2.10 | 15.00 | 31.50 | 31.50 | 31.50 | 31.50 |
| K | kg | 0.90 | 24.00 | 21.60 | 21.60 | 21.60 | 21.60 |
| Other: | m3 | 2.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure: | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sprayer | hour | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal work: | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manure transportation | donk/hour | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Labor cost: | | | | | | | |
| Family labor | man/hour | 1.33 | 67.00 | 89.11 | 89.11 | 89.11 | 89.11 |
| Hired labor | man/hour | 1.33 | 29.00 | 38.57 | 38.57 | 38.57 | 38.57 |
| Sub-Total | | | 510.28 | 459.08 | 459.08 | 459.08 | 459.08 |
| 2-Yield Dependent Costs: | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | |
| Family labor | man/hour | 1.33 | 71.00 | 94.42 | 96.86 | 100.68 | 102.07 |
| Hired labor | man/hour | 1.33 | 31.00 | 41.23 | 42.29 | 43.20 | 44.56 |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Animal transportation | donk/hour | 0.70 | 14.80 | 10.36 | 10.63 | 11.05 | 11.20 |
| Sub-Total | | | 146.02 | 149.78 | 153 | 155.69 | 157.83 |
| Other material | 15% | | 98.45 | 99.01 | 99.49 | 99.99 | 100.22 |
| 3-Grand Total Costs | | | 754.75 | 707.87 | 711.57 | 714.67 | 717.13 |
| C-NET RETURN(L/E per Fed.) | | | (571.21) | (521.90) | (523.57) | (524.88) | (525.95) |
| D-NET RETURN RATIO% | | | 932.25 | 1015.63 | 1064.93 | 1093.33 | 1100.87 |
| E-INCREMENTAL DIFFERENCE(L/E per Fed.) | | | 56.3 | 58.9 | 59.9 | 60.5 | 60.6 |
| F-NET INCOME(L/E per Fed.) | | | 1115.79 | 1201.6 | 1252.98 | 1283.12 | 1292.05 |

Note: () = production cost without family labor cost

Table N.1.46 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Sunflower

| Item | Unit | Unit Price L,E | W/O Yield & Input per Fed. | W/O Value/W/O Sit | | | With Project Situation | | | Full benefit L,E |
|--|-------------------|-------------------|----------------------------|-------------------|-------------|-------------|------------------------|-------------------|-------------|---------------------|
| | | | | Value/fed | Yr-1 L,E | Yr-2 L,E | Yr-3 L,E | Value per Fed/dan | Yr-1 L,E | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ton | 1162.00 | 0.92 | 1069.04 | 1162.00 | 1266.58 | 1324.68 | 1394.40 | 1394.40 | |
| Second product | cam/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Green fodder | cam/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| TOTAL GROSS INCOME | | | | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 38.00 | 3.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | 114.00 | |
| Pumpset(Irrigation) | hour | 3.33 | 22.00 | 73.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 1.76 | 5.00 | 8.80 | 8.80 | 8.80 | 8.80 | 8.80 | 8.80 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.67 | 18.00 | 30.06 | 30.06 | 30.06 | 30.06 | 30.06 | 30.06 | |
| P205 | kg | 1.51 | 30.00 | 45.30 | 45.30 | 45.30 | 45.30 | 45.30 | 45.30 | |
| K | kg | 1.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Other | | | | | | | | | | |
| Manure: | m3 | 2.11 | 20.00 | 42.20 | 42.20 | 42.20 | 42.20 | 42.20 | 42.20 | |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Sprayer | hour | 2.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal work: | | | | | | | | | | |
| Cultivation | cow/hour | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Manure transportation | donk/hour | 0.62 | 50.00 | 31.00 | 31.00 | 31.00 | 31.00 | 31.00 | 31.00 | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 50.58 | 84.66 | 84.66 | 84.66 | 84.66 | 84.66 | 84.66 | |
| Hired labor | man/hour | 0.79 | 34.76 | 36.52 | 36.52 | 36.52 | 36.52 | 36.52 | 36.52 | |
| Sub-Total | man/hour | | 459.96 | 392.54 | 392.54 | 392.54 | 392.54 | 392.54 | 392.54 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 0.79 | 39.50 | 45.11 | 49.17 | 51.42 | 54.15 | 54.15 | 54.15 | |
| Hired labor | man/hour | 0.79 | 17.38 | 19.85 | 21.63 | 22.63 | 23.82 | 23.82 | 23.82 | |
| Machine threshing | hour | 13.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Machine winnowing | hour | 11.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal transportation | donk/hour | 0.62 | 6.14 | 6.67 | 7.27 | 7.61 | 8.01 | 8.01 | 8.01 | |
| Sub-Total | man/hour | | 63.02 | 71.63 | 78.07 | 81.66 | 85.96 | 85.96 | 85.96 | |
| Other material: | 10% | | 52.00 | 53.74 | 54.39 | 54.75 | 55.18 | 55.18 | 55.18 | |
| 3-Grand Total Costs | | | | | | | | | | |
| | | | | 574.96 | 517.91 | 525 | 528.95 | 533.68 | 533.68 | |
| | | | | (454.96) | (388.14) | (391.17) | (392.87) | (394.89) | (394.89) | |
| C-NET RETURN(L,E per Fed.) | | | | | | | | | | |
| | | | | 494.06 | 644.09 | 741.58 | 795.73 | 860.72 | 860.72 | |
| D-NET RETURN RATIO(N) | | | | | | | | | | |
| | | | | 46.2 | 55.4 | 58.5 | 60.1 | 61.7 | 61.7 | |
| E-INCREMENTAL DIFFERENCE(L,E per Fed.) | | | | | | | | | | |
| | | | | 614.14 | 773.85 | 875.41 | 931.81 | 989.51 | 989.51 | |

Note: () = production cost without family labor cost
Shadow price of labor wage with project is 0.83 LE

Table N.1.47 Crop Production Model for Agricultural Net Income Estimate
Input-Output
Crop Name: Sunflower

| Item | Unit | Unit Price L,E | W/O Yield & Input per Fed. | W/O Value/W/O Sit | | | With Project Situation | | | Full benefit L,E |
|--|-------------------|-------------------|----------------------------|-------------------|-------------|-------------|------------------------|-------------------|-------------|---------------------|
| | | | | Value/fed | Yr-1 L,E | Yr-2 L,E | Yr-3 L,E | Value per Fed/dan | Yr-1 L,E | |
| A-INCOME: | | | | | | | | | | |
| Main product(Grain) | ton | 1320.00 | 0.92 | 1214.40 | 1320.00 | 1438.80 | 1504.80 | 1584.00 | 1584.00 | |
| Second product | cam/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Green fodder | cam/lead per fed. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| TOTAL GROSS INCOME | | | | | | | | | | |
| B-COSTS OF PRODUCTION: | | | | | | | | | | |
| 1-Non Yield Dependent Costs | | | | | | | | | | |
| Machinery: | | | | | | | | | | |
| Soil Prep.(Tractor) | hour | 25.00 | 3.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 | 75.00 | |
| Pumpset(Irrigation) | hour | 3.20 | 22.00 | 70.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Seed | kg | 2.00 | 5.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | |
| Fertilizer: | | | | | | | | | | |
| N | kg | 1.30 | 18.00 | 23.40 | 23.40 | 23.40 | 23.40 | 23.40 | 23.40 | |
| P205 | kg | 2.10 | 30.00 | 63.00 | 63.00 | 63.00 | 63.00 | 63.00 | 63.00 | |
| K | kg | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Other | | | | | | | | | | |
| Manure: | m3 | 2.40 | 20.00 | 48.00 | 48.00 | 48.00 | 48.00 | 48.00 | 48.00 | |
| Insecticides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Fungicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Herbicides | liter | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Sprayer | hour | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal work: | | | | | | | | | | |
| Cultivation | cow/hour | 1.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Manure transportation | donk/hour | 0.70 | 50.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | |
| Labor cost: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 102.00 | 135.66 | 135.66 | 135.66 | 135.66 | 135.66 | 135.66 | |
| Hired labor | man/hour | 1.33 | 44.00 | 58.52 | 58.52 | 58.52 | 58.52 | 58.52 | 58.52 | |
| Sub-Total | man/hour | | 518.98 | 448.58 | 448.58 | 448.58 | 448.58 | 448.58 | 448.58 | |
| 2-Yield Dependent Costs: | | | | | | | | | | |
| Labor for harvesting, threshing, winnowing etc.: | | | | | | | | | | |
| Family labor | man/hour | 1.33 | 50.00 | 66.50 | 72.28 | 78.79 | 82.40 | 86.74 | 86.74 | |
| Hired labor | man/hour | 1.33 | 22.00 | 29.26 | 31.80 | 34.67 | 36.26 | 38.17 | 38.17 | |
| Machine threshing | hour | 12.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Machine winnowing | hour | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Animal transportation | donk/hour | 0.70 | 9.90 | 6.93 | 7.53 | 8.21 | 8.59 | 9.04 | 9.04 | |
| Sub-Total | man/hour | | 102.89 | 111.61 | 121.87 | 127.25 | 133.95 | 143.95 | 143.95 | |
| Other material: | 10% | | 93.25 | 94.59 | 96.10 | 96.93 | 97.94 | 97.94 | 97.94 | |
| 3-Grand Total Costs | | | | | | | | | | |
| | | | | 714.92 | 634.78 | 666.35 | 672.76 | 680.47 | 680.47 | |
| | | | | (512.76) | (446.94) | (451.90) | (454.70) | (459.07) | (459.07) | |
| C-NET RETURN(L,E per Fed.) | | | | | | | | | | |
| | | | | 499.48 | 655.22 | 772.45 | 832.04 | 903.53 | 903.53 | |
| D-NET RETURN RATIO(N) | | | | | | | | | | |
| | | | | 41.1 | 50.4 | 53.7 | 55.3 | 57.0 | 57.0 | |
| E-INCREMENTAL DIFFERENCE(L,E per Fed.) | | | | | | | | | | |
| | | | | 701.64 | 873.16 | 986.9 | 1050.1 | 1125.93 | 1125.93 | |

Note: () = production cost without family labor cost

Table N.1.48 Summary of Net Return per Unit (LE/fed) Financial Price

(F/S) The Priority Area Downstream

| Crops | Net Return (LE/fed) | | | | |
|-------------------|---------------------|--------------|----------|----------|----------|
| | W/O | With Project | | | |
| | Project | Year.1 | Year.2 | Year.3 | Year.4 |
| Wheat | 1,058.55 | 1,182.87 | 1,242.04 | 1,281.70 | 1,321.60 |
| Broad Bean | 810.85 | 918.79 | 980.47 | 1,020.49 | 1,060.35 |
| Sugarbeet | 794.58 | 901.09 | 958.67 | 997.69 | 1,036.70 |
| Short Berseem | 410.89 | 465.22 | 481.16 | 492.11 | 502.56 |
| Long Berseem | 538.60 | 657.94 | 696.79 | 723.19 | 749.08 |
| Winter Vegetable | 857.70 | 968.39 | 1,031.09 | 1,071.39 | 1,113.93 |
| Cotton | 1,313.68 | 1,688.71 | 1,961.52 | 2,146.39 | 2,326.59 |
| Maize | 490.50 | 700.10 | 822.64 | 904.39 | 986.11 |
| Rice | 778.30 | 1,144.67 | 1,292.52 | 1,385.60 | 1,484.15 |
| Water Mellon Seed | 1,842.80 | 2,034.23 | 2,177.65 | 2,321.05 | 2,392.77 |
| Summer Vegetable | 1,784.70 | 2,193.28 | 2,489.88 | 2,689.41 | 2,886.23 |

Table N.1.49 Summary of Net Return per Unit (LE/fed) Economic Price

(F/S) The Priority Area Downstream

| Crops | Net Return (LE/fed) | | | | |
|-------------------|---------------------|--------------|----------|----------|----------|
| | W/O | With Project | | | |
| | Project | Year.1 | Year.2 | Year.3 | Year.4 |
| Wheat | 927.89 | 1,040.23 | 1,093.04 | 1,128.44 | 1,164.05 |
| Broad Bean | 1,490.11 | 1,615.25 | 1,700.17 | 1,755.23 | 1,810.15 |
| Sugarbeet | 1,390.99 | 1,506.78 | 1,582.32 | 1,633.51 | 1,684.68 |
| Short Berseem | 438.74 | 487.11 | 502.30 | 512.76 | 522.74 |
| Long Berseem | 544.57 | 655.27 | 692.33 | 717.51 | 742.23 |
| Winter Vegetable | 1,077.89 | 1,183.35 | 1,250.92 | 1,294.36 | 1,340.21 |
| Cotton | 1,329.79 | 1,665.57 | 1,917.24 | 2,087.82 | 2,254.07 |
| Maize | 386.17 | 573.77 | 679.39 | 749.83 | 820.27 |
| Rice | 308.03 | 623.34 | 720.71 | 781.98 | 846.87 |
| Water Mellon Seed | 1,614.75 | 1,784.91 | 1,912.91 | 2,040.91 | 2,104.90 |
| Summer Vegetable | 1,685.13 | 2,050.60 | 2,319.64 | 2,500.62 | 2,679.16 |

Table N.1.50 Summary of Net Return per Unit (LE/fed) Financial Price

(M/P) The Study Area Upstream

| Crops | Net Return (LE/fed) | | | | |
|------------------|---------------------|--------------|----------|----------|----------|
| | W/O Project | With Project | | | |
| | | Year.1 | Year.2 | Year.3 | Year.4 |
| Wheat | 1,300.10 | 1,409.42 | 1,455.64 | 1,485.69 | 1,515.99 |
| Broad Bean | 1,098.45 | 1,195.54 | 1,246.52 | 1,279.34 | 1,312.02 |
| Flax | 932.25 | 1,015.63 | 1,064.93 | 1,093.33 | 1,100.87 |
| Short Berseem | 139.58 | 183.97 | 189.95 | 193.95 | 197.93 |
| Long Berseem | 784.63 | 898.52 | 932.42 | 954.84 | 977.28 |
| Winter Vegetable | 1,671.97 | 1,780.46 | 1,843.19 | 1,883.53 | 1,923.86 |
| Cotton | 1,261.48 | 1,539.48 | 1,714.96 | 1,835.14 | 1,950.51 |
| Maize | 649.20 | 827.66 | 920.31 | 981.10 | 1,043.66 |
| Rice | 953.63 | 1,287.13 | 1,396.66 | 1,467.86 | 1,539.03 |
| Summer Vegetable | 1,908.05 | 2,224.92 | 2,427.09 | 2,564.57 | 2,699.35 |
| Citrus | 1,478.37 | 1,888.00 | 2,105.63 | 2,250.73 | 2,395.81 |
| Flax | 932.25 | 1,015.63 | 1,064.93 | 1,093.33 | 1,100.87 |

Table N.1.51 Summary of Net Return per Unit (LE/fed) Financial Price

(M/P) The Study Area Midstream

| Crops | Net Return (LE/fed) | | | | |
|------------------|---------------------|--------------|---------|---------|---------|
| | W/O Project | With Project | | | |
| | | Year.1 | Year.2 | Year.3 | Year.4 |
| Wheat | 1320.19 | 1453.12 | 1522.08 | 1567.44 | 1613.68 |
| Broad Bean | 1326.80 | 1455.39 | 1536.01 | 1591.05 | 1644.05 |
| Sugarbeet | 1395.18 | 1523.01 | 1602.90 | 1656.76 | 1709.70 |
| Short Berseem | 229.48 | 279.33 | 291.28 | 298.74 | 306.72 |
| Long Berseem | 659.47 | 783.35 | 827.22 | 856.14 | 885.57 |
| Winter Vegetable | 1585.57 | 1723.14 | 1810.46 | 1870.92 | 1929.16 |
| Cotton | 1281.20 | 1656.22 | 1924.34 | 2104.54 | 2284.76 |
| Maize | 642.78 | 866.68 | 1004.85 | 1096.20 | 1188.32 |
| Rice | 794.88 | 1161.27 | 1309.14 | 1402.20 | 1500.79 |
| Summer Vegetable | 1862.52 | 2279.16 | 2583.80 | 2788.69 | 2990.89 |
| Citrus | 1887.75 | 2433.90 | 2788.07 | 3027.02 | 3261.72 |

Table N.1.52 Summary of Net Return per Unit (LE/fed) Financial Price

(M/P) The Study Area Downstream

| Crops | Net Return (LE/fed) | | | | |
|------------------|---------------------|--------------|---------|---------|---------|
| | W/O Project | With Project | | | |
| | | Yr.1 | Yr.2 | Yr.3 | Yr.4 |
| Wheat | 1167.64 | 1295.11 | 1358.62 | 1401.68 | 1443.87 |
| Broad Bean | 937.31 | 1050.71 | 1116.12 | 1159.73 | 1203.33 |
| Sugarbeet | 936.14 | 1047.30 | 1111.42 | 1153.21 | 1195.93 |
| Short Berseem | 199.17 | 248.53 | 259.50 | 266.48 | 273.95 |
| Long Berseem | 728.31 | 854.65 | 901.48 | 932.37 | 963.26 |
| Winter Vegetable | 886.35 | 999.26 | 1061.95 | 1104.47 | 1147.01 |
| Cotton | 1290.22 | 1665.24 | 1937.85 | 2118.20 | 2298.39 |
| Maize | 651.80 | 876.89 | 1015.02 | 1107.66 | 1200.94 |
| Rice | 805.52 | 1177.37 | 1319.72 | 1418.26 | 1516.82 |
| Summer Vegetable | 1693.57 | 2094.12 | 2379.97 | 2571.45 | 2762.93 |
| Citrus | 1521.36 | 2037.70 | 2362.04 | 2575.42 | 2793.07 |
| Sunflower | 499.48 | 665.22 | 772.45 | 832.04 | 903.53 |

Table N.1.53 Present Net Value at Without Project Situation in the Priority Area
(Economic Price)

Upstream and Midstream

| Crops | Cropping Area (fed) | Net Return per fed. (LE/fed) | Total Net Value (,000LE) |
|-------------------|------------------------|------------------------------------|--------------------------------|
| Wheat | 12,130 | 1,038.77 | 12,600 |
| Broad Bean | 2,800 | 1,471.88 | 4,121 |
| Sugarbeet | 1,860 | 1,558.74 | 2,899 |
| Short Berseem | 6,210 | 499.18 | 3,100 |
| Long Berseem | 6,850 | 634.83 | 4,349 |
| Winter Vegetable | 1,160 | 1,327.63 | 1,540 |
| Cotton | 3,950 | 999.96 | 3,950 |
| Maize | 2,070 | 423.69 | 877 |
| Rice | 18,250 | 334.68 | 6,108 |
| Water Mellon Seed | 5,380 | 1,614.75 | 8,687 |
| Summer Vegetable | 1,360 | 1,697.29 | 2,308 |
| Citrus | 110 | 1,295.45 | 142 |
| Total | 62,130 | | 50,681 |

Downstream

| Crops | Cropping Area (fed) | Net Return per fed. (LE/fed) | Total Net Value (,000LE) |
|-------------------|------------------------|------------------------------------|--------------------------------|
| Wheat | 8,510 | 927.89 | 7,896 |
| Broad Bean | 1,290 | 1,490.11 | 1,922 |
| Sugarbeet | 3,350 | 1,390.99 | 4,660 |
| Short Berseem | 7,480 | 438.74 | 3,282 |
| Long Berseem | 4,390 | 544.57 | 2,391 |
| Winter Vegetable | 770 | 1,077.89 | 830 |
| Cotton | 7,480 | 1,329.79 | 9,947 |
| Maize | 2,320 | 386.17 | 896 |
| Rice | 11,610 | 308.03 | 3,576 |
| Water Mellon Seed | 3,610 | 1,614.75 | 5,829 |
| Summer Vegetable | 770 | 1,685.13 | 1,298 |
| Citrus | - | - | - |
| Total | 51,580 | | 42,527 |

Downstream Reaches of the Priority Area

| Crops | Cropping Area (fed) | Net Return per fed. (LE/fed) | Total Net Value (,000LE) |
|-------------------|------------------------|------------------------------------|--------------------------------|
| Wheat | 23,480 | 1,024.95 | 24,066 |
| Broad Bean | 5,340 | 1,664.60 | 8,889 |
| Sugarbeet | 5,340 | 1,576.48 | 8,418 |
| Short Berseem | 21,350 | 235.38 | 5,025 |
| Long Berseem | 19,210 | 726.10 | 13,948 |
| Winter Vegetable | 4,270 | 1,109.41 | 4,737 |
| Cotton | 21,350 | 1,308.01 | 27,926 |
| Maize | 10,670 | 526.58 | 5,619 |
| Rice | 35,220 | 326.58 | 11,502 |
| Water Mellon Seed | - | 0.00 | - |
| Summer Vegetable | 7,470 | 1,602.41 | 11,970 |
| Citrus | 2,130 | 1,333.89 | 2,841 |
| Sunflower | - | 494.06 | - |
| Total | 155,830 | | 124,941 |

Table N.1.54 Present Net Value With Project Situation in the Priority Area (F/S)
(Economic Prices)

| Upstream and Midstream | | | | | | | | | |
|---------------------------------|---------------|------------------|----------|----------|----------|-----------------|---------|---------|---------|
| Crops | Cropping Area | Net Return Value | | | | Total Net Value | | | |
| | | Year1 | Year2 | Year3 | Year4 | Year1 | Year2 | Year3 | Year4 |
| | (fed) | (LE/fed) | (LE/fed) | (LE/fed) | (LE/fed) | (000LE) | (000LE) | (000LE) | (000LE) |
| Wheat | 12,130 | 1,153.89 | 1,211.55 | 1,249.00 | 1,287.42 | 13,997 | 14,695 | 15,150 | 15,616 |
| Broad Bean | 2,800 | 1,556.27 | 1,678.85 | 1,733.80 | 1,788.90 | 4,470 | 4,701 | 4,855 | 5,009 |
| Sugarbeet | 1,650 | 1,680.56 | 1,763.39 | 1,818.22 | 1,873.02 | 3,126 | 3,280 | 3,382 | 3,484 |
| Short Berseem | 6,210 | 548.81 | 565.91 | 576.85 | 588.25 | 3,408 | 3,514 | 3,582 | 3,653 |
| Long Berseem | 4,680 | 749.01 | 789.90 | 817.46 | 844.55 | 3,505 | 3,697 | 3,826 | 3,952 |
| Winter Vegetable | 3,330 | 1,441.80 | 1,516.62 | 1,567.31 | 1,617.99 | 4,801 | 5,050 | 5,219 | 5,388 |
| Cotton | 3,950 | 1,307.15 | 1,524.55 | 1,673.75 | 1,818.79 | 5,163 | 6,022 | 6,611 | 7,184 |
| Maize | 10,160 | 614.25 | 723.26 | 795.91 | 859.60 | 6,241 | 7,348 | 8,097 | 8,835 |
| Rice | 8,200 | 653.43 | 750.85 | 815.82 | 880.79 | 5,358 | 6,157 | 6,690 | 7,222 |
| Water Mellon Seed | 4,960 | 1,784.91 | 1,912.91 | 2,040.91 | 2,104.90 | 8,853 | 9,468 | 10,123 | 10,440 |
| Summer Vegetable | 3,740 | 2,065.03 | 2,334.05 | 2,515.03 | 2,696.01 | 7,723 | 8,729 | 9,406 | 10,083 |
| Citrus | 110 | 1,765.83 | 2,051.57 | 2,242.09 | 2,432.59 | 194 | 226 | 247 | 268 |
| (Soil improvement Cost) | | 50 | 50 | 50 | 50 | 1,555 | 1,555 | 1,555 | 1,555 |
| Total | 62,130 | | | | | 65,284 | 71,353 | 75,633 | 79,579 |
| (Land Area) | 31,100 | | | | | | | | |
| Downstream | | | | | | | | | |
| Crops | Cropping Area | Net Return Value | | | | Total Net Value | | | |
| | | Year1 | Year2 | Year3 | Year4 | Year1 | Year2 | Year3 | Year4 |
| | (fed) | (LE/fed) | (LE/fed) | (LE/fed) | (LE/fed) | (000LE) | (000LE) | (000LE) | (000LE) |
| Wheat | 8,510 | 1,040.23 | 1,093.04 | 1,128.44 | 1,164.05 | 8,852 | 9,302 | 9,603 | 9,906 |
| Broad Bean | 1,290 | 1,615.25 | 1,700.17 | 1,755.23 | 1,810.15 | 2,084 | 2,193 | 2,264 | 2,335 |
| Sugarbeet | 3,350 | 1,506.78 | 1,582.32 | 1,633.51 | 1,684.68 | 5,048 | 5,301 | 5,472 | 5,644 |
| Short Berseem | 7,480 | 487.11 | 502.30 | 512.76 | 522.74 | 3,644 | 3,757 | 3,835 | 3,910 |
| Long Berseem | 3,100 | 655.27 | 692.33 | 717.51 | 742.23 | 2,031 | 2,146 | 2,224 | 2,301 |
| Winter Vegetable | 2,060 | 1,183.35 | 1,250.92 | 1,294.36 | 1,340.21 | 2,438 | 2,577 | 2,666 | 2,761 |
| Cotton | 7,480 | 1,665.57 | 1,917.24 | 2,087.82 | 2,254.07 | 12,458 | 14,341 | 15,617 | 16,860 |
| Maize | 7,740 | 573.77 | 679.39 | 749.83 | 820.27 | 4,441 | 5,258 | 5,804 | 6,349 |
| Rice | 4,900 | 623.34 | 720.71 | 781.98 | 846.87 | 3,054 | 3,531 | 3,832 | 4,150 |
| Water Mellon Seed | 3,610 | 1,784.91 | 1,912.91 | 2,040.91 | 2,104.90 | 6,444 | 6,906 | 7,368 | 7,599 |
| Summer Vegetable | 2,060 | 2,050.60 | 2,319.64 | 2,500.62 | 2,679.16 | 4,224 | 4,778 | 5,151 | 5,519 |
| Citrus | - | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| (Soil improvement Cost) | | 50 | 50 | 50 | 50 | 1,290 | 1,290 | 1,290 | 1,290 |
| Total | 51,580 | | | | | 53,428 | 58,800 | 62,546 | 66,044 |
| (Land Area) | 25,800 | | | | | | | | |
| Downstream of the Priority Area | | | | | | | | | |
| Crops | Cropping Area | Net Return Value | | | | Total Net Value | | | |
| | | Year1 | Year2 | Year3 | Year4 | Year1 | Year2 | Year3 | Year4 |
| | (fed) | (LE/fed) | (LE/fed) | (LE/fed) | (LE/fed) | (000LE) | (000LE) | (000LE) | (000LE) |
| Wheat | 25,970 | 1,024.95 | 1,024.95 | 1,024.95 | 1,024.95 | 26,618 | 26,618 | 26,618 | 26,618 |
| Broad Bean | 5,900 | 1,654.60 | 1,654.60 | 1,654.60 | 1,654.60 | 9,821 | 9,821 | 9,821 | 9,821 |
| Sugarbeet | 5,900 | 1,576.48 | 1,576.48 | 1,576.48 | 1,576.48 | 9,301 | 9,301 | 9,301 | 9,301 |
| Short Berseem | 23,610 | 235.38 | 235.38 | 235.38 | 235.38 | 5,557 | 5,557 | 5,557 | 5,557 |
| Long Berseem | 21,240 | 726.10 | 726.10 | 726.10 | 726.10 | 15,422 | 15,422 | 15,422 | 15,422 |
| Winter Vegetable | 4,720 | 1,109.41 | 1,109.41 | 1,109.41 | 1,109.41 | 5,236 | 5,236 | 5,236 | 5,236 |
| Cotton | 24,640 | 1,308.01 | 1,308.01 | 1,308.01 | 1,308.01 | 32,229 | 32,229 | 32,229 | 32,229 |
| Maize | 12,310 | 526.58 | 526.58 | 526.58 | 526.58 | 6,482 | 6,482 | 6,482 | 6,482 |
| Rice | 40,650 | 326.58 | 326.58 | 326.58 | 326.58 | 13,275 | 13,275 | 13,275 | 13,275 |
| Water Mellon Seed | - | - | - | - | - | - | - | - | - |
| Summer Vegetable | 8,620 | 1,602.41 | 1,602.41 | 1,602.41 | 1,602.41 | 13,813 | 13,813 | 13,813 | 13,813 |
| Citrus | 2,460 | 1,333.89 | 1,333.89 | 1,333.89 | 1,333.89 | 3,281 | 3,281 | 3,281 | 3,281 |
| Sunflower | - | 494.06 | 494.06 | 494.06 | 494.06 | - | - | - | - |
| (Soil improvement Cost) | | 50 | 50 | 50 | 50 | 5,337 | 5,337 | 5,337 | 5,337 |
| Total | 178,020 | | | | | 135,698 | 135,698 | 135,698 | 135,698 |
| (Land Area) | 106,740 | | | | | | | | |

Table N.1.55 Benefit flow of O/M by establishing WUA (Economic Price)

| Year | Establishment of WUAs (+Delivery Canal) | | | No. of WUA (fed base) | Total Net Benefit (,000LE) |
|--------------|---|---------------|-------------------------|---------------------------|----------------------------------|
| | W/O (LE/fed) | W (LE/fed) | Net Benefit (LE/fed) | | |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 12 | 63 | -51 | 0 | 0 |
| 3 | 12 | 63 | -51 | 4,000 | 0 |
| 4 | 12 | 63 | -51 | 14,595 | -204 |
| 5 | 12 | 63 | -51 | 25,190 | -744 |
| 6 | 12 | 63 | -51 | 35,785 | -1,285 |
| 7 | 12 | 63 | -51 | 46,380 | -1,825 |
| 8 | 12 | 63 | -51 | 51,640 | -2,365 |
| 9 | 12 | 63 | -51 | 56,900 | -2,634 |
| 10 | 12 | 63 | -51 | 56,900 | -2,902 |
| 11 | 12 | 63 | -51 | 56,900 | -2,902 |
| 12 | 12 | 63 | -51 | 56,900 | -2,902 |
| 13 | 12 | 63 | -51 | 56,900 | -2,902 |
| 14 | 12 | 63 | -51 | 56,900 | -2,902 |
| 15 | 12 | 63 | -51 | 56,900 | -2,902 |
| 16 | 12 | 63 | -51 | 56,900 | -2,902 |
| 17 | 12 | 63 | -51 | 56,900 | -2,902 |
| 18 | 12 | 63 | -51 | 56,900 | -2,902 |
| 19 | 12 | 63 | -51 | 56,900 | -2,902 |
| 20 | 12 | 63 | -51 | 56,900 | -2,902 |
| 21 | 12 | 63 | -51 | 56,900 | -2,902 |
| 22 | 12 | 63 | -51 | 56,900 | -2,902 |
| 23 | 12 | 63 | -51 | 56,900 | -2,902 |
| 24 | 12 | 63 | -51 | 56,900 | -2,902 |
| 25 | 12 | 63 | -51 | 56,900 | -2,902 |
| 26 | 12 | 63 | -51 | 56,900 | -2,902 |
| 27 | 12 | 63 | -51 | 56,900 | -2,902 |
| 28 | 12 | 63 | -51 | 56,900 | -2,902 |
| 29 | 12 | 63 | -51 | 56,900 | -2,902 |
| 30 | 12 | 63 | -51 | 56,900 | -2,902 |
| Total | 348 | 1,827 | -1,479 | | -69,999 |

Note: The reduction of pumping cost is calculated at the reduction of production cost by crops.

Cost of W/O; 14LE/fed+0.88 (SCF)

Cost of W/P; 72LE/fed+0.88 (SCF)

Table N.1.56 Benefit Flow of the Priority Area (F/S: Economic Price)

| Year | Meska Improvement Implementation | | | | Net Benefit | | | | |
|-------|----------------------------------|------------|--------|-----------------------|---------------------|--------------------------|------------------------|---------|-----------|
| | per year (fed/year) | accumulate | | By Region | | Net Return | | O/M | Total |
| | | (fed) | (fed) | Up+Midstream (fed) | Downstream (fed) | Up+Midstream (,000LE) | Downstream (,000LE) | | |
| 1 | | 0 | 0 | | | 0 | 0 | 0 | 0 |
| 2 | | 0 | 0 | | | 0 | 0 | 0 | 0 |
| 3 | 4,000 | 4,000 | 4,000 | | | 0 | 0 | -204 | 1,674 |
| 4 | 10,595 | 14,595 | 5,460 | 5,135 | 1,878 | 2,170 | 0 | -744 | 6,649 |
| 5 | 10,595 | 25,190 | 5,460 | 5,135 | 5,223 | 5,409 | 0 | -1,285 | 13,526 |
| 6 | 10,595 | 35,785 | 5,460 | 5,135 | 9,402 | 9,393 | 0 | -1,825 | 21,859 |
| 7 | 10,595 | 46,380 | 5,460 | 5,135 | 14,291 | 14,074 | 0 | -2,365 | 31,073 |
| 8 | 5,260 | 51,640 | 2,630 | 2,630 | 19,364 | 17,696 | 0 | -2,634 | 38,170 |
| 9 | 5,260 | 56,900 | 2,630 | 2,630 | 23,108 | 20,797 | 861 | -2,902 | 45,056 |
| 10 | | 56,900 | | | 26,300 | 22,424 | 2,905 | -2,902 | 50,294 |
| 11 | | 56,900 | | | 27,867 | 23,162 | 4,949 | -2,902 | 53,772 |
| 12 | | 56,900 | | | 28,563 | 23,518 | 6,993 | -2,902 | 56,506 |
| 13 | | 56,900 | | | 28,897 | 23,518 | 9,037 | -2,902 | 58,550 |
| 14 | | 56,900 | | 8,540 | 28,897 | 23,518 | 9,898 | -2,902 | 59,411 |
| 15 | | 56,900 | | 8,540 | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 16 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 17 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 18 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 19 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 20 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 21 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 22 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 23 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 24 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 25 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 26 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 27 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 28 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 29 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| 30 | | 56,900 | | | 28,897 | 23,518 | 10,759 | -2,902 | 60,272 |
| Total | 56,900 | 1,429,390 | 31,100 | 25,800 | 676,142 | 538,449 | 196,028 | -69,999 | 1,340,620 |

Note: * is the area for benefit occurring in the downstream reaches of the Priority Area.

** is the benefit in the downstream reaches of the Priority Area.

Table N.1.57 Estimate of Economic Price of the Project Cost in the Priority Area (F/S)

| Item | Economic Prior 1 | | | Economic Prior 2 | | | Grand Total | Allocation * |
|--|------------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|
| | F/C | L/C | Total | F/C | L/C | Total | | |
| | a | b | c=a+b | d=e | e=b*0.88 | f=d+e | | |
| Rahbeen Regulator | 44,346 | 25,314 | 69,660 | 44,346 | 22,276 | 66,622 | 76,900 | 25,633 |
| Bahr Tera Intake Gate | 258 | 102 | 360 | 258 | 90 | 348 | 402 | 402 |
| Absham Regulator | 181 | 90 | 271 | 181 | 79 | 260 | 300 | 300 |
| Hamouli MPS | 22,798 | 6,002 | 28,800 | 22,798 | 5,282 | 28,080 | 32,550 | 32,550 |
| Reembankment of Bahr Tera | 226 | 525 | 751 | 226 | 462 | 688 | 786 | 786 |
| Slope Protection of Bahr Tera | 90 | 209 | 299 | 90 | 184 | 274 | 314 | 314 |
| Delivery Canal(Replace of Intake Gate) | 127 | 45 | 170 | 127 | 38 | 165 | 191 | 191 |
| Delivery Canal(Slope Protection) | 105 | 245 | 350 | 105 | 216 | 321 | 368 | 368 |
| Delivery Canal(Installation of Check Gate) | 1,668 | 532 | 2,200 | 1,668 | 468 | 2,136 | 2,475 | 2,475 |
| Mezaka Improvement | 44,860 | 67,292 | 112,152 | 44,860 | 59,217 | 104,077 | 119,315 | 119,315 |
| Water Management Improvement | 8,416 | 684 | 9,100 | 8,416 | 602 | 9,018 | 9,001 | 9,001 |
| Drainage Improvement | 1,878 | 7,512 | 9,390 | 1,878 | 6,611 | 8,489 | 8,299 | 8,299 |
| Pilot Scheme | 4,983 | 4,850 | 9,833 | 4,983 | 4,268 | 9,251 | 9,673 | 9,673 |
| Demonstration Farm | 35 | 258 | 293 | 35 | 227 | 262 | 298 | 298 |
| Pump, Gate and Apparatus Repair Shop | 195 | 130 | 325 | 195 | 114 | 309 | 357 | 357 |
| Water Conservation Plan | 208 | 23 | 231 | 208 | 20 | 228 | 265 | 265 |
| Total | 129,474 | 113,811 | 243,285 | 129,474 | 100,154 | 229,628 | 284,275 | 213,008 |

Note: 0.88 =Standard Conversion Factor

* The cost of Rahbeen regulator is allocated by the amount of intake water to the Priority Area (50m³/150m³)

Table N.1.58 Cost flow by Project Component at Economic Price (F/S)

(Unit: 000LE)

| Year | Rahaban Barrage | Bahr Tera Intake Gate | Abahan Regulator | Hammou Pans Station | Number of Pans | Number of Pans | Number of Pans | Improvement of Delivery Canal Slope | Check Gate | Improvement of Weirs | Water Mainline System Improvement | Drainage Improvement | Pilot Scheme | Demonstration Farm | Pump, Gate and Appurtenant Repair Shop | Water Conservation | Total | O&M Cost |
|-------|-----------------|-----------------------|------------------|---------------------|----------------|----------------|----------------|-------------------------------------|------------|----------------------|-----------------------------------|----------------------|--------------|--------------------|--|--------------------|---------|----------|
| 1 | 3,845 | | | | 314 | | 76 | | | | | 2,419 | 1,918 | | | | 8,572 | |
| 2 | 6,408 | 402 | | 6,510 | 472 | | 115 | | | | | 2,418 | 959 | | | | 17,284 | |
| 3 | 8,972 | | 300 | 9,765 | | 94 | 74 | 485 | 9,545 | 3,147 | 3,350 | 2,418 | 3,350 | | | | 38,169 | 3 |
| 4 | 6,408 | | | 13,020 | | 126 | 74 | 495 | 22,670 | 3,672 | 2,398 | 2,418 | 2,398 | | | | 51,281 | 19 |
| 5 | | | | 3,255 | | 94 | 74 | 495 | 22,670 | 1,993 | 959 | 2,418 | 959 | 357 | | | 29,897 | 114 |
| 6 | | | | | | | 73 | 485 | 22,670 | 1,154 | | | | 75 | 265 | | 24,732 | 231 |
| 7 | | | | | | | 73 | 485 | 22,670 | 525 | | | | 75 | | | 23,838 | 305 |
| 8 | | | | | | | | | 9,545 | | | | | 74 | | | 9,619 | 330 |
| 9 | | | | | | | | | 9,545 | | | | | 74 | | | 9,619 | 332 |
| 10 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| 11 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| 12 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| 13 | | | | | | | | | 668 | | | | | | | | 668 | 354 |
| 14 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 15 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 16 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 17 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 18 | | | | | | | | | 878 | | | | | | | | 878 | 354 |
| 19 | | | | | | | | | 878 | | | | | | | | 878 | 354 |
| 20 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| 21 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| 22 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| 23 | | | | | | | | | 668 | | | | | | | | 668 | 354 |
| 24 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 25 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 26 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 27 | | | | | | | | | 1,769 | | | | | | | | 1,769 | 354 |
| 28 | | | | | | | | | 878 | | | | | | | | 878 | 354 |
| 29 | | | | | | | | | 878 | | | | | | | | 878 | 354 |
| 30 | | | | | | | | | 0 | | | | | | | | 0 | 354 |
| Total | 25,633 | 402 | 300 | 32,550 | 785 | 314 | 191 | 368 | 2,476 | 130,315 | 10,491 | 9,873 | 9,990 | 298 | 357 | 265 | 232,008 | 8,794 |

Table N.1.59 Summary of Economic Analysis in the Priority Area (Estimate of EIRR)

| Year | Cost (,000LE) | | Benefit (,000LE) | Difference (,000LE) | Discount Rate (17.2%) | Net Present Value (LE) | | |
|--------------|----------------|--------------|------------------|---------------------|-----------------------|------------------------|----------------|------------|
| | Investment | O&M | | | | Cost | Benefit | Difference |
| 1 | 8,572 | | 8,572 | -8,572 | 0.8532423 | 7,314 | 0 | -7,314 |
| 2 | 17,284 | | 17,284 | -17,284 | 0.7280225 | 12,583 | 0 | -12,583 |
| 3 | 38,166 | 3 | 38,169 | -38,169 | 0.6211796 | 23,710 | 0 | -23,710 |
| 4 | 51,281 | 19 | 51,300 | -49,626 | 0.5300167 | 27,190 | 887 | -26,303 |
| 5 | 29,897 | 114 | 30,011 | -23,362 | 0.4522327 | 13,572 | 3,007 | -10,565 |
| 6 | 24,732 | 231 | 24,963 | -11,437 | 0.3858641 | 9,632 | 5,219 | -4,413 |
| 7 | 23,838 | 305 | 24,143 | -2,284 | 0.3292355 | 7,949 | 7,197 | -752 |
| 8 | 9,619 | 336 | 9,955 | 21,118 | 0.2809177 | 2,797 | 8,729 | 5,932 |
| 9 | 9,619 | 352 | 9,971 | 28,199 | 0.2396909 | 2,390 | 9,149 | 6,759 |
| 10 | 0 | 354 | 354 | 44,702 | 0.2045144 | 72 | 9,215 | 9,143 |
| 11 | 0 | 354 | 354 | 49,940 | 0.1745003 | 62 | 8,776 | 8,714 |
| 12 | 0 | 354 | 354 | 53,418 | 0.1488911 | 53 | 8,006 | 7,953 |
| 13 | 668 | 354 | 1,022 | 55,484 | 0.1270402 | 130 | 7,179 | 7,049 |
| 14 | 1,769 | 354 | 2,123 | 56,427 | 0.1083960 | 230 | 6,347 | 6,117 |
| 15 | 1,769 | 354 | 2,123 | 57,288 | 0.0924881 | 196 | 5,495 | 5,299 |
| 16 | 1,769 | 354 | 2,123 | 58,149 | 0.0789148 | 168 | 4,756 | 4,588 |
| 17 | 1,769 | 354 | 2,123 | 58,149 | 0.0673334 | 143 | 4,058 | 3,915 |
| 18 | 878 | 354 | 1,232 | 59,040 | 0.0574517 | 71 | 3,463 | 3,392 |
| 19 | 878 | 354 | 1,232 | 59,040 | 0.0490202 | 60 | 2,955 | 2,895 |
| 20 | 0 | 354 | 354 | 59,918 | 0.0413261 | 15 | 2,521 | 2,506 |
| 21 | 0 | 354 | 354 | 59,918 | 0.0356878 | 13 | 2,151 | 2,138 |
| 22 | 0 | 354 | 354 | 59,918 | 0.0304504 | 11 | 1,835 | 1,824 |
| 23 | 668 | 354 | 1,022 | 59,250 | 0.0259815 | 27 | 1,566 | 1,539 |
| 24 | 1,769 | 354 | 2,123 | 58,149 | 0.0221686 | 47 | 1,336 | 1,289 |
| 25 | 1,769 | 354 | 2,123 | 58,149 | 0.0189151 | 40 | 1,140 | 1,100 |
| 26 | 1,769 | 354 | 2,123 | 58,149 | 0.0161392 | 34 | 973 | 939 |
| 27 | 1,769 | 354 | 2,123 | 58,149 | 0.0137707 | 29 | 830 | 801 |
| 28 | 878 | 354 | 1,232 | 59,040 | 0.0117497 | 14 | 708 | 694 |
| 29 | 878 | 354 | 1,232 | 59,040 | 0.0100253 | 12 | 604 | 592 |
| 30 | 0 | 354 | 354 | 59,918 | 0.0085540 | 3 | 516 | 513 |
| Total | 232,008 | 8,794 | 240,802 | 1,340,620 | | 108,567 | 108,618 | 51 |

Table 1.1.60 Estimate of Financial Price of the Project Cost in the Priority Area (F/S)

| Item | Direct Cost | | Administration 11% | | Sub-total | Physical Contingency 5% | Price Escalation Cont. | | Total | Allocation | Remark |
|--|----------------|----------------|--------------------|---------------|----------------|-------------------------|------------------------|---------------|----------------|----------------|-------------------------------------|
| | F/C | L/C | Total | | | | F/C | L/C | | | |
| Rehbeen Regulator | 44,346 | 25,314 | 69,660 | 7,663 | 77,323 | 3,866 | 2,872 | 3,297 | 87,358 | 29,119 | 50m ³ /150m ³ |
| Bahr Tera Intake Gate | 258 | 102 | 360 | 40 | 400 | 20 | 11 | 10 | 441 | 441 | |
| Abahan Regulator | 181 | 90 | 271 | 30 | 301 | 15 | 13 | 13 | 342 | 342 | |
| Hammou MPS | 22,798 | 6,002 | 28,800 | 3,168 | 31,968 | 1,598 | 1,941 | 1,013 | 36,520 | 36,520 | |
| Reembankment of Bahr Tera | 226 | 525 | 751 | 83 | 834 | 42 | 7 | 40 | 923 | 923 | |
| Slope Protection of Bahr Tera | 90 | 209 | 299 | 33 | 332 | 17 | 10 | 42 | 401 | 401 | |
| Delivery Canal(Replacement of Intake Gate) | 127 | 43 | 170 | 19 | 189 | 9 | 4 | 3 | 205 | 205 | |
| Delivery Canal(Slope Protection) | 105 | 245 | 350 | 39 | 389 | 19 | 15 | 62 | 485 | 485 | |
| Delivery Canal(Installation of Check Gate) | 1,668 | 532 | 2,200 | 242 | 2,442 | 122 | 225 | 135 | 2,924 | 2,924 | |
| Meska Improvement | 44,860 | 67,292 | 112,152 | 12,337 | 124,489 | 6,224 | 7,179 | 20,283 | 158,175 | 158,175 | |
| Water Management Improvement | 8,416 | 884 | 9,300 | 1,001 | 10,301 | 505 | 935 | 156 | 11,697 | 11,697 | |
| Drainage Improvement | 1,878 | 7,512 | 9,390 | 1,033 | 10,423 | 521 | 109 | 914 | 11,967 | 11,967 | |
| Pilot Scheme | 4,083 | 4,850 | 8,933 | 983 | 9,916 | 496 | 296 | 698 | 11,406 | 11,406 | |
| Demonstration Farm | 35 | 258 | 293 | 32 | 325 | 16 | 7 | 104 | 452 | 452 | |
| Pump, Gate and Apparatus Repair Shop | 195 | 130 | 325 | 36 | 361 | 18 | 26 | 33 | 438 | 438 | |
| Water Conservation Plan | 208 | 23 | 231 | 25 | 256 | 13 | 26 | 33 | 328 | 328 | |
| Total | 129,474 | 113,811 | 243,285 | 26,764 | 270,049 | 13,501 | 13,676 | 26,836 | 324,962 | 265,823 | |

Table N.1.61 Cost flow by Project Component at Financial Price (F/S)

| Year | Rahbeen Barrage | | | Behr Tera Abelian | | | Himod | | | Improvement of Delivery Canal | | | Improvement of Maska | | | Water Management System Improvement | | | Pilot Scheme | Demonstration Farm | Pumps, Gens. and Apparatus | Water Conservation | Total | O&M Cost | | | |
|-------|-----------------|-----------|--------------|-------------------|--------------|-----------|------------|-------------|-------|-------------------------------|-------------|-------------|----------------------|-------------|-------------|-------------------------------------|-------------|-------------|--------------|--------------------|----------------------------|--------------------|-------|----------|----------|--------|-----|
| | Intake Gate | Regulator | Stop Station | Regulator | Stop Station | Regulator | Regulation | Replacement | Slope | Replacement | Replacement | Replacement | Replacement | Replacement | Replacement | Replacement | Replacement | Replacement | | | | | | | | | |
| 1 | 4,368 | | | | | | 82 | | | | | | | | | | | | | | | | | 10,092 | | | |
| 2 | 7,280 | 441 | | 7,304 | | | 123 | | | | | | | | | | | | | | | | | | 19,835 | | |
| 3 | 10,191 | | | 10,956 | | | 120 | | | | | | | | | | | | | | | | | | | 45,436 | 4 |
| 4 | 7,280 | | | 14,908 | | | 181 | | | | | | | | | | | | | | | | | | | 62,721 | 20 |
| 5 | | | | 3,652 | | | 120 | | | | | | | | | | | | | | | | | | | 36,307 | 116 |
| 6 | | | | | | | 97 | | | | | | | | | | | | | | | | | | | 32,463 | 234 |
| 7 | | | | | | | 97 | | | | | | | | | | | | | | | | | | | 31,432 | 308 |
| 8 | | | | | | | 97 | | | | | | | | | | | | | | | | | | | 12,768 | 340 |
| 9 | | | | | | | 12,654 | | | | | | | | | | | | | | | | | | | 12,767 | 350 |
| 10 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 358 |
| 11 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 353 |
| 12 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 358 |
| 13 | | | | | | | 760 | | | | | | | | | | | | | | | | | | | 760 | 358 |
| 14 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 15 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 16 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 17 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 18 | | | | | | | 999 | | | | | | | | | | | | | | | | | | | 999 | 358 |
| 19 | | | | | | | 999 | | | | | | | | | | | | | | | | | | | 999 | 358 |
| 20 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 353 |
| 21 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 358 |
| 22 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 358 |
| 23 | | | | | | | 760 | | | | | | | | | | | | | | | | | | | 760 | 358 |
| 24 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 25 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 26 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 27 | | | | | | | 2,013 | | | | | | | | | | | | | | | | | | | 2,013 | 358 |
| 28 | | | | | | | 999 | | | | | | | | | | | | | | | | | | | 999 | 358 |
| 29 | | | | | | | 999 | | | | | | | | | | | | | | | | | | | 999 | 358 |
| 30 | | | | | | | 0 | | | | | | | | | | | | | | | | | | | 0 | 358 |
| Total | 29,119 | 441 | | 36,520 | | | 923 | 401 | | | | 2,924 | 179,795 | 11,937 | 11,937 | 11,406 | 452 | 438 | | | | 328 | | | 2,87,443 | 8,896 | |

Table N.1.62 Summary of Financial Analysis in the Priority Area (Estimate of FIRR)

FIRR: 14.1%

| Year | Investment | Cost (,000LE) | | Difference | Discount Rate | Benefit | Difference | Net Present Value (,000LE) | |
|-------|------------|---------------|------------|------------|---------------|-----------|------------|----------------------------|---------|
| | | O&M | Total Cost | | | | | Cost | Benefit |
| 1 | 10,092 | | 10,092 | -10,092 | 0.8763885 | | | 8,845 | 0 |
| 2 | 19,835 | | 19,835 | -19,835 | 0.7680568 | | | 15,234 | 0 |
| 3 | 45,438 | 4 | 45,442 | -45,442 | 0.6731161 | | | 30,588 | 0 |
| 4 | 62,721 | 20 | 62,741 | -61,490 | 0.5899112 | 1,251 | | 37,012 | 738 |
| 5 | 38,307 | 116 | 38,423 | -33,049 | 0.5169914 | 5,374 | | 19,864 | 2,778 |
| 6 | 32,463 | 234 | 32,697 | -21,060 | 0.4530853 | 11,637 | | 14,815 | 5,273 |
| 7 | 31,432 | 308 | 31,740 | -12,206 | 0.3970787 | 19,534 | | 12,603 | 7,757 |
| 8 | 12,768 | 340 | 13,108 | 15,309 | 0.3479952 | 28,417 | | 4,562 | 9,889 |
| 9 | 12,767 | 356 | 13,123 | 22,545 | 0.3049790 | 35,668 | | 4,002 | 10,878 |
| 10 | 0 | 358 | 358 | 42,401 | 0.2672801 | 42,759 | | 96 | 11,429 |
| 11 | 0 | 358 | 358 | 48,478 | 0.2342412 | 48,836 | | 84 | 11,355 |
| 12 | 0 | 358 | 358 | 52,576 | 0.2052863 | 52,934 | | 73 | 10,867 |
| 13 | 760 | 358 | 1,118 | 55,079 | 0.1799105 | 56,197 | | 201 | 10,110 |
| 14 | 2013 | 358 | 2,371 | 56,312 | 0.1576715 | 58,683 | | 374 | 9,253 |
| 15 | 2013 | 358 | 2,371 | 57,359 | 0.1381815 | 59,730 | | 328 | 8,254 |
| 16 | 2013 | 358 | 2,371 | 58,406 | 0.1211007 | 60,777 | | 287 | 7,360 |
| 17 | 2013 | 358 | 2,371 | 58,406 | 0.1061312 | 60,777 | | 252 | 6,450 |
| 18 | 999 | 358 | 1,357 | 59,420 | 0.0930122 | 60,777 | | 126 | 5,653 |
| 19 | 999 | 358 | 1,357 | 59,420 | 0.0815148 | 60,777 | | 111 | 4,954 |
| 20 | 0 | 358 | 358 | 60,419 | 0.0714387 | 60,777 | | 26 | 4,342 |
| 21 | 0 | 358 | 358 | 60,419 | 0.0626080 | 60,777 | | 22 | 3,805 |
| 22 | 0 | 358 | 358 | 60,419 | 0.0548689 | 60,777 | | 20 | 3,335 |
| 23 | 760 | 358 | 1,118 | 59,659 | 0.0480865 | 60,777 | | 54 | 2,869 |
| 24 | 2013 | 358 | 2,371 | 58,406 | 0.0421425 | 60,777 | | 100 | 2,561 |
| 25 | 2013 | 358 | 2,371 | 58,406 | 0.0369332 | 60,777 | | 88 | 2,245 |
| 26 | 2013 | 358 | 2,371 | 58,406 | 0.0323678 | 60,777 | | 77 | 1,967 |
| 27 | 2013 | 358 | 2,371 | 58,406 | 0.0283668 | 60,777 | | 67 | 1,724 |
| 28 | 999 | 358 | 1,357 | 59,420 | 0.0248603 | 60,777 | | 34 | 1,511 |
| 29 | 999 | 358 | 1,357 | 59,420 | 0.0217873 | 60,777 | | 30 | 1,324 |
| 30 | 0 | 358 | 358 | 60,419 | 0.0190941 | 60,777 | | 7 | 1,153 |
| Total | 287,443 | 8,896 | 296,339 | 1,332,675 | | 1,332,675 | 1,036,336 | 149,982 | 149,979 |

Table N.2.1 Benefit Flow of the Project in the Study Area (M/P) at Financial Price

| Year | per year (fed/year) | Meska Improvement Implementation | | | Net Benefit | | | O/M (,000LE) | Total (,000LE) |
|--------------|------------------------|----------------------------------|--------------------|---------------------|----------------------|-----------------------|------------------------|-----------------|-------------------|
| | | By Region | | | Net Return | | | | |
| | | Upstream (fed) | Midstream (fed) | Downstream (fed) | Upstream (,000LE) | Midstream (,000LE) | Downstream (,000LE) | | |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3 | 4,000 | 4,000 | 4,000 | 4,000 | 0 | 0 | 0 | 0 | |
| 4 | 10,595 | 14,595 | 10,595 | 10,595 | 0 | 2,289 | 0 | -232 | |
| 5 | 10,595 | 25,190 | 10,595 | 10,595 | 0 | 9,331 | 0 | -847 | |
| 6 | 44,669 | 69,859 | 34,074 | 10,595 | 0 | 18,639 | 0 | -1,461 | |
| 7 | 44,669 | 114,528 | 34,074 | 10,595 | 12,503 | 29,673 | 0 | -4,052 | |
| 8 | 44,669 | 159,197 | 39,409 | 5,260 | 30,652 | 41,786 | 0 | -6,643 | |
| 9 | 44,669 | 203,866 | 39,409 | 5,260 | 54,501 | 50,847 | 503 | -9,233 | |
| 10 | 44,669 | 248,535 | 20,434 | 24,235 | 82,952 | 58,600 | 1,861 | -11,824 | |
| 11 | 44,669 | 293,204 | 44,669 | 44,669 | 105,027 | 76,344 | 3,219 | -14,415 | |
| 12 | 44,669 | 337,873 | 44,669 | 44,669 | 117,040 | 109,558 | 9,004 | -17,006 | |
| 13 | 44,669 | 382,542 | 44,669 | 44,669 | 123,583 | 150,860 | 14,789 | -19,597 | |
| 14 | 44,669 | 427,211 | 8,758 | 35,911 | 125,811 | 198,584 | 20,574 | -22,187 | |
| 15 | 44,669 | 471,880 | 44,669 | 44,669 | 125,811 | 229,104 | 42,919 | -24,778 | |
| 16 | 44,669 | 516,549 | 44,669 | 44,669 | 125,811 | 245,813 | 75,754 | -27,369 | |
| 17 | 44,669 | 561,218 | 44,669 | 44,669 | 125,811 | 254,546 | 114,468 | -29,960 | |
| 18 | 44,669 | 605,887 | 44,669 | 44,669 | 125,811 | 255,980 | 158,570 | -32,551 | |
| 19 | 44,668 | 650,555 | 44,668 | 44,668 | 125,811 | 255,980 | 203,730 | -35,141 | |
| 20 | 44,668 | 695,223 | 44,668 | 44,668 | 125,811 | 255,980 | 244,312 | -37,732 | |
| 21 | | | | | 125,811 | 255,980 | 283,736 | -40,323 | |
| 22 | | | | | 125,811 | 255,980 | 302,500 | -40,323 | |
| 23 | | | | | 125,811 | 255,980 | 313,255 | -40,323 | |
| 24 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| 25 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| 26 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| 27 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| 28 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| 29 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| 30 | | | | | 125,811 | 255,980 | 318,649 | -40,323 | |
| Total | 695,223 | 167,400 | 223,900 | 303,923 | 2,665,045 | 4,803,714 | 4,019,737 | -698,258 | 10,790,238 |

Note: Benefit of the downstream area includes the increase of cropping intensity obtained by implementation of Meska improvement in the up and midstream area. This benefit starts occurring from year 9 and from year 14, increase of unit yield and crop diversification start by implementation of Meska in the downstream area.

Table N.2.2 Project Cost in the Study Area (M/P) at Faunacial Price

| Item | Cost | Administration & Consultant Fee (11%) | Sub-total (1) | Physical Contingency (1)*5% | Price Escalation Contingency (1)*13% | Total |
|--|-----------|---|------------------|-----------------------------------|--|-----------|
| | | | | | | |
| Major Facilities | | | | | | |
| Monofy Regulator | 20,630 | 2,269 | 22,899 | 1,145 | 2,977 | 27,021 |
| Rahabeen Regulator | 69,660 | 7,663 | 77,323 | 3,866 | 10,052 | 91,241 |
| Bahr Tera Intake Gate | 360 | 40 | 400 | 20 | 52 | 472 |
| Abshan Regulator | 271 | 30 | 301 | 15 | 39 | 355 |
| Hamoul MPS | 28,800 | 3,168 | 31,968 | 1,598 | 4,156 | 37,722 |
| Rehabilitation of Bahr Tera Canal | 1,050 | 116 | 1,166 | 58 | 152 | 1,376 |
| Demara Regulator | 39,000 | 4,290 | 43,290 | 2,165 | 5,628 | 51,083 |
| Slope Protection | 16,128 | 1,774 | 17,902 | 895 | 2,327 | 21,124 |
| Weed Control | 6,800 | 748 | 7,548 | 377 | 981 | 8,906 |
| Installation of Check Gate | 12,328 | 1,356 | 13,684 | 684 | 1,779 | 16,147 |
| Slope Protection | 34,320 | 3,775 | 38,095 | 1,905 | 4,952 | 44,952 |
| Repair of Gates | 1,062 | 117 | 1,179 | 59 | 153 | 1,391 |
| Replace of Intake Gate | 6,160 | 678 | 6,838 | 342 | 889 | 8,069 |
| Meska Improvement | 1,369,589 | 150,654 | 1,520,243 | 76,013 | 197,632 | 1,793,888 |
| Water Management Improvement | 5,700 | 627 | 6,327 | 316 | 823 | 7,466 |
| Drainage Improvement tile drainage | 290,986 | 32,007 | 322,993 | 16,151 | 41,989 | 381,133 |
| Pilot Scheme | 8,933 | 983 | 9,916 | 498 | 1,289 | 11,701 |
| Demonstration Farm | 3,738 | 411 | 4,149 | 207 | 539 | 4,895 |
| Water Conservation | 924 | 102 | 1,026 | 51 | 133 | 1,210 |
| Pump, Gate and Apparatus Repair Shop | 1,300 | 143 | 1,443 | 72 | 188 | 1,703 |
| Sub-total (1) | 1,917,739 | | | | | |
| Administration & Consultant Fee 11% of (1) | 210,951 | | | | | |
| Sub-total (2) | 2,128,690 | | | | | |
| Physical Contingency 5% of (2) | 106,435 | | | | | |
| Price Escalation Contingency 13% of (2) | 276,730 | | | | | |
| Grand Total | 2,511,855 | 210,951 | 2,128,690 | 106,435 | 276,730 | 2,511,855 |

Table N2.3 Cost Flow of the Project in the Study Area (M/P) (Financial Price)

| Year | Investment | | Operating Costs | | Maintenance | | Management | | Materials | | Wages | | Overhead | | Profit | | Discounted Cash Flow | | Net Present Value | | Internal Rate of Return | | Unit Cost (M/P) | |
|-------|------------|--------|-----------------|--------|-------------|--------|------------|--------|-----------|--------|---------|--------|-----------|--------|---------|--------|----------------------|--------|-------------------|--------|-------------------------|---------|-----------------|-----------|
| | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | Initial | Annual | | Initial |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 17,413 | 340 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 24,381 | 0 | 271 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 17,415 | 0 | 0 | 11,320 | 314 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 2,880 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 3,093 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 4,126 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 5,188 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 5,158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 2,082 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 20,620 | 69,680 | 380 | 271 | 22,800 | 1,020 | 29,000 | 18,124 | 0,000 | 12,320 | 1,002 | 5,100 | 1,349,507 | 3,720 | 210,916 | 8,923 | 7,728 | 924 | 1,300 | 50,997 | 150,639 | 115,401 | 300,081 | 2,724,142 |

Note: Present Value Estimation Contingency of 13% is estimated as of average % of Present Estimation Contingency of the Feasibility Study.

Table N.2.4 Summary of Financial Analysis of the Project in the study Area (M/P)

FIRR: 14.9%

| Year | Cost (000 LE) | | | Benefit (000 LE) | Difference (000 LE) | Discount Rate (14.9%) | Net Present Value (000 LE) | | |
|-------|---------------|--------|------------|------------------|---------------------|-----------------------|----------------------------|---------|------------|
| | Investment | O&M | Total Cost | | | | Cost | Benefit | Difference |
| 1 | 56,129 | | 56,129 | | -56,129 | 0.87041 | 48,855 | 0 | -48,855 |
| 2 | 73,351 | 20 | 73,371 | | -73,371 | 0.75762 | 55,587 | 0 | -55,587 |
| 3 | 98,850 | 45 | 98,895 | | -98,895 | 0.65944 | 65,215 | 0 | -65,215 |
| 4 | 111,027 | 75 | 111,102 | 2,057 | -109,045 | 0.57398 | 63,770 | 1,181 | -62,589 |
| 5 | 79,817 | 134 | 79,951 | 8,484 | -71,467 | 0.49960 | 39,944 | 4,239 | -35,705 |
| 6 | 175,111 | 218 | 175,329 | 17,178 | -158,151 | 0.43486 | 76,244 | 7,470 | -68,774 |
| 7 | 178,023 | 355 | 178,378 | 38,124 | -140,254 | 0.37850 | 67,516 | 14,430 | -53,086 |
| 8 | 185,199 | 464 | 185,663 | 65,795 | -119,868 | 0.32945 | 61,167 | 21,676 | -39,491 |
| 9 | 181,296 | 555 | 181,851 | 96,618 | -85,233 | 0.28676 | 52,148 | 27,706 | -24,442 |
| 10 | 169,581 | 630 | 170,211 | 131,589 | -38,622 | 0.24960 | 42,485 | 32,845 | -9,640 |
| 11 | 121,820 | 1,325 | 123,145 | 170,175 | 47,030 | 0.21725 | 26,753 | 36,971 | 10,218 |
| 12 | 121,759 | 1,380 | 123,139 | 218,596 | 95,457 | 0.18910 | 23,286 | 41,337 | 18,051 |
| 13 | 122,656 | 1,434 | 124,090 | 269,635 | 145,545 | 0.16460 | 20,425 | 44,382 | 23,957 |
| 14 | 124,133 | 1,489 | 125,622 | 322,782 | 197,160 | 0.14327 | 17,998 | 46,245 | 28,247 |
| 15 | 124,130 | 1,543 | 125,673 | 373,056 | 247,383 | 0.12470 | 15,671 | 46,520 | 30,849 |
| 16 | 128,940 | 1,598 | 130,538 | 420,009 | 289,471 | 0.10854 | 14,169 | 45,588 | 31,419 |
| 17 | 128,940 | 1,620 | 130,560 | 464,865 | 334,305 | 0.09447 | 12,334 | 43,916 | 31,582 |
| 18 | 128,940 | 1,642 | 130,582 | 507,810 | 377,228 | 0.08223 | 10,738 | 41,757 | 31,019 |
| 19 | 128,937 | 1,664 | 130,601 | 550,380 | 419,779 | 0.07158 | 9,348 | 39,396 | 30,048 |
| 20 | 128,937 | 1,687 | 130,624 | 588,371 | 457,747 | 0.06230 | 8,138 | 36,656 | 28,518 |
| 21 | 10,014 | 1,709 | 11,723 | 625,204 | 613,481 | 0.05423 | 636 | 33,905 | 33,269 |
| 22 | 10,014 | 1,709 | 11,723 | 643,968 | 632,245 | 0.04720 | 553 | 30,395 | 29,842 |
| 23 | 10,911 | 1,709 | 12,620 | 654,723 | 642,103 | 0.04108 | 518 | 26,896 | 26,378 |
| 24 | 12,390 | 1,709 | 14,099 | 660,117 | 646,018 | 0.03576 | 504 | 23,606 | 23,102 |
| 25 | 12,390 | 1,709 | 14,099 | 660,117 | 646,018 | 0.03113 | 439 | 20,549 | 20,110 |
| 26 | 20,030 | 1,709 | 21,739 | 660,117 | 638,378 | 0.02709 | 589 | 17,883 | 17,294 |
| 27 | 20,030 | 1,709 | 21,739 | 660,117 | 638,378 | 0.02358 | 513 | 15,566 | 15,053 |
| 28 | 20,030 | 1,709 | 21,739 | 660,117 | 638,378 | 0.02053 | 446 | 13,552 | 13,106 |
| 29 | 20,030 | 1,709 | 21,739 | 660,117 | 638,378 | 0.01787 | 388 | 11,796 | 11,408 |
| 30 | 20,030 | 1,709 | 21,739 | 660,117 | 638,378 | 0.01555 | 338 | 10,265 | 9,927 |
| Total | 2,723,445 | 34,968 | 2,758,413 | 10,790,238 | 8,031,825 | | 736,715 | 736,728 | 13 |

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