

Final report

S-Risk - Technical guidance document - annex IV

Cornelis Christa

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REVISION HISTORY

| <i>Date</i> | <i>revision</i> |
|-------------|---|
| 28/02/2017 | Adding total number of hours on site for landuse type heavy industry (Table 10) |

Annex IV - Default values for the calculation of soil remediation values

| Parameter | Unit | Value |
|--|--------------------------------|---------------|
| SOIL | | |
| Soil type | - | Standard soil |
| Number of soil layers | - | 1 |
| Depth of groundwater table | m | 3 |
| OM (organic matter) | % | 2 |
| ρ_s (soil bulk density) | kg/m ³ | 1480 |
| θ_w (water-filled porosity of soil layer) | m ³ /m ³ | 0.2 |
| θ_a (air-filled porosity of soil layer) | m ³ /m ³ | 0.23 |
| θ_s (total soil porosity of soil layer) | m ³ /m ³ | 0.43 |
| CL (clay content) | % | 10 |
| CEC (cation exchange capacity) | meq/100 g | 10.8 |
| pH-KCl | - | 5 |
| $\theta_{w,cz}$ (water-filled porosity of the capillary zone) | m ³ /m ³ | 0.24 |
| L_{cz} (height of the capillary zone) | m | 0.5 |
| k_v (air permeability of the soil layer) | m ² | 6.6E-13 |
| Al (aluminium content) | mg/kg | 1025 |
| Fe (iron content) | mg/kg | 2000 |
| P_{tot} (total phosphorus content) | mg/kg | 1250 |
| GROUNDWATER | | |
| k (hydraulic conductivity of the phreatic groundwater layer) | m/y | 365 |
| i (hydraulic gradient) | m/m | 0.001 |
| L_{leach} (length of the source area) | m | 50 |
| q_u (infiltration in the vadose zone, unpaved area) | m/y | 0.265 |
| f_u (fraction unpaved) | - | 1 |
| d_a (thickness of the phreatic groundwater layer) | m | 30 |
| DRINKING-WATER | | |
| drinking-water pipe material | | polyethylene |
| depth of the drinking-water pipe | m | 0.8 |
| dt (stagnation time in pipe) | h/d | 24 |
| r (internal radius of the pipe) | m | 0.0098 |
| d_e (thickness of the drinking-water pipe wall) | m | 0.0027 |
| L_p (total pipe length through the contaminated area) | m | 50 |
| Q_{dw} (daily drinking-water use) | m ³ /d | 0.5 |
| f_g (fraction groundwater used as drinking-water) | - | 0 |
| AMBIENT AIR | | |
| L (length of the contaminated area in dominant wind direction) | m | 50 |
| Z_{0r} (roughness length) | m | |
| • agriculture (II) | | 0.1 |
| • residences with vegetable garden (III) | | 0.6 |
| • day recreation (IVa) | | 0.1 |

| | | | |
|-------------------------------------|--|-------------|----------------------------|
| | <ul style="list-style-type: none"> • holiday resort (IVb) | | 0.1 |
| | <ul style="list-style-type: none"> • light industry (Va) | | 0.6 |
| | <ul style="list-style-type: none"> • heavy industry (Vb) | | 0.6 |
| Y | (breathing height) | m | |
| | <ul style="list-style-type: none"> • plant | | 0.5 |
| | <ul style="list-style-type: none"> • child | | 1.0 |
| | <ul style="list-style-type: none"> • adult | | 1.5 |
| h | (height for wind velocity V_h) | m | 10 |
| V_h | (wind velocity at reference height h) | m/d | 288000 |
| k_{karman} | (von Karman constant) | - | 0.4 |
| T | (averaging time) | d | |
| | <ul style="list-style-type: none"> • agriculture and residences (II, III) | | 6*365 |
| | <ul style="list-style-type: none"> • recreation (IV) | | 6*365 |
| | <ul style="list-style-type: none"> • industry (V) | | 45*365 |
| PM_{10}^{soil} | (concentration of PM_{10} resulting from soil) | $\mu g/m^3$ | 5 |
| $EF_{PM_{10}}$ | (enrichment factor from soil so PM_{10}) | - | 2 |
| INDOOR AIR | | | |
| building type | | | basement |
| concrete quality calculation option | | | gaps and holes |
| L_{bs} | (thickness of the buffer space) | m | 0.75 (0.10 in app. II/III) |
| L_f | (thickness of the floor of the basement) | m | 0.1 |
| d | (depth of the basement floor below soil surface) | m | 2 |
| ΔP_{si} | (pressure difference between indoor space and soil) | Pa | 1 |
| f_{of} | (fraction of openings in the floor) | m^2/m^2 | 1E-5 |
| n_f | (number of openings per floor area) | $1/m^2$ | 0.2 |
| η | (dynamic viscosity of air) | Pa.d | 2.30E-10 |
| $vv_{i,b}$ | (basic air exchange rate in the indoor space) | $1/d$ | |
| | <ul style="list-style-type: none"> • agriculture, residences, recreation (II, III,IV) | | 24 |
| | <ul style="list-style-type: none"> • industry (V) | | 48 |
| A_f | (surface area of the floor of the basement) | m^2 | 50 |
| A_w | (surface area of the walls of the basement) | m^2 | 60 |
| V_i | (volume of the indoor space) | m^3 | 150 |
| V_b | (volume of the basement) | m^3 | 100 |
| L_{bw} | (thickness of the basement walls) | m | 0.15 |
| $\epsilon_{v,w}$ | (air-filled porosity of the basement walls) | - | 0.07 |
| $k_{v,w}$ | (air permeability of the basement walls) | m^2 | 10^{-13} |
| $F_{soil/settled\ dust}$ | (fraction of soil in indoor settled dust) | - | |
| | <ul style="list-style-type: none"> • agriculture and residences (II, III) | | 0.5 |
| | <ul style="list-style-type: none"> • day recreation (IVa) | | 0.25 |
| | <ul style="list-style-type: none"> • holiday resort (IVb) | | 0.5 |
| | <ul style="list-style-type: none"> • industry (V) | | 0.25 |
| $EF_{soil/settled\ dust}$ | (enrichment factor from soil to settled indoor dust) | - | 1.5 |
| $F_{out/in}$ | (contribution of the concentration on ambient PM_{10} to the concentration on indoor PM_{10}) | - | 1.0 |

BATHROOM AIR

| | | | |
|-----------|--|---------|---------|
| V_w | (water use during showering) | m^3/h | 0.5 |
| t_{sh} | (duration of shower) | h | 0.25 |
| t_{br} | (time spent in the bathroom after showering) | h | 0.25 |
| V_{sh} | (volume of the shower stall) | m^3 | 2 |
| V_{br} | (volume of the bathroom) | m^3 | 15 |
| T_{sh} | (shower temperature) | K | 313 |
| t_f | (time of fall for a drop) | h | 2.78E-4 |
| r_d | (diameter of a drop) | m | 5.0E-4 |
| v_{vbr} | (ventilation rate in the bathroom) | 1/h | 3.3 |

PLANTS

| | | | |
|---------------------|---|--------------|---------|
| Q_{transp} | (transpiration rate) | $m^3/m^2.d$ | Table 1 |
| V_r | (root volume) | m^3/m^2 | Table 1 |
| ρ_r | (density of the root) | kg fw/ m^3 | Table 1 |
| ρ | (density of the plant) | kg fw/ m^3 | Table 1 |
| dm | (dry matter content of the plant) | % | Table 1 |
| L_{plant} | (lipid content of the plant) | kg/kg | Table 1 |
| a_{growth} | (chemical elimination via growth) | 1/d | Table 1 |
| $a_{metabolism}$ | (chemical elimination via metabolism) | 1/d | 0 |
| $a_{photodegradat}$ | (chemical elimination via photodegradation) | 1/d | 0 |
| r_p | (radius of the potato) | m | Table 1 |
| ρ_w | (density of water) | kg/ m^3 | 1000 |
| f_{ch} | (fraction of carbohydrates in potato) | kg/kg | 0.19 |
| t | (growth period of the plant) | d | Table 1 |
| A | (surface area of aboveground plant parts) | m^2/m^2 | Table 1 |
| V | (volume of the aboveground plant parts) | m^3/m^2 | Table 1 |
| V_d | (dry particle deposition rate) | m/d | 865 |
| R_n | (annual rainfall) | m/d | 2.2E-3 |
| R_w | (fraction retained after rainfall) | - | 1.0 |
| k_w | (plant weathering constant) | 1/d | 4.9E-2 |
| Y_v | (plant yield) | kg fw/ m^2 | Table 1 |
| W_c | (volumetric washout factor for particles) | - | 5E5 |
| f_{eff} | (fraction of soil particles taken up by the plant) | - | 1.0 |
| R | (ratio of particles on the leaves to total weight of the plant) | g/g fw | 5E-3 |

ANIMAL PRODUCTS

| | | | |
|-------------------|---|---------|---------------|
| $t_{f,winter}$ | (time fraction for winter diet) | - | |
| | • beef cattle | | 0.54 |
| | • milk cattle | | 0.54 |
| | • sheep | | 0.33 |
| $q_{soil,summer}$ | (daily intake of soil particles in summer/winter) | kg dm/d | |
| | • beef cattle | | 0.6 / 0.0 |
| | • milk cattle | | 0.6 / 0.0 |
| | • sheep | | 0.175 / 0.175 |
| $q_{pasture}$ | (daily consumption of grass in summer/winter) | kg dm/d | |

| | | | |
|-------------------------------|--|-----------------------|---------------|
| | • beef cattle | | 0.0 / 0.0 |
| | • milk cattle | | 7.918 / 0.0 |
| | • sheep | | 1.8 / 1.8 |
| $Q_{\text{grass,silage}}$ | (daily consumption of silage grass in kg dm/d summer/winter) | | |
| | • beef cattle | | 0.0 / 0.0 |
| | • milk cattle | | 4.298 / 7.537 |
| | • sheep | | 0.0 / 0.0 |
| Q_{maize} | (daily consumption of silage maize in kg dm/d summer/winter) | | |
| | • beef cattle | | 4.745 / 3.811 |
| | • milk cattle | | 2.217 / 4.358 |
| | • sheep | | 0.0 / 0.0 |
| Q_{water} | (daily intake of water) | m^3/d | |
| | • beef cattle | | 0.067 |
| | • milk cattle | | 0.067 |
| | • sheep | | 0.006 |
| $Q_{\text{concentrate}}$ | (daily intake of concentrate in kg dm/d summer/winter) | | |
| | • beef cattle | | 2.61 / 3.314 |
| | • milk cattle | | 0.257 / 2.346 |
| | • sheep | | 0.0 / 0.63 |
| f_{local} | (fraction of feed coming from contaminated area) | - | 1.0 |
| $f_{\text{c,water,gw}}$ | (fraction of groundwater for cattle) | - | 1.0 |
| $f_{\text{c,water,wp}}$ | (fraction of drinking-water for cattle) | - | 0.0 |
| chicken | | | no chicken |
| $Q_{\text{mixture,chicken}}$ | (daily consumption of feed mixture by chicken) | kg dm/d | 0.123 |
| $Q_{\text{grass,chicken}}$ | (daily consumption of grass by chicken) | kg dm/d | 0.007 |
| $Q_{\text{water,chicken}}$ | (daily intake of water by chicken) | m^3/d | 0.0002 |
| $Q_{\text{soil,chicken}}$ | (daily intake of soil by chicken) | kg dm/d | 0.03 |
| $f_{\text{free-range}}$ | (fraction of free-range) | - | 1.0 |
| $f_{\text{ch,water,gw}}$ | (fraction of groundwater for chicken) | - | 1.0 |
| $f_{\text{ch,water,wp}}$ | (fraction of drinking-water for chicken) | - | 0.0 |
| $f_{\text{f,butter}}$ | (fat content of butter) | - | 0.85 |
| $f_{\text{f,milk}}$ | (fat content of milk) | - | 0.04 |
| EXPOSURE | | | |
| exposure pathways by scenario | | | Table 2 |
| BW | (body weight) | kg | |
| | • 1 - < 3 y | | 12.3 |
| | • 3 - < 6 y | | 17.6 |
| | • 6 - < 10 y | | 26.8 |
| | • 10 - < 15 y | | 44.4 |
| | • 15 - < 21 y | | 62.5 |
| | • 21 - < 31 y | | 68.5 |
| | • 31 - < 41 y | | 70.5 |
| | • 41 - < 51 y | | 71.0 |
| | • 51 - < 61 y | | 74.0 |

| | | | |
|-------------------------------|---|--------|--|
| | • ≥ 61 y | | 72.5 |
| $IR_{soil/dust_daily}$ | (daily ingestion of soil and dust) | mg/d | Table 3 |
| F_{oral_soil} | (fraction of soil in soil and settled dust ingestion) | - | Table 3 |
| IR_{soil_hourly} | (hourly ingestion of soil) | mg/h | Table 4 |
| IR_{dust_hourly} | (hourly ingestion of settled dust) | mg/h | Table 4 |
| EF_{week} | (exposure frequency on a weekly basis) | d/w | Table 5, Table 6, Table 7, Table 8, |
| EF_{year} | (exposure frequency on a yearly basis) | w/y | Table 9, Table 10 Table 5, Table 6, Table 7, Table 8, |
| t_{out} | (time spent outside) | h/d | Table 9, Table 10 Table 5, Table 6, Table 7, Table 8, |
| t_{in} | (time spent inside) | h/d | Table 9, Table 10 Table 5, Table 6, Table 7, Table 8, |
| t_{sleep} | (time sleeping) | h/d | Table 9, Table 10 Table 5, Table 6, Table 7, Table 8, |
| $Q_{vegetable}$ | (daily vegetable consumption) | g fw/d | Table 9, Table 10 |
| $Q_{veg_category}$ | (daily consumption by vegetable category) | g fw/d | Table 11 |
| $f_{veg_category}^{garden}$ | (fraction of locally grown vegetables) | - | Table 11 Table 13 |
| Q_{beef} | (consumption of beef) | g/d | Table 12 |
| Q_{organ_meat} | (consumption of organ meat) | g/d | Table 12 |
| Q_{milk} | (consumption of milk) | g/d | Table 12 |
| Q_{butter} | (consumption of butter) | g/d | Table 12 |
| Q_{eggs} | (consumption of eggs) | g/d | Table 12 |
| $f_{animal_product}^{local}$ | (fraction of animal product coming from location) | - | Table 13 |
| $Q_{drinking-water}$ | (consumption of drinking-water) | l/d | |
| | • 1 - < 3 y | | 0.3 |
| | • 3 - < 6 y | | 0.313 |
| | • 6 - < 10 y | | 0.381 |
| | • 10 - < 15 y | | 0.649 |
| | • 15 - < 21 y | | 0.999 |
| | • 21 - < 31 y | | 1.759 |

| | | | |
|------------------------------|---|-------------------|----------|
| | • 31 - < 41 y | | 2.231 |
| | • 41 - < 51 y | | 2.199 |
| | • 51 - < 61 y | | 1.798 |
| | • ≥ 61 y | | 1.590 |
| RF _{drinking-water} | (reduction factor for drinking-water consumption) | - | Table 13 |
| AF _{soil_skin} | (average soil adherence on skin) | mg/m ² | Table 14 |
| AF _{dust_skin} | (average dust adherence on skin) | mg/m ² | Table 15 |
| SA _{out} | (skin surface area covered with soil during outside activities) | m ² | Table 16 |
| SA _{in} | (skin surface area covered with dust during inside activities) | m ² | Table 17 |
| SA _{total} | (total body surface area) | m ² | |
| | • 1 - < 3 y | | 0.560 |
| | • 3 - < 6 y | | 0.737 |
| | • 6 - < 10 y | | 0.994 |
| | • 10 - < 15 y | | 1.394 |
| | • 15 - < 21 y | | 1.736 |
| | • 21 - < 31 y | | 1.829 |
| | • 31 - < 41 y | | 1.849 |
| | • 41 - < 51 y | | 1.846 |
| | • 51 - < 61 y | | 1.880 |
| | • ≥ 61 y | | 1.853 |
| EV _{out} | (number of soil events) | events/d | 1 |
| EV _{in} | (number of dust events) | events/d | 1 |
| EV _{bathing} | (number of baths per day) | 1/d | Table 18 |
| EV _{showering} | (number of showers per day) | 1/d | Table 18 |
| EF _{week,bathing} | (frequency of bathing on a weekly basis) | d/w | Table 18 |
| EF _{week,showering} | (frequency of showering on a weekly basis) | d/w | Table 18 |
| l _{sc} | (apparent thickness of the stratum corneum) | cm | 1E-3 |
| t _{bathing} | (time in bath) | h | 0.33 |
| t _{sh} | (duration of shower) | h | 0.25 |
| WF _{age} | (age-dependent inhalation rate based weighting factor) | - | Table 19 |
| WF _{act} | (activity-dependent inhalation rate based weighting factor) | - | Table 19 |

Table 1: Plant characteristics

| plant | Type | Q_{transp} ($m^3/m^2 \cdot d$) | a_{growth} ($1/d$) | L_{plant} (kg/kg) | f_{CH} (kg/kg) | t (d) | ρ / ρ_r (kg/m^3) | V / V_r (m^3/m^2) | A (m^2/m^2) | Y_v ($kg\ fw/m^2$) | dm (%) | r_p (m) |
|----------------|------------------------|---------------------------------------|---------------------------|----------------------------|-------------------------|----------------|---------------------------------|----------------------------|----------------------|---------------------------|-------------|------------------|
| Potato | tuber | n.a. | 0.139 | 0.0015 | 0.19 | 128 | 1020 | 0.0038 | n.a. | 3.897 | 20 | 0.04 |
| Carrot | Root | 0.000778 | 0.1 | 0.025 | n.a. | 120 | 1020 | 0.0051 | n.a. | 5.2 | 11 | n.a. |
| Radish | Root | 0.001292 | 0.1 | 0.025 | n.a. | 29 | 820 | 0.0024 | n.a. | 2 | 5 | n.a. |
| Scorzonera | Root | 0.000271 | 0.1 | 0.025 | n.a. | 120 | 1020 | 0.0025 | n.a. | 2.5 | 9 | n.a. |
| Onion | Foliar | 0.001008 | 0.035 | 0.025 | n.a. | 55 | 800 | 0.0043 | 5 | 3.4 | 11 | n.a. |
| Leek | Foliar | 0.001563 | 0.035 | 0.025 | n.a. | 179 | 800 | 0.0046 | 5 | 3 | 13 | n.a. |
| Tomatoes | aboveground non-foliar | 0.000658 | 0.035 | 0.025 | n.a. | 150 | 800 | 0.0496 | 5 | 39.7 | 5 | n.a. |
| Cucumber | aboveground non-foliar | 0.000658 | 0.035 | 0.025 | n.a. | 150 | 800 | 0.0423 | 5 | 33.8 | 4 | n.a. |
| Paprika | aboveground non-foliar | 0.000658 | 0.035 | 0.025 | n.a. | 150 | 800 | 0.0203 | 5 | 16.2 | 9 | n.a. |
| cabbage | aboveground non-foliar | 0.000658 | 0.035 | 0.025 | n.a. | 91 | 800 | 0.0069 | 5 | 5.5 | 8 | n.a. |
| Cauliflower | aboveground non-foliar | 0.001 | 0.035 | 0.025 | n.a. | 91 | 800 | 0.00300 | 5 | 2.4 | 8.1 | n.a. |
| Sprout | aboveground non-foliar | 0.000512 | 0.035 | 0.025 | n.a. | 117 | 800 | 0.0023 | 5 | 1.8 | 17 | n.a. |
| Lettuce | Foliar | 0.001225 | 0.035 | 0.025 | n.a. | 69 | 610 | 0.0072 | 5 | 4.4 | 4 | n.a. |
| Lamb's lettuce | Foliar | 0.000442 | 0.035 | 0.025 | n.a. | 69 | 650 | 0.0015 | 5 | 1 | 4 | n.a. |
| Endive | Foliar | 0.000925 | 0.035 | 0.025 | n.a. | 69 | 735 | 0.0068 | 5 | 5 | 6.2 | n.a. |
| Spinach | Foliar | 0.001225 | 0.035 | 0.025 | n.a. | 69 | 630 | 0.0032 | 5 | 2 | 8 | n.a. |
| Chicory | Foliar | 0.000563 | 0.035 | 0.025 | n.a. | 73 | 700 | 0.0021 | 5 | 1.5 | 6 | n.a. |
| Celery | Foliar | 0.000392 | 0.035 | 0.025 | n.a. | 120 | 800 | 0.0079 | 5 | 6.3 | 8 | n.a. |
| Beans | aboveground non-foliar | 0.000392 | 0.035 | 0.025 | n.a. | 77 | 800 | 0.0031 | 5 | 2.5 | 11 | n.a. |
| Peas | aboveground non-foliar | 0.000533 | 0.035 | 0.025 | n.a. | 95 | 800 | 0.0010 | 5 | 0.8 | 18 | n.a. |
| Grass | Foliar | 0.001563 | 0.035 | 0.025 | n.a. | 30 | 820 | 0.002 | 5 | 5.93 | 35 | n.a. |
| maize | aboveground non-foliar | 0.0012 | 0.035 | 0.054 | n.a. | 183 | 800 | 0.0057 | 5 | 4.53 | 25 | n.a. |

Table 2: Exposure pathways by scenario

| | AGR (II) | RES-veg (III) | REC-dayout (IVa) | REC-stay (IVb) | IND-I (Va) | IND-h (Vb) |
|--|----------|---------------|------------------|----------------|------------|------------|
| Oral | | | | | | |
| Ingestion of soil | X | X | X | X | X | X |
| Ingestion of indoor settled dust | X | X | | X | X | X |
| Intake of vegetables from local production | X | X | | | | |
| Intake of meat and milk from local production | X | | | | | |
| Intake of water (drinking-water or groundwater) | X | X | | X | X | X |
| Dermal | | | | | | |
| Absorption from soil | X | X | X | X | X | X |
| absorption from indoor settled dust | X | X | | X | X | X |
| Absorption from water during showering and bathing | X | X | | X | | |
| Inhalation | | | | | | |
| Inhalation of outdoor air (gas-phase + particles) | X | X | X | X | X | X |
| Inhalation of indoor air (gas-phase + particles) | X | X | | X | X | X |
| Inhalation during showering (gas-phase) | X | X | | X | | |

Table 3: Daily soil and dust ingestion rates and fraction of soil contributing to soil and dust ingestion

| Age | AGR / RES-veg (II/III) | | REC-stay (IVb) | | IND-I (Va) | | IND-h (Vb) | |
|----------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|
| | IR _{soil/dust_daily} (mg/d) | F _{oral_soil} (-) | IR _{soil/dust_daily} (mg/d) | F _{oral_soil} (-) | IR _{soil/dust_daily} (mg/d) | F _{oral_soil} (-) | IR _{soil/dust_daily} (mg/d) | F _{oral_soil} (-) |
| 1 - < 3 year | 152 | 0.45 | 186 | 0.55 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 - < 6 year | 122 | 0.45 | 149 | 0.55 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 - < 10 year | 93 | 0.45 | 108 | 0.55 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 - < 15 year | 89 | 0.45 | 97 | 0.55 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 - < 21 year | 85 | 0.45 | 85 | 0.55 | 26 | 0.20 | 38.5 | 0.8 |
| 21 - < 31 year | 77 | 0.45 | 77 | 0.55 | 26 | 0.20 | 38.5 | 0.8 |
| 31 - < 41 year | 77 | 0.45 | 77 | 0.55 | 26 | 0.20 | 38.5 | 0.8 |
| 41 - < 51 year | 77 | 0.45 | 77 | 0.55 | 26 | 0.20 | 38.5 | 0.8 |
| 51 - < 61 year | 77 | 0.45 | 77 | 0.55 | 26 | 0.20 | 38.5 | 0.8 |
| ≥ 61 years | 77 | 0.45 | 77 | 0.55 | 26 | 0.20 | 38.5 | 0.8 |

Table 4: Hourly soil and dust ingestion values for recreation

| Age | REC-dayout (IVa) | |
|----------------|-------------------------------------|-------------------------------------|
| | IR _{soil_hourly} (mg/h) | IR _{dust_hourly} (mg/h) |
| 1 - < 3 year | 26 | 4 |
| 3 - < 6 year | 20 | 3 |
| 6 - < 10 year | 13 | 2 |
| 10 - < 15 year | 11 | 2 |
| 15 - < 21 year | 9 | 2 |
| 21 - < 31 year | 5 | 1.8 |
| 31 - < 41 year | 5 | 1.8 |
| 41 - < 51 year | 5 | 1.8 |
| 51 - < 61 year | 5 | 1.8 |
| ≥ 61 years | 5 | 1.8 |

Table 5: Time-use for landuse type agricultural residential area with vegetable garden (II)

| Age | Sleeping (t _{sleep}) h/d | Awake Inside (t _{in}) h/d | Outside (t _{out}) h/d | Total* on site h/d | EF _{week} d/w | EF _{year} w/y |
|----------------|--|---|---------------------------------------|--------------------------|---------------------------|---------------------------|
| 1 - < 3 year | 12 | 11.5 | 0.5 | 24 | 7 | 52 |
| 3 - < 6 year | 11 | 9.7 | 1.38 | 22.08 | 7 | 52 |
| 6 - < 10 year | 10 | 8.7 | 1.57 | 20.27 | 7 | 52 |
| 10 - < 15 year | 9 | 10.6 | 1.12 | 20.72 | 7 | 52 |
| 15 - < 21 year | 8 | 8.5 | 0.8 | 17.3 | 7 | 52 |
| 21 - < 31 year | 8 | 9.0 | 1.0 | 18 | 7 | 52 |
| 31 - < 41 year | 8 | 11.5 | 1.3 | 20.8 | 7 | 52 |
| 41 - < 51 year | 8 | 11.5 | 1.5 | 21 | 7 | 52 |
| 51 - < 61 year | 8 | 11.5 | 1.8 | 21.3 | 7 | 52 |
| ≥ 61 years | 8 | 11.5 | 1.7 | 21.2 | 7 | 52 |

* sum of hours 'sleeping', 'awake' and 'outside'

Table 6: Time-use for landuse type residential with vegetable garden (III)

| Age | Sleeping (t_{sleep}) | Awake Inside (t_{in}) | Outside (t_{out}) | Total* on site | EF _{week} | EF _{year} |
|----------------|------------------------------------|-------------------------------------|---------------------------------|-------------------|--------------------|--------------------|
| | h/d | h/d | h/d | h/d | d/w | w/y |
| 1 - < 3 year | 12 | 11.5 | 0.5 | 24 | 7 | 52 |
| 3 - < 6 year | 11 | 9.7 | 1.38 | 22.08 | 7 | 52 |
| 6 - < 10 year | 10 | 8.7 | 1.57 | 20.27 | 7 | 52 |
| 10 - < 15 year | 9 | 10.6 | 1.12 | 20.72 | 7 | 52 |
| 15 - < 21 year | 8 | 8.5 | 0.8 | 17.3 | 7 | 52 |
| 21 - < 31 year | 8 | 9.0 | 1.0 | 18 | 7 | 52 |
| 31 - < 41 year | 8 | 11.5 | 1.3 | 20.8 | 7 | 52 |
| 41 - < 51 year | 8 | 11.5 | 1.5 | 21 | 7 | 52 |
| 51 - < 61 year | 8 | 11.5 | 1.8 | 21.3 | 7 | 52 |
| ≥ 61 years | 8 | 11.5 | 1.7 | 21.2 | 7 | 52 |

* sum of hours 'sleeping', 'awake' and 'outside'

Table 7: Time-use for landuse type day recreation for children and adults (IVa)

| Age | Sleeping (t_{sleep}) | Awake Inside (t_{in}) | Outside (t_{out}) | Total* on site | EF _{week} | EF _{year} |
|----------------|------------------------------------|-------------------------------------|---------------------------------|-------------------|--------------------|--------------------|
| | h/d | h/d | h/d | h/d | d/w | w/y |
| 1 - < 3 year | 0 | 0 | 8 | 8 | 5 | 8 |
| 3 - < 6 year | 0 | 0 | 8 | 8 | 5 | 8 |
| 6 - < 10 year | 0 | 0 | 8 | 8 | 5 | 8 |
| 10 - < 15 year | 0 | 0 | 8 | 8 | 5 | 8 |
| 15 - < 21 year | 0 | 0 | 8 | 8 | 5 | 8 |
| 21 - < 31 year | 0 | 0 | 2.1 | 2.1 | 2 | 44 |
| 31 - < 41 year | 0 | 0 | 2.1 | 2.1 | 2 | 44 |
| 41 - < 51 year | 0 | 0 | 2.5 | 2.5 | 2 | 44 |
| 51 - < 61 year | 0 | 0 | 3.1 | 3.1 | 2 | 44 |
| ≥ 61 years | 0 | 0 | 3.1 | 3.1 | 2 | 44 |

* sum of hours 'sleeping', 'awake' and 'outside'

Table 8: Time-use for landuse type holiday resort for children and adults for mainly indoors (IVb)

| Age | Sleeping (t_{sleep}) h/d | Awake inside (t_{in}) h/d | Outside (t_{out}) h/d | Total* on site h/d | EF _{week} d/w | EF _{year} w/y |
|----------------|---|--|--|--------------------------|---------------------------|---------------------------|
| 1 - < 3 year | 12 | 9.1 | 2.9 | 24 | 7 | 8 |
| 3 - < 6 year | 11 | 9.8 | 3.2 | 24 | 7 | 8 |
| 6 - < 10 year | 10 | 10.4 | 3.6 | 24 | 7 | 8 |
| 10 - < 15 year | 9 | 11.3 | 3.7 | 24 | 7 | 8 |
| 15 - < 21 year | 8 | 12.3 | 3.7 | 24 | 7 | 8 |
| 21 - < 31 year | 8 | 12.3 | 3.7 | 24 | 7 | 8 |
| 31 - < 41 year | 8 | 12.3 | 3.7 | 24 | 7 | 8 |
| 41 - < 51 year | 8 | 12.3 | 3.7 | 24 | 7 | 8 |
| 51 - < 61 year | 8 | 12.3 | 3.7 | 24 | 7 | 8 |
| ≥ 61 years | 8 | 12.3 | 3.7 | 24 | 7 | 8 |

* sum of hours 'sleeping', 'awake' and 'outside'

Table 9: Time-use for landuse type light industry (Va)

| Age | Sleeping (t_{sleep}) h/d | Awake inside (t_{in}) h/d | Outside (t_{out}) h/d | Total* on site h/d | EF _{week} d/w | EF _{year} w/y |
|----------------|---|--|--|--------------------------|---------------------------|---------------------------|
| 1 - < 3 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 3 - < 6 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 6 - < 10 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 10 - < 15 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 15 - < 21 year | 0 | 7 | 1 | 8 | 5 | 47 |
| 21 - < 31 year | 0 | 7 | 1 | 8 | 5 | 47 |
| 31 - < 41 year | 0 | 7 | 1 | 8 | 5 | 47 |
| 41 - < 51 year | 0 | 7 | 1 | 8 | 5 | 47 |
| 51 - < 61 year | 0 | 7 | 1 | 8 | 5 | 47 |
| ≥ 61 years | 0 | 7 | 1 | 8 | 5 | 47 |

* sum of hours 'sleeping', 'awake' and 'outside'

Table 10: Time-use for landuse type heavy industry with outside activity (Vb)

| Age | Sleeping (t_{sleep}) h/d | Awake inside (t_{in}) h/d | Outside (t_{out}) h/d | Total* on site h/d | EF _{week} d/w | EF _{year} w/y |
|----------------|---|--|--|--------------------------|---------------------------|---------------------------|
| 1 - < 3 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 3 - < 6 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 6 - < 10 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 10 - < 15 year | 0 | 0 | 0 | 0 | 5 | 47 |
| 15 - < 21 year | 0 | 1 | 7 | 8 | 5 | 47 |
| 21 - < 31 year | 0 | 1 | 7 | 8 | 5 | 47 |
| 31 - < 41 year | 0 | 1 | 7 | 8 | 5 | 47 |
| 41 - < 51 year | 0 | 1 | 7 | 8 | 5 | 47 |
| 51 - < 61 year | 0 | 1 | 7 | 8 | 5 | 47 |
| ≥ 61 years | 0 | 1 | 7 | 8 | 5 | 47 |

* sum of hours 'sleeping', 'awake' and 'outside'

Table 11: Vegetable consumption data (Q_{veg} and $Q_{veg_category}$) (g fw/d)

| age | potatoes | | Root and tuberous plants | | | | Bulbous plants | | | Fruit vegetables | | | |
|----------------|---------------|--------|--------------------------|-------------------------------|-----------|-----------------------------------|------------------------------|------|-------------------------|------------------|----------|-------------------------------------|---------------------------|
| | potatoes | carrot | Scorzonera and parsnip | Other vegetables (as parsnip) | root (as) | Σ Root and tuberous plants | Bulbous vegetable (as onion) | leek | Σ bulbous plants | cucumber | tomatoes | Other fruit vegetables (as paprika) | Σ fruit vegetables |
| 1 - < 3 year | 36.30 | 9.12 | 0.24 | 0.45 | | 9.81 | 2.23 | 3.61 | 5.84 | 1.61 | 6.40 | 0.88 | 8.89 |
| 3 - < 6 year | 85.35 | 14.45 | 0.38 | 0.71 | | 15.54 | 3.53 | 5.73 | 9.25 | 2.56 | 10.13 | 1.39 | 14.09 |
| 6 - < 10 year | 100.81 | 15.43 | 0.48 | 0.81 | | 16.71 | 5.59 | 5.35 | 10.94 | 3.70 | 16.17 | 1.74 | 21.62 |
| 10 - < 15 year | 120.69 | 16.68 | 0.60 | 0.95 | | 18.24 | 8.25 | 4.86 | 13.10 | 5.18 | 23.93 | 2.19 | 31.30 |
| 15 - < 21 year | 140.21 | 21.57 | 0.79 | 1.45 | | 23.81 | 11.68 | 5.04 | 16.72 | 8.59 | 36.77 | 4.41 | 49.77 |
| 21 - < 31 year | 129.90 | 24.78 | 0.46 | 1.70 | | 26.94 | 13.85 | 5.30 | 19.14 | 16.98 | 53.14 | 9.03 | 79.15 |
| 31 - < 41 year | 124.54 | 24.78 | 0.46 | 1.70 | | 26.94 | 13.85 | 5.30 | 19.14 | 16.98 | 53.14 | 9.03 | 79.15 |
| 41 - < 51 year | 129.29 | 24.78 | 0.46 | 1.70 | | 26.94 | 13.85 | 5.30 | 19.14 | 16.98 | 53.14 | 9.03 | 79.15 |
| 51 - < 61 year | 134.31 | 24.78 | 0.46 | 1.70 | | 26.94 | 13.85 | 5.30 | 19.14 | 16.98 | 53.14 | 9.03 | 79.15 |
| \geq 61 year | 137.19 | 24.78 | 0.46 | 1.70 | | 26.94 | 13.85 | 5.30 | 19.14 | 16.98 | 53.14 | 9.03 | 79.15 |

Table 11: Vegetable consumption data (Qveg and Qveg_category) (g fw/d) (continued)

| age | cabbages | | | | Leafy vegetables | | | | | | | Σ leafy vegetables |
|----------------|----------|---------|--------------------------|--------------|------------------|---------|---------|--------|--------|----------------|--------------|--------------------|
| | cabbage | sprouts | Cauliflower and broccoli | Σ cabbages | lettuce | spinach | chicory | celery | endive | lamb's lettuce | | |
| 1 - < 3 year | 1.74 | 1.74 | 3.76 | 7.24 | 0.50 | 4.08 | 2.07 | 0.90 | 0.14 | 0.14 | 7.82 | |
| 3 - < 6 year | 2.76 | 2.76 | 5.95 | 11.47 | 0.79 | 6.46 | 3.28 | 1.42 | 0.22 | 0.22 | 12.39 | |
| 6 - < 10 year | 2.40 | 2.40 | 6.49 | 11.29 | 2.90 | 6.38 | 4.72 | 1.58 | 0.44 | 0.44 | 16.46 | |
| 10 - < 15 year | 1.93 | 1.93 | 7.19 | 11.06 | 5.62 | 6.28 | 6.58 | 1.88 | 0.72 | 0.72 | 21.80 | |
| 15 - < 21 year | 1.50 | 1.50 | 10.54 | 13.54 | 8.45 | 5.29 | 8.89 | 2.08 | 1.20 | 1.20 | 27.11 | |
| 21 - < 31 year | 2.50 | 2.50 | 13.50 | 18.50 | 10.56 | 8.54 | 9.33 | 2.43 | 0.92 | 0.92 | 32.70 | |
| 31 - < 41 year | 2.50 | 2.50 | 13.50 | 18.50 | 10.56 | 8.54 | 9.33 | 2.43 | 0.92 | 0.92 | 32.70 | |
| 41 - < 51 year | 2.50 | 2.50 | 13.50 | 18.50 | 10.56 | 8.54 | 9.33 | 2.43 | 0.92 | 0.92 | 32.70 | |
| 51 - < 61 year | 2.50 | 2.50 | 13.50 | 18.50 | 10.56 | 8.54 | 9.33 | 2.43 | 0.92 | 0.92 | 32.70 | |
| ≥ 61 year | 2.50 | 2.50 | 13.50 | 18.50 | 10.56 | 8.54 | 9.33 | 2.43 | 0.92 | 0.92 | 32.70 | |

Table 11: Vegetable consumption data (Qveg and Qveg_category) (g fw/d) (continued)

| age | Leguminous vegetables | | Σ | leguminous vegetables |
|----------------|-----------------------|------|--------------|--------------------------|
| | beans | peas | | |
| 1 - < 3 year | 3.47 | 2.00 | 5.47 | |
| 3 - < 6 year | 5.49 | 3.17 | 8.66 | |
| 6 - < 10 year | 6.42 | 3.51 | 9.94 | |
| 10 - < 15 year | 7.63 | 3.96 | 11.59 | |
| 15 - < 21 year | 9.60 | 4.19 | 13.80 | |
| 21 - < 31 year | 11.75 | 3.87 | 15.62 | |
| 31 - < 41 year | 11.75 | 3.87 | 15.62 | |
| 41 - < 51 year | 11.75 | 3.87 | 15.62 | |
| 51 - < 61 year | 11.75 | 3.87 | 15.62 | |
| \geq 61 year | 11.75 | 3.87 | 15.62 | |

Table 12: Consumption data for animal products (g/d)

| Age | Q _{beef} | Q _{organ_meat} | Q _{milk} | Q _{butter} | Q _{eggs} |
|----------------|-------------------|-------------------------|-------------------|---------------------|-------------------|
| 1 - < 3 year | 10.0 | 0.00 | 395 | 0.40 | 15 |
| 3 - < 6 year | 10.0 | 0.07 | 387 | 0.46 | 29 |
| 6 - < 10 year | 18.0 | 0.23 | 340 | 0.97 | 30 |
| 10 - < 15 year | 30.0 | 0.46 | 280 | 1.6 | 30 |
| 15 - < 21 year | 37.0 | 0.39 | 229 | 2.6 | 33 |
| 21 - < 31 year | 32.0 | 0.15 | 215 | 3.1 | 41 |
| 31 - < 41 year | 36.0 | 0.28 | 181 | 3.4 | 43 |
| 41 - < 51 year | 37.0 | 0.28 | 186 | 4.7 | 45 |
| 51 - < 61 year | 38.0 | 0.28 | 191 | 6.0 | 47 |
| ≥ 61 years | 35.0 | 0.28 | 211 | 7.5 | 44 |

Table 13: Fraction of intake from food and drinking-water coming from local sources

| food category | AGR (II) | RES-veg (III) | REC-dayout (IVa) | REC-stay (IVb) | IND-l (Va) | IND-h (Vb) |
|------------------------------|-------------|---------------|------------------|----------------|------------|------------|
| Potatoes | 0.5 | 0.39 | 0 | 0 | 0 | 0 |
| Root and tuberous plants | 1 | 0.36 | 0 | 0 | 0 | 0 |
| Bulbous plants | 1 | 0.52 | 0 | 0 | 0 | 0 |
| Fruit vegetables | 1 | 0.39 | 0 | 0 | 0 | 0 |
| Cabbage | 1 | 0.21 | 0 | 0 | 0 | 0 |
| Leafy vegetables | 1 | 0.36 | 0 | 0 | 0 | 0 |
| Leguminous plant | 1 | 0.42 | 0 | 0 | 0 | 0 |
| Stem plants | 1 | 0.10 | 0 | 0 | 0 | 0 |
| beef | 1 | 0 | 0 | 0 | 0 | 0 |
| organ meat | 1 | 0 | 0 | 0 | 0 | 0 |
| milk | 1 | 0 | 0 | 0 | 0 | 0 |
| butter | 1 | 0 | 0 | 0 | 0 | 0 |
| eggs | 1 | 0.6 | 0 | 0 | 0 | 0 |
| groundwater | 0 | 0 | 0 | 0 | 0 | 0 |
| RF _{drinking_water} | 1 | 1 | 0 | 1 | 0.5 | 0.5 |

Table 14: Soil adherence (AF_{soil_skin}) values in mg/m^2

| Age | AGR RES-vg (II/III) | REC-dayout (IVa) | REC-stay (IVb) | IND-l (Va) | IND-h (Vb) |
|----------------|------------------------|------------------|----------------|------------|------------|
| 1 - < 3 year | 2000 | 4000 | 4000 | 0 | 0 |
| 3 - < 6 year | 2000 | 4000 | 4000 | 0 | 0 |
| 6 - < 10 year | 2000 | 4000 | 4000 | 0 | 0 |
| 10 - < 15 year | 2000 | 4000 | 4000 | 0 | 0 |
| 15 - < 21 year | 1000 | 1000 | 1000 | 100 | 100 |
| 21 - < 31 year | 1000 | 1000 | 1000 | 100 | 100 |
| 31 - < 41 year | 1000 | 1000 | 1000 | 100 | 100 |
| 41 - < 51 year | 1000 | 1000 | 1000 | 100 | 100 |
| 51 - < 61 year | 1000 | 1000 | 1000 | 100 | 100 |
| ≥ 61 years | 1000 | 1000 | 1000 | 100 | 100 |

Table 15: Dust adherence (AF_{dust_skin}) values in mg/m^2

| Age | AGR RES-vg (II/III) | REC-dayout (IVa) | REC-stay (IVb) | IND-l (Va) | IND-h (Vb) |
|----------------|------------------------|------------------|----------------|------------|------------|
| 1 - < 3 year | 100 | 100 | 100 | 0 | 0 |
| 3 - < 6 year | 100 | 100 | 100 | 0 | 0 |
| 6 - < 10 year | 100 | 100 | 100 | 0 | 0 |
| 10 - < 15 year | 100 | 100 | 100 | 0 | 0 |
| 15 - < 21 year | 100 | 100 | 100 | 100 | 100 |
| 21 - < 31 year | 100 | 100 | 100 | 100 | 100 |
| 31 - < 41 year | 100 | 100 | 100 | 100 | 100 |
| 41 - < 51 year | 100 | 100 | 100 | 100 | 100 |
| 51 - < 61 year | 100 | 100 | 100 | 100 | 100 |
| ≥ 61 years | 100 | 100 | 100 | 100 | 100 |

Table 16: Skin surface area for soil contact (m²)

| Age | AGR RES-vg (II/III) | REC-dayout (IVa) | REC-stay (IVb) | IND-l (Va) | IND-h (Vb) |
|----------------|------------------------|------------------|----------------|------------|------------|
| 1 - < 3 year | 0.143 | 0.180 | 0.180 | 0.060 | 0.060 |
| 3 - < 6 year | 0.211 | 0.266 | 0.266 | 0.080 | 0.080 |
| 6 - < 10 year | 0.281 | 0.360 | 0.360 | 0.100 | 0.100 |
| 10 - < 15 year | 0.425 | 0.544 | 0.544 | 0.133 | 0.133 |
| 15 - < 21 year | 0.511 | 0.642 | 0.642 | 0.147 | 0.147 |
| 21 - < 31 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| 31 - < 41 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| 41 - < 51 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| 51 - < 61 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| ≥ 61 years | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |

Table 17: Skin surface area for dust contact (m²)

| Age | AGR RES-vg (II/III) | REC-dayout (IVa) | REC-stay (IVb) | IND-l (Va) | IND-h (Vb) |
|----------------|------------------------|------------------|----------------|------------|------------|
| 1 - < 3 year | 0.143 | 0.180 | 0.180 | 0.060 | 0.060 |
| 3 - < 6 year | 0.211 | 0.266 | 0.266 | 0.080 | 0.080 |
| 6 - < 10 year | 0.281 | 0.360 | 0.360 | 0.100 | 0.100 |
| 10 - < 15 year | 0.425 | 0.544 | 0.544 | 0.133 | 0.133 |
| 15 - < 21 year | 0.511 | 0.642 | 0.642 | 0.147 | 0.147 |
| 21 - < 31 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| 31 - < 41 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| 41 - < 51 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| 51 - < 61 year | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |
| ≥ 61 years | 0.566 | 0.703 | 0.703 | 0.152 | 0.152 |

Table 18: Showering and bathing frequency by land use

| Age | AGR / RES-veg / REC-stay (II/III/IVb) | | | | REC-dayout (IVa) | | | | IND-I / IND-h (Va/Vb) | | | |
|----------------|--|-------------|---------|-------------|---------------------|-------------|---------|-------------|--------------------------|-------------|---------|-------------|
| | showering | | bathing | | showering | | bathing | | showering | | bathing | |
| | d/week | EV (1/d) | d/week | EV (1/d) | d/week | EV (1/d) | d/week | EV (1/d) | d/week | EV (1/d) | d/week | EV (1/d) |
| 1 - < 3 year | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 - < 6 year | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 - < 10 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 - < 15 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 - < 21 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 21 - < 31 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 31 - < 41 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 41 - < 51 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 51 - < 61 year | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| ≥ 61 years | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |

Table 19: Weighting factors for differences in inhalation rate due to age (WF_{age}) and activity (WF_{act})

| age | WF_{age} | $WF_{activity}$ | | | |
|--------------|------------|--|----------------------|----------------------|--------------------------|
| | | AGR/RES-vg/REC-stay/shower II/III/IVa | REC-dayout* (IVa) | REC dayin** (IVb) | IND-I / IND-h (Va/Vb) |
| 1 - < 3 yr | 1.9 | 1 | 2.7 | 3.6 | 1.5 |
| 3 - < 6 yr | 1.8 | 1 | 2.7 | 3.6 | 1.5 |
| 6 - < 10 yr | 1.6 | 1 | 2.7 | 3.6 | 1.5 |
| 10 - < 15 yr | 1.3 | 1 | 2.7 | 3.6 | 1.5 |
| 15 - < 21 yr | 1.2 | 1 | 2.7 | 3.6 | 1.5 |
| adults | 1 | 1 | 3.6 | 3.6 | 1.5 |

*: assuming playing activities during summer holidays during the day until 21 years of age and sporting for adults;

** : assuming sporting for all ages