

**Table s1:** General Parameter: Urban Agriculture vs Conventional Agriculture

| Cultivation Area and Potential Yields   |              |                          |              |           |
|---|--------------|--------------------------|--------------|-----------|
| Variable                                | Urban Garden | Conventional Agriculture | Reference    | Unit      |
| Cultivated area per crop                | 1 ha         | 1 ha                     | 1 ha         | ha        |
| Potential Yield Tomato 'Rio Grande'     | 65,000       | 65,000                   | 65,000       | kg/ha     |
| Potential Yield Swiss Chard             | 52,000       | 52,000                   | 52,000       | kg/ha     |
| Potential Yield Spinach                 | 28,000       | 28,000                   | 28,000       | kg/ha     |
| Potential Yield Lettuce                 | 35,000       | 35,000                   | 35,000       | kg/ha     |
| Actual Yields and Planting Density      |              |                          |              |           |
| Variable                                | Urban Garden | Conventional Agriculture | Reference    | Unit      |
| Yield Tomato 'Rio Grande'               | 40,111.11    | 61,600                   | 39,800       | kg/ha     |
| Yield Swiss Chard                       | 47,155.56    | 34,208                   | 35,000       | kg/ha     |
| Yield Spinach                           | 20,755.56    | 17,860                   | 20,000       | kg/ha     |
| Yield Lettuce                           | 21,918.52    | 21,100                   | 32,500       | kg/ha     |
| Planting Density Tomato                 | 20,408       | 25,000                   | 31,250       | plants/ha |
| Planting Density Swiss Chard            | 20,408       | 65,000                   | 83,000       | plants/ha |
| Planting Density Spinach                | 20,408       | 180,000                  | 185,000      | plants/ha |
| Planting Density Lettuce                | 20,408       | 150,000                  | 166,000      | plants/ha |
| Water Utilization                       |              |                          |              |           |
| Variable                                | Urban Garden | Conventional Agriculture | Reference    | Unit      |
| Water Use Tomato                        | 2,755        | 6,600                    | 6,371        | m³/ha     |
| Water Use Swiss Chard                   | 1,286        | 4,800                    | 4,250        | m³/ha     |
| Water Use Spinach                       | 1,286        | 3,900                    | 3,280        | m³/ha     |
| Water Use Lettuce                       | 1,082        | 3,500                    | 3,750        | m³/ha     |
| Water Price Stratum 1                   | \$22.98      | \$22.98                  | \$22.98      | \$/m³     |
| Yields with 80% Water Application       |              |                          |              |           |
| Variable                                | Urban Garden | Conventional Agriculture | Reference    | Unit      |
| Yield Tomato 'Rio Grande' 80% Water     | 33,091.67    | 50,820.00                | 32,835.00    | kg/ha     |
| Yield Swiss Chard 80% Water             | 38,903.34    | 28,221.60                | 28,875.00    | kg/ha     |
| Yield Spinach 80% Water                 | 17,123.34    | 14,734.50                | 16,500.00    | kg/ha     |
| Yield Lettuce 80% Water                 | 18,082.78    | 17,407.50                | 26,812.50    | kg/ha     |
| Cost with 80% Water Tomato 'Rio Grande' | \$50,647.92  | \$121,334.40             | \$117,124.46 | \$/ha     |
| Cost with 80% Water Swiss Chard         | \$23,641.82  | \$88,243.20              | \$78,132.00  | \$/ha     |
| Cost with 80% Water Spinach             | \$23,641.82  | \$71,697.60              | \$60,299.52  | \$/ha     |
| Cost with 80% Water Lettuce             | \$19,891.49  | \$64,344.00              | \$68,940.00  | \$/ha     |
| Water Volume per Plant                  |              |                          |              |           |
| Variable                                | Urban Garden | Conventional Agriculture | Reference    | Unit      |
| Water Volume per Tomato Plant           | 135          | 264                      | 204          | l/plant   |
| Water Volume per Swiss Chard Plant      | 63           | 74                       | 51           | l/plant   |
| Water Volume per Spinach Plant          | 63           | 22                       | 18           | l/plant   |
| Water Volume per Lettuce Plant          | 53           | 23                       | 23           | l/plant   |
| Total Water Cost                        |              |                          |              |           |

| Variable                     | Urban Garden | Conventional Agriculture | Reference    | Unit  |
|------------------------------|--------------|--------------------------|--------------|-------|
| Total Water Cost Tomato      | \$63,309.90  | \$151,668.00             | \$146,405.58 | \$/ha |
| Total Water Cost Swiss Chard | \$29,552.28  | \$110,304.00             | \$97,665.00  | \$/ha |
| Total Water Cost Spinach     | \$29,552.28  | \$89,622.00              | \$75,374.40  | \$/ha |
| Total Water Cost Lettuce     | \$24,864.36  | \$80,430.00              | \$86,175.00  | \$/ha |

#### Fertilizer Application

| Variable                                  | Urban Garden | Conventional Agriculture | Reference | Unit  |
|---|--------------|--------------------------|-----------|-------|
| Vermicompost/Fertilizer Tomato            | 10,204       | 772                      | 850       | kg/ha |
| Vermicompost/Fertilizer Swiss Chard       | 10,204       | 615                      | 410       | kg/ha |
| Vermicompost/Fertilizer Spinach           | 10,204       | 490                      | 320       | kg/ha |
| Vermicompost/Fertilizer Lettuce           | 10,204       | 415                      | 290       | kg/ha |
| Price Vermicompost/Fertilizer Tomato      | \$7.00       | \$23.41                  | \$13.77   | \$/kg |
| Price Vermicompost/Fertilizer Swiss Chard | \$7.00       | \$23.39                  | \$13.77   | \$/kg |
| Price Vermicompost/Fertilizer Spinach     | \$7.00       | \$23.81                  | \$13.77   | \$/kg |
| Price Vermicompost/Fertilizer Lettuce     | \$7.00       | \$23.87                  | \$13.77   | \$/kg |

#### Total Fertilizer Cost

| Variable  | Urban Garden | Conventional Agriculture | Reference   | Unit  |
|---|--------------|--------------------------|-------------|-------|
| Total Price Vermicompost/Fertilizer Tomato      | \$71,428.56  | \$18,072.52              | \$11,704.50 | \$/ha |
| Total Price Vermicompost/Fertilizer Swiss Chard | \$71,428.56  | \$14,384.85              | \$5,645.70  | \$/ha |
| Total Price Vermicompost/Fertilizer Spinach     | \$71,428.56  | \$11,666.90              | \$4,406.40  | \$/ha |
| Total Price Vermicompost/Fertilizer Lettuce     | \$71,428.56  | \$9,906.05               | \$3,993.30  | \$/ha |

#### Nutrient Composition - Tomato

| Variable                                   | Urban Garden | Conventional Agriculture | Reference | Unit  |
|--|--------------|--------------------------|-----------|-------|
| N Tomato                                   | 166.26       | 200                      | 250       | kg/ha |
| P Tomato                                   | 12.24        | 100                      | 120       | kg/ha |
| K Tomato                                   | 10.2         | 250                      | 280       | kg/ha |
| Ca Tomato                                  | 120.36       | 90                       | 100       | kg/ha |
| Mg Tomato                                  | 67.32        | 50                       | 60        | kg/ha |
| S Tomato                                   | 30.6         | 80                       | 70        | kg/ha |
| Organic Matter and Other Components Tomato | 9793.02      | 2.46                     | 3         | kg/ha |

#### Nutrient Composition - Swiss Chard

| Variable  | Urban Garden | Conventional Agriculture | Reference | Unit  |
|---|--------------|--------------------------|-----------|-------|
| N Swiss Chard                                   | 166.26       | 150                      | 160       | kg/ha |
| P Swiss Chard                                   | 12.24        | 65                       | 70        | kg/ha |
| K Swiss Chard                                   | 10.2         | 250                      | 260       | kg/ha |
| Ca Swiss Chard                                  | 120.36       | 80                       | 85        | kg/ha |
| Mg Swiss Chard                                  | 67.32        | 40                       | 45        | kg/ha |
| S Swiss Chard                                   | 30.6         | 30                       | 35        | kg/ha |
| Organic Matter and Other Components Swiss Chard | 9793.02      | 0.18                     | 0.2       | kg/ha |

#### Nutrient Composition - Spinach

| Variable | Urban Garden | Conventional Agriculture | Reference | Unit |
|----------|--------------|--------------------------|-----------|------|
|----------|--------------|--------------------------|-----------|------|

|   |         |     |            |
|---|---------|-----|------------|
| N Spinach                                   | 166.26  | 125 | 130 kg/ha  |
| P Spinach                                   | 12.24   | 50  | 55 kg/ha   |
| K Spinach                                   | 10.2    | 175 | 180 kg/ha  |
| Ca Spinach                                  | 120.36  | 70  | 75 kg/ha   |
| Mg Spinach                                  | 67.32   | 40  | 42 kg/ha   |
| S Spinach                                   | 30.6    | 30  | 32 kg/ha   |
| Organic Matter and Other Components Spinach | 9793.02 | 0.1 | 0.15 kg/ha |

#### Nutrient Composition - Lettuce

| Variable                                    | Urban Garden | Conventional Agriculture | Reference | Unit |
|---|--------------|--------------------------|-----------|------|
| N Lettuce                                   | 166.26       | 100                      | 110 kg/ha |      |
| P Lettuce                                   | 12.24        | 40                       | 45 kg/ha  |      |
| K Lettuce                                   | 10.2         | 125                      | 130 kg/ha |      |
| Ca Lettuce                                  | 120.36       | 80                       | 85 kg/ha  |      |
| Mg Lettuce                                  | 67.32        | 40                       | 42 kg/ha  |      |
| S Lettuce                                   | 30.6         | 30                       | 32 kg/ha  |      |
| Organic Matter and Other Components Lettuce | 9793.02      | 0.17                     | 0.2 kg/ha |      |

#### Labor Requirements

| Variable                           | Urban Garden | Conventional Agriculture | Reference   | Unit        |
|------------------------------------|--------------|--------------------------|-------------|-------------|
| Labor Tomato                       | 220          | 200                      | 150         | workdays/ha |
| Labor Swiss Chard                  | 180          | 150                      | 120         | workdays/ha |
| Labor Spinach                      | 140          | 120                      | 100         | workdays/ha |
| Labor Lettuce                      | 120          | 100                      | 80          | workdays/ha |
| Workday Price                      | \$248.93     | \$248.93                 | \$248.93    | \$/workday  |
| Total Workday Cost for Tomato      | \$54,764.60  | \$49,786.00              | \$37,339.50 | \$/ha       |
| Total Workday Cost for Swiss Chard | \$44,807.40  | \$37,339.50              | \$29,871.60 | \$/ha       |
| Total Workday Cost for Spinach     | \$34,850.20  | \$29,871.60              | \$24,893.00 | \$/ha       |
| Total Workday Cost for Lettuce     | \$29,871.60  | \$24,893.00              | \$19,914.40 | \$/ha       |

#### Market Prices

| Variable                  | Urban Garden | Conventional Agriculture | Reference | Unit  |
|---------------------------|--------------|--------------------------|-----------|-------|
| Selling Price Tomato      | \$55.00      | \$20.00                  | \$25.00   | \$/kg |
| Selling Price Swiss Chard | \$115.00     | \$20.00                  | \$22.00   | \$/kg |
| Selling Price Spinach     | \$88.00      | \$28.00                  | \$30.00   | \$/kg |
| Selling Price Lettuce     | \$62.00      | \$42.00                  | \$45.00   | \$/kg |

#### Potential Economic Production

| Variable                                  | Urban Garden   | Conventional Agriculture | Reference      | Unit  |
|---|----------------|--------------------------|----------------|-------|
| Potential Economic Production Tomato      | \$3,575,000.00 | \$1,300,000.00           | \$1,625,000.00 | \$/ha |
| Potential Economic Production Swiss Chard | \$5,980,000.00 | \$1,040,000.00           | \$1,144,000.00 | \$/ha |
| Potential Economic Production Spinach     | \$2,464,000.00 | \$784,000.00             | \$840,000.00   | \$/ha |
| Potential Economic Production Lettuce     | \$2,170,000.00 | \$1,470,000.00           | \$1,575,000.00 | \$/ha |

#### Actual Economic Production

| Variable                        | Urban Garden   | Conventional Agriculture | Reference    | Unit  |
|---------------------------------|----------------|--------------------------|--------------|-------|
| Economic Production Tomato      | \$2,206,111.05 | \$1,232,000.00           | \$995,000.00 | \$/ha |
| Economic Production Swiss Chard | \$5,422,889.40 | \$684,160.00             | \$770,000.00 | \$/ha |

|                             |                |              |                |       |
|-----------------------------|----------------|--------------|----------------|-------|
| Economic Production Spinach | \$1,826,489.28 | \$500,080.00 | \$600,000.00   | \$/ha |
| Economic Production Lettuce | \$1,358,948.24 | \$886,200.00 | \$1,462,500.00 | \$/ha |

#### Input Supplies

| Variable              | Urban Garden | Conventional Agriculture | Reference | Unit     |
|-----------------------|--------------|--------------------------|-----------|----------|
| Tomato Seeds          | 110          | 150                      | 150       | g/ha     |
| Swiss Chard Seeds     | 600          | 2000                     | 2000      | g/ha     |
| Spinach Seeds         | 400          | 4000                     | 4000      | g/ha     |
| Lettuce Seeds         | 60           | 400                      | 400       | g/ha     |
| Shovel                | 4            | 4                        | 4         | units/ha |
| Bicolor Bag           | 20,408       | 0                        | 0         | units/ha |
| Seedlings Tomato      | 103          | 125                      | 157       | units/ha |
| Seedlings Swiss Chard | 103          | 325                      | 415       | units/ha |
| Seedlings Spinach     | 103          | 900                      | 925       | units/ha |
| Seedlings Lettuce     | 103          | 750                      | 830       | units/ha |
| Irrigation Hose       | 1700         | 1700                     | 1700      | m/ha     |

#### Input Supply Costs

| Variable                             | Urban Garden | Conventional Agriculture | Reference   | Unit  |
|--------------------------------------|--------------|--------------------------|-------------|-------|
| Total Price Seedlings Tomato         | \$5,520.80   | \$6,700.00               | \$8,415.20  | \$/ha |
| Total Price Seedlings Swiss Chard    | \$5,520.80   | \$17,420.00              | \$22,244.00 | \$/ha |
| Total Price Seedlings Spinach        | \$5,520.80   | \$48,240.00              | \$49,580.00 | \$/ha |
| Total Price Seedlings Lettuce        | \$5,520.80   | \$40,200.00              | \$44,488.00 | \$/ha |
| Total Price Bicolor Bags Tomato      | \$30,612.00  | \$-                      | \$-         | \$/ha |
| Total Price Bicolor Bags Swiss Chard | \$30,612.00  | \$-                      | \$-         | \$/ha |
| Total Price Bicolor Bags Spinach     | \$30,612.00  | \$-                      | \$-         | \$/ha |
| Total Price Bicolor Bags Lettuce     | \$30,612.00  | \$-                      | \$-         | \$/ha |
| Total Price Shovels                  | \$940.00     | \$235.00                 | \$235.00    | \$/ha |
| Total Price Hose                     | \$7,099.00   | \$7,099.00               | \$7,099.00  | \$/ha |
| Price Tomato Seeds                   | \$638.00     | \$782.00                 | \$977.00    | \$/ha |
| Price Swiss Chard Seeds              | \$1,835.00   | \$5,260.00               | \$6,715.00  | \$/ha |
| Price Spinach Seeds                  | \$367.00     | \$2,915.00               | \$2,995.00  | \$/ha |
| Price Lettuce Seeds                  | \$1,907.00   | \$14,006.00              | \$15,500.00 | \$/ha |

#### Total Production Costs

| Variable                    | Urban Garden | Conventional Agriculture | Reference    | Unit  |
|-----------------------------|--------------|--------------------------|--------------|-------|
| Total Costs for Tomato      | \$234,312.86 | \$234,342.52             | \$212,175.78 | \$/ha |
| Total Costs for Swiss Chard | \$191,795.04 | \$192,042.35             | \$169,475.30 | \$/ha |
| Total Costs for Spinach     | \$180,369.84 | \$189,649.50             | \$164,582.80 | \$/ha |
| Total Costs for Lettuce     | \$172,243.32 | \$176,769.05             | \$177,404.70 | \$/ha |

#### Nutrient Extraction Coefficients - Tomato

| Variable                         | Urban Garden | Conventional Agriculture | Reference | Unit   |
|----------------------------------|--------------|--------------------------|-----------|--------|
| N Extraction Coefficient Tomato  | 2.9          | 2.9                      | 3         | kg/ton |
| P Extraction Coefficient Tomato  | 0.45         | 0.45                     | 0.5       | kg/ton |
| K Extraction Coefficient Tomato  | 4.25         | 4.25                     | 4.5       | kg/ton |
| Ca Extraction Coefficient Tomato | 3            | 3                        | 3.2       | kg/ton |
| Mg Extraction Coefficient Tomato | 0.9          | 0.9                      | 1         | kg/ton |

|                                 |     |     |     |        |
|---------------------------------|-----|-----|-----|--------|
| S Extraction Coefficient Tomato | 0.5 | 0.5 | 0.6 | kg/ton |
|---------------------------------|-----|-----|-----|--------|

#### Nutrient Extraction Coefficients - Swiss Chard

| Variable                              | Urban Garden | Conventional Agriculture | Reference | Unit   |
|---------------------------------------|--------------|--------------------------|-----------|--------|
| N Extraction Coefficient Swiss Chard  | 3.75         | 3.75                     | 4         | kg/ton |
| P Extraction Coefficient Swiss Chard  | 0.6          | 0.6                      | 0.7       | kg/ton |
| K Extraction Coefficient Swiss Chard  | 6.5          | 6.5                      | 7         | kg/ton |
| Ca Extraction Coefficient Swiss Chard | 1.35         | 1.35                     | 1.5       | kg/ton |
| Mg Extraction Coefficient Swiss Chard | 0.9          | 0.9                      | 1         | kg/ton |
| S Extraction Coefficient Swiss Chard  | 0.35         | 0.35                     | 0.4       | kg/ton |

#### Nutrient Extraction Coefficients - Spinach

| Variable                          | Urban Garden | Conventional Agriculture | Reference | Unit   |
|-----------------------------------|--------------|--------------------------|-----------|--------|
| N Extraction Coefficient Spinach  | 3.25         | 3.25                     | 3.5       | kg/ton |
| P Extraction Coefficient Spinach  | 0.55         | 0.55                     | 0.6       | kg/ton |
| K Extraction Coefficient Spinach  | 4.75         | 4.75                     | 5         | kg/ton |
| Ca Extraction Coefficient Spinach | 1.1          | 1.1                      | 1.2       | kg/ton |
| Mg Extraction Coefficient Spinach | 0.7          | 0.7                      | 0.8       | kg/ton |
| S Extraction Coefficient Spinach  | 0.25         | 0.25                     | 0.3       | kg/ton |

#### Nutrient Extraction Coefficients - Lettuce

| Variable                          | Urban Garden | Conventional Agriculture | Reference | Unit   |
|-----------------------------------|--------------|--------------------------|-----------|--------|
| N Extraction Coefficient Lettuce  | 2.25         | 2.25                     | 2.5       | kg/ton |
| P Extraction Coefficient Lettuce  | 0.35         | 0.35                     | 0.4       | kg/ton |
| K Extraction Coefficient Lettuce  | 3.75         | 3.75                     | 4         | kg/ton |
| Ca Extraction Coefficient Lettuce | 1.4          | 1.4                      | 1.5       | kg/ton |
| Mg Extraction Coefficient Lettuce | 0.55         | 0.55                     | 0.6       | kg/ton |
| S Extraction Coefficient Lettuce  | 0.25         | 0.25                     | 0.3       | kg/ton |

#### Nutrient Extraction - Tomato

| Variable             | Urban Garden | Conventional Agriculture | Reference | Unit  |
|----------------------|--------------|--------------------------|-----------|-------|
| N Extraction Tomato  | 116.322219   | 178.64                   | 119.4     | N/ha  |
| P Extraction Tomato  | 18.0499995   | 27.72                    | 19.9      | P/ha  |
| K Extraction Tomato  | 170.4722175  | 261.8                    | 179.1     | K/ha  |
| Ca Extraction Tomato | 120.33333    | 184.8                    | 127.36    | Ca/ha |
| Mg Extraction Tomato | 36.099999    | 55.44                    | 39.8      | Mg/ha |
| S Extraction Tomato  | 20.055555    | 30.8                     | 23.88     | S/ha  |

#### Nutrient Input - Tomato

| Variable        | Urban Garden | Conventional Agriculture | Reference | Unit  |
|-----------------|--------------|--------------------------|-----------|-------|
| N Input Tomato  | 166.26       | 200                      | 250       | kg/ha |
| P Input Tomato  | 12.24        | 100                      | 120       | kg/ha |
| K Input Tomato  | 10.2         | 250                      | 280       | kg/ha |
| Ca Input Tomato | 120.36       | 90                       | 100       | kg/ha |
| Mg Input Tomato | 67.32        | 50                       | 60        | kg/ha |
| S Input Tomato  | 30.6         | 80                       | 70        | kg/ha |

#### Nutrient Balance - Tomato

| Variable  | Urban Garden | Conventional Agriculture | Reference | Unit  |
|---|--------------|--------------------------|-----------|-------|
| N Balance Tomato  | 49.937781    | 21.36                    | 130.6     | N/ha  |
| P Balance Tomato  | -5.8099995   | 72.28                    | 100.1     | P/ha  |
| K Balance Tomato  | -160.2722175 | -11.8                    | 100.9     | K/ha  |
| Ca Balance Tomato   | 0.02667      | -94.8                    | -27.36    | Ca/ha |
| Mg Balance Tomato   | 31.220001    | -5.44                    | 20.2      | Mg/ha |
| S Balance Tomato  | 10.544445    | 49.2                     | 46.12     | S/ha  |
| <i>Negative numbers indicate deficit (needs replenishment) and positive numbers indicate surplus.</i> |              |                          |           |       |

#### Nutrient Replenishment Cost - Lettuce

| Variable   | Urban Garden | Conventional Agriculture | Reference | Unit  |
|--|--------------|--------------------------|-----------|-------|
| N Replenishment Cost Lettuce   | -818.60331   | -1253.77175              | -395.8875 | \$/ha |
| P Replenishment Cost Lettuce   | -31.979626   | -778.52005               | -440.64   | \$/ha |
| K Replenishment Cost Lettuce   | 503.96115    | -1095.03625              | 0         | \$/ha |
| Ca Replenishment Cost Lettuce  | -627.718504  | -1204.4802               | -499.1625 | \$/ha |
| Mg Replenishment Cost Lettuce  | -386.853698  | -677.78865               | -309.825  | \$/ha |
| S Replenishment Cost Lettuce   | -175.84259   | -590.18575               | -306.3825 | \$/ha |
| <i>Negative numbers indicate that nutrient replenishment is not needed (no replenishment cost)</i> |              |                          |           |       |

#### Water Valuation

| Variable       | Urban Garden | Conventional Agriculture | Reference | Unit              |
|----------------|--------------|--------------------------|-----------|-------------------|
| WV Tomato      | \$130.63     | \$11.48                  | \$11.50   | \$/m <sup>3</sup> |
| WV Swiss Chard | \$721.19     | \$4.17                   | \$5.18    | \$/m <sup>3</sup> |
| WV Spinach     | \$232.73     | \$7.18                   | \$9.15    | \$/m <sup>3</sup> |
| WV Lettuce     | \$201.82     | \$12.00                  | \$12.00   | \$/m <sup>3</sup> |

#### Price Sensitivity Analysis

| Variable         | Urban Garden | Conventional Agriculture | Reference | Unit |
|------------------|--------------|--------------------------|-----------|------|
| Tomato Base      | 86.7         | 77.2                     | 75.1      | %/ha |
| Tomato +20%      | 89.4         | 79.6                     | 77.5      | %/ha |
| Tomato -20%      | 83.9         | 74.7                     | 72.6      | %/ha |
| Swiss Chard Base | 94.8         | 67.5                     | 73.6      | %/ha |
| Swiss Chard +20% | 96.7         | 69.8                     | 76        | %/ha |
| Swiss Chard -20% | 92.8         | 65.1                     | 71.1      | %/ha |
| Spinach Base     | 88.3         | 58.4                     | 68.9      | %/ha |
| Spinach +20%     | 90.5         | 60.7                     | 71.3      | %/ha |
| Spinach -20%     | 86.1         | 56                       | 66.4      | %/ha |
| Lettuce Base     | 85.1         | 76.8                     | 84.2      | %/ha |
| Lettuce +20%     | 87.2         | 79.2                     | 86.6      | %/ha |
| Lettuce -20%     | 82.9         | 74.3                     | 81.7      | %/ha |

#### Total Costs Sensitivity Analysis

| Variable         | Urban Garden | Conventional Agriculture | Reference | Unit |
|------------------|--------------|--------------------------|-----------|------|
| Tomato Base      | 86.7         | 77.2                     | 75.1      | %/ha |
| Tomato +20%      | 83.2         | 74.1                     | 72.1      | %/ha |
| Tomato -20%      | 90.1         | 80.2                     | 78        | %/ha |
| Swiss Chard Base | 94.8         | 67.5                     | 73.6      | %/ha |

|                  |      |      |      |      |
|------------------|------|------|------|------|
| Swiss Chard +20% | 91.2 | 64.8 | 70.7 | %/ha |
| Swiss Chard -20% | 98.3 | 70.1 | 76.4 | %/ha |
| Spinach Base     | 88.3 | 58.4 | 68.9 | %/ha |
| Spinach +20%     | 84.9 | 56.1 | 66.2 | %/ha |
| Spinach -20%     | 91.6 | 60.6 | 71.5 | %/ha |
| Lettuce Base     | 85.1 | 76.8 | 84.2 | %/ha |
| Lettuce +20%     | 81.8 | 73.7 | 80.9 | %/ha |
| Lettuce -20%     | 88.3 | 79.8 | 87.4 | %/ha |

#### Water Costs Sensitivity Analysis

| Variable         | Urban Garden | Conventional Agriculture | Reference | Unit |
|------------------|--------------|--------------------------|-----------|------|
| Tomato Base      | 86.7         | 77.2                     | 75.1      | %/ha |
| Tomato +20%      | 85.4         | 75.1                     | 73.1      | %/ha |
| Tomato -20%      | 87.9         | 79.2                     | 77        | %/ha |
| Swiss Chard Base | 94.8         | 67.5                     | 73.6      | %/ha |
| Swiss Chard +20% | 93.5         | 65.7                     | 71.7      | %/ha |
| Swiss Chard -20% | 96           | 69.2                     | 75.4      | %/ha |
| Spinach Base     | 88.3         | 58.4                     | 68.9      | %/ha |
| Spinach +20%     | 87.1         | 56.8                     | 67.2      | %/ha |
| Spinach -20%     | 89.4         | 59.9                     | 70.5      | %/ha |
| Lettuce Base     | 85.1         | 76.8                     | 84.2      | %/ha |
| Lettuce +20%     | 83.9         | 74.9                     | 82.2      | %/ha |
| Lettuce -20%     | 86.2         | 78.6                     | 86.1      | %/ha |

#### Nutrient Replenishment Costs Sensitivity Analysis

| Variable         | Urban Garden | Conventional Agriculture | Reference | Unit |
|------------------|--------------|--------------------------|-----------|------|
| Tomato Base      | 86.7         | 77.2                     | 75.1      | %/ha |
| Tomato +20%      | 86.2         | 76.4                     | 74.3      | %/ha |
| Tomato -20%      | 87.1         | 77.9                     | 75.8      | %/ha |
| Swiss Chard Base | 94.8         | 67.5                     | 73.6      | %/ha |
| Swiss Chard +20% | 94.3         | 66.8                     | 72.9      | %/ha |
| Swiss Chard -20% | 95.2         | 68.1                     | 74.2      | %/ha |
| Spinach Base     | 88.3         | 58.4                     | 68.9      | %/ha |
| Spinach +20%     | 87.8         | 57.8                     | 68.2      | %/ha |
| Spinach -20%     | 88.7         | 58.9                     | 69.5      | %/ha |
| Lettuce Base     | 85.1         | 76.8                     | 84.2      | %/ha |
| Lettuce +20%     | 84.6         | 76.1                     | 83.5      | %/ha |
| Lettuce -20%     | 85.5         | 77.4                     | 84.8      | %/ha |

#### Integrated Stochastic Sustainability Indicators

| Variable        | Urban Garden | Conventional Agriculture | Reference | Unit |
|-----------------|--------------|--------------------------|-----------|------|
| ISI Tomato      | 88.7         | 82.1                     | 80.4      | %/ha |
| ISI Swiss Chard | 92.8         | 72.5                     | 76.3      | %/ha |
| ISI Spinach     | 87.2         | 65.4                     | 72.7      | %/ha |
| ISI Lettuce     | 85.4         | 80.2                     | 86.5      | %/ha |

#### Stochastic ISI with Environmental Costs

| Variable | Urban Garden | Conventional Agriculture | Reference | Unit |
|----------|--------------|--------------------------|-----------|------|
|----------|--------------|--------------------------|-----------|------|

|                 |      |      |      |      |
|-----------------|------|------|------|------|
| ISI Tomato      | 86.4 | 79.8 | 78.1 | %/ha |
| ISI Swiss Chard | 90.5 | 70.2 | 74   | %/ha |
| ISI Spinach     | 84.9 | 63.1 | 70.4 | %/ha |
| ISI Lettuce     | 83.1 | 77.9 | 84.2 | %/ha |

#### Production Elasticities

| Variable                          | Urban Garden | Conventional Agriculture | Reference | Unit |
|-----------------------------------|--------------|--------------------------|-----------|------|
| Labor Elasticity Tomato           | 0.384        | 0.292                    | 0.276     | %/%  |
| Fertilizer Elasticity Tomato      | 0.245        | 0.187                    | 0.165     | %/%  |
| Water Elasticity Tomato           | 0.198        | 0.156                    | 0.142     | %/%  |
| Labor Elasticity Swiss Chard      | 0.412        | 0.308                    | 0.289     | %/%  |
| Fertilizer Elasticity Swiss Chard | 0.267        | 0.198                    | 0.178     | %/%  |
| Water Elasticity Swiss Chard      | 0.215        | 0.167                    | 0.156     | %/%  |
| Labor Elasticity Spinach          | 0.365        | 0.275                    | 0.254     | %/%  |
| Fertilizer Elasticity Spinach     | 0.234        | 0.176                    | 0.162     | %/%  |
| Water Elasticity Spinach          | 0.187        | 0.145                    | 0.134     | %/%  |
| Labor Elasticity Lettuce          | 0.398        | 0.298                    | 0.278     | %/%  |

#### Nutrient Replenishment Cost - Spinach

| Variable                      | Urban Garden | Conventional Agriculture | Reference | Unit  |
|-------------------------------|--------------|--------------------------|-----------|-------|
| N Replenishment Cost Spinach  | -691.63101   | -1594.19855              | -826.2    | \$/ha |
| P Replenishment Cost Spinach  | -5.771094    | -956.61437               | -592.11   | \$/ha |
| K Replenishment Cost Spinach  | 618.72237    | -2146.82865              | -1101.6   | \$/ha |
| Ca Replenishment Cost Spinach | -682.702188  | -1198.92874              | -702.27   | \$/ha |
| Mg Replenishment Cost Spinach | -369.537756  | -654.72738               | -358.02   | \$/ha |
| S Replenishment Cost Spinach  | -177.87777   | -607.98835               | -358.02   | \$/ha |

*Negative numbers indicate that nutrient replenishment is not needed (no replenishment cost)*

#### Nutrient Extraction - Lettuce

| Variable              | Urban Garden | Conventional Agriculture | Reference | Unit  |
|-----------------------|--------------|--------------------------|-----------|-------|
| N Extraction Lettuce  | 49.31667     | 47.475                   | 81.25     | N/ha  |
| P Extraction Lettuce  | 7.671482     | 7.385                    | 13        | P/ha  |
| K Extraction Lettuce  | 82.19445     | 79.125                   | 130       | K/ha  |
| Ca Extraction Lettuce | 30.685928    | 29.54                    | 48.75     | Ca/ha |
| Mg Extraction Lettuce | 12.055186    | 11.605                   | 19.5      | Mg/ha |
| S Extraction Lettuce  | 5.47963      | 5.275                    | 9.75      | S/ha  |

#### Nutrient Input - Lettuce

| Variable         | Urban Garden | Conventional Agriculture | Reference | Unit  |
|------------------|--------------|--------------------------|-----------|-------|
| N Input Lettuce  | 166.26       | 100                      | 110       | kg/ha |
| P Input Lettuce  | 12.24        | 40                       | 45        | kg/ha |
| K Input Lettuce  | 10.2         | 125                      | 130       | kg/ha |
| Ca Input Lettuce | 120.36       | 80                       | 85        | kg/ha |
| Mg Input Lettuce | 67.32        | 40                       | 42        | kg/ha |
| S Input Lettuce  | 30.6         | 30                       | 32        | kg/ha |

#### Nutrient Balance - Lettuce



| Variable           | Urban Garden | Conventional Agriculture | Reference | Unit  |
|--------------------|--------------|--------------------------|-----------|-------|
| N Balance Lettuce  | 116.94333    | 52.525                   | 28.75     | N/ha  |
| P Balance Lettuce  | 4.568518     | 32.615                   | 32        | P/ha  |
| K Balance Lettuce  | -71.99445    | 45.875                   | 0         | K/ha  |
| Ca Balance Lettuce | 89.674072    | 50.46                    | 36.25     | Ca/ha |
| Mg Balance Lettuce | 55.264814    | 28.395                   | 22.5      | Mg/ha |
| S Balance Lettuce  | 25.12037     | 24.725                   | 22.25     | S/ha  |

*Negative numbers indicate deficit (needs replenishment) and positive numbers indicate surplus.*

#### Nutrient Replenishment Cost - Tomato

| Variable                     | Urban Garden | Conventional Agriculture | Reference | Unit  |
|------------------------------|--------------|--------------------------|-----------|-------|
| N Replenishment Cost Tomato  | -349.564467  | -500.0376                | -1798.362 | \$/ha |
| P Replenishment Cost Tomato  | 40.6699965   | -1692.0748               | -1378.377 | \$/ha |
| K Replenishment Cost Tomato  | 1121.905523  | 276.238                  | -1389.393 | \$/ha |
| Ca Replenishment Cost Tomato | -0.18669     | 2219.268                 | 376.7472  | \$/ha |
| Mg Replenishment Cost Tomato | -218.540007  | 127.3504                 | -278.154  | \$/ha |
| S Replenishment Cost Tomato  | -73.811115   | -1151.772                | -635.0724 | \$/ha |

*Negative numbers indicate that nutrient replenishment is not needed (no replenishment cost)*

#### Nutrient Extraction - Swiss Chard

| Variable                  | Urban Garden | Conventional Agriculture | Reference | Unit  |
|---------------------------|--------------|--------------------------|-----------|-------|
| N Extraction Swiss Chard  | 176.83335    | 128.28                   | 140       | N/ha  |
| P Extraction Swiss Chard  | 28.293336    | 20.5248                  | 24.5      | P/ha  |
| K Extraction Swiss Chard  | 306.51114    | 222.352                  | 245       | K/ha  |
| Ca Extraction Swiss Chard | 63.660006    | 46.1808                  | 52.5      | Ca/ha |
| Mg Extraction Swiss Chard | 42.440004    | 30.7872                  | 35        | Mg/ha |
| S Extraction Swiss Chard  | 16.504446    | 11.9728                  | 14        | S/ha  |

#### Nutrient Input - Swiss Chard

| Variable             | Urban Garden | Conventional Agriculture | Reference | Unit  |
|----------------------|--------------|--------------------------|-----------|-------|
| N Input Swiss Chard  | 166.26       | 150                      | 160       | kg/ha |
| P Input Swiss Chard  | 12.24        | 65                       | 70        | kg/ha |
| K Input Swiss Chard  | 10.2         | 250                      | 260       | kg/ha |
| Ca Input Swiss Chard | 120.36       | 80                       | 85        | kg/ha |
| Mg Input Swiss Chard | 67.32        | 40                       | 45        | kg/ha |
| S Input Swiss Chard  | 30.6         | 30                       | 35        | kg/ha |

#### Nutrient Balance - Swiss Chard

| Variable               | Urban Garden | Conventional Agriculture | Reference | Unit  |
|------------------------|--------------|--------------------------|-----------|-------|
| N Balance Swiss Chard  | -10.57335    | 21.72                    | 20        | N/ha  |
| P Balance Swiss Chard  | -16.053336   | 44.4752                  | 45.5      | P/ha  |
| K Balance Swiss Chard  | -296.31114   | 27.648                   | 15        | K/ha  |
| Ca Balance Swiss Chard | 56.699994    | 33.8192                  | 32.5      | Ca/ha |
| Mg Balance Swiss Chard | 24.879996    | 9.2128                   | 10        | Mg/ha |
| S Balance Swiss Chard  | 14.095554    | 18.0272                  | 21        | S/ha  |

*Negative numbers indicate deficit (needs replenishment) and positive numbers indicate surplus.*

| Nutrient Replenishment Cost - Swiss Chard  |              |                          |           |       |
|--|--------------|--------------------------|-----------|-------|
| Variable   | Urban Garden | Conventional Agriculture | Reference | Unit  |
| N Replenishment Cost Swiss Chard   | 74.01345     | -508.0308                | -275.4    | \$/ha |
| P Replenishment Cost Swiss Chard   | 112.373352   | -1040.274928             | -626.535  | \$/ha |
| K Replenishment Cost Swiss Chard   | 2074.17798   | -646.68672               | -206.55   | \$/ha |
| Ca Replenishment Cost Swiss Chard  | -396.899958  | -791.031088              | -447.525  | \$/ha |
| Mg Replenishment Cost Swiss Chard  | -174.159972  | -215.487392              | -137.7    | \$/ha |
| S Replenishment Cost Swiss Chard   | -98.668878   | -421.656208              | -289.17   | \$/ha |
| <i>Negative numbers indicate that nutrient replenishment is not needed (no replenishment cost)</i> |              |                          |           |       |
| Nutrient Extraction - Spinach  |              |                          |           |       |
| Variable   | Urban Garden | Conventional Agriculture | Reference | Unit  |
| N Extraction Spinach   | 67.45557     | 58.045                   | 70        | N/ha  |
| P Extraction Spinach   | 11.415558    | 9.823                    | 12        | P/ha  |
| K Extraction Spinach   | 98.58891     | 84.835                   | 100       | K/ha  |
| Ca Extraction Spinach  | 22.831116    | 19.646                   | 24        | Ca/ha |
| Mg Extraction Spinach  | 14.528892    | 12.502                   | 16        | Mg/ha |
| S Extraction Spinach   | 5.18889      | 4.465                    | 6         | S/ha  |
| Nutrient Input - Spinach   |              |                          |           |       |
| Variable   | Urban Garden | Conventional Agriculture | Reference | Unit  |
| N Input Spinach  | 166.26       | 125                      | 130       | kg/ha |
| P Input Spinach  | 12.24        | 50                       | 55        | kg/ha |
| K Input Spinach  | 10.2         | 175                      | 180       | kg/ha |
| Ca Input Spinach   | 120.36       | 70                       | 75        | kg/ha |
| Mg Input Spinach   | 67.32        | 40                       | 42        | kg/ha |
| S Input Spinach  | 30.6         | 30                       | 32        | kg/ha |
| Nutrient Balance - Spinach   |              |                          |           |       |
| Variable   | Urban Garden | Conventional Agriculture | Reference | Unit  |
| N Balance Spinach  | 98.80443     | 66.955                   | 60        | N/ha  |
| P Balance Spinach  | 0.824442     | 40.177                   | 43        | P/ha  |
| K Balance Spinach  | -88.38891    | 90.165                   | 80        | K/ha  |
| Ca Balance Spinach   | 97.528884    | 50.354                   | 51        | Ca/ha |
| Mg Balance Spinach   | 52.791108    | 27.498                   | 26        | Mg/ha |
| S Balance Spinach  | 25.41111     | 25.535                   | 26        | S/ha  |

*\*Negative numbers indicate deficit (needs replenishment) and positive numbers indicate surplus.*