**Table S1**. Characteristic of sampling sites.

| No | Textural classification [43] | pH-KCl | OM [%] | Type of land use | Group [30] | No | Textural classification [43] | pH-KCl | OM [%] | Type of land use | Group [30] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | sand | 3.6 | 4.4 | cropland | II | **24** | sand | 5.2 | 8.1 | park | I |
| **2** | loamy sand | 4.3 | 12.4 | cropland | II | **25** | sand | 6.5 | 9.3 | park | I |
| **3** | sandy loam | 4.0 | 4.4 | wasteland | III | **26** | sand | 5.1 | 1.8 | cropland | II |
| **4** | sandy loam | 8.0 | 6.7 | cropland | II | **27** | loamy sand | 4.1 | 3.8 | cropland | II |
| **5** | sandy loam | 3.9 | 4.3 | cropland | II | **28** | loamy sand | 3.8 | 3.6 | cropland | II |
| **6** | loamy sand | 6.3 | 9.9 | wasteland | III | **29** | loamy sand | 4.4 | 3.2 | cropland | II |
| **7** | loamy sand | 4.3 | 5.4 | cropland | II | **30** | sand | 6.5 | 7.3 | park | I |
| **8** | sandy loam | 4.6 | 3.6 | cropland | II | **31** | loamy sand | 7.0 | 7.2 | park | I |
| **9** | sandy loam | 5.7 | 5.1 | cropland | II | **32** | sand | 7.1 | 5.5 | park | I |
| **10** | sandy loam | 4.1 | 5.1 | cropland | II | **33** | sand | 7.1 | 4.7 | urban and commercial area | I |
| **11** | sandy loam | 3.9 | 4.0 | cropland | II | **34** | sand | 6.3 | 7.9 | park | I |
| **12** | sand | 6.4 | 5.0 | cropland | II | **35** | sand | 6.0 | 6.8 | commercial area | I |
| **13** | sand | 5.6 | 3.2 | wasteland | III | **36** | sand | 6.8 | 7.2 | park | I |
| **14** | sand | 6.6 | 3.7 | wasteland | III | **37** | sand | 6.3 | 4.4 | lawn | I |
| **15** | sandy loam | 4.4 | 3.3 | cropland | II | **38** | sand | 6.6 | 2.7 | urban and service area | I |
| **16** | sandy loam | 4.3 | 7.8 | cropland | II | **39** | sand | 7.6 | 1.9 | industrial area | IV |
| **17** | sand | 3.8 | 2.9 | cropland | II | **40** | sand | 7.0 | 6.0 | urban area | I |
| **18** | sand | 5.0 | 4.6 | grassland | II | **41** | sand | 7.2 | 5.0 | traffic area | IV |
| **19** | sand | 7.0 | 3.6 | traffic area | IV | **42** | sand | 7.0 | 3.8 | park | I |
| **20** | sand | 7.1 | 6.7 | commercial and service area | I | **43** | sand | 7.2 | 5.4 | recreation area | I |
| **21** | sand | 6.8 | 1.8 | wasteland | III | **44** | sand | 7.6 | 10.0 | residential area | I |
| **22** | loamy sand | 6.1 | 4.0 | cropland | II | **45** | sand | 5.6 | 2.7 | residential area | I |
| **23** | sand | 3.5 | 2.6 | cropland | II | **46** | sand | 7.0 | 5.7 | residential area | I |

**Table S1**. Characteristic of sampling sites (continued).

| No | Textural classification [43] | pH-KCl | OM [%] | Type of land use | Group [30] | No | Textural classification [43] | pH-KCl | OM [%] | Type of land use | Group [30] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **47** | sand | 6.9 | 4.8 | grassland | II | **63** | loamy sand | 6.5 | 4.0 | wasteland | III |
| **48** | sand | 4.4 | 3.4 | traffic area | IV | **64** | sandy loam | 4.0 | 4.1 | wasteland | III |
| **49** | sand | 7.3 | 4.6 | wasteland | III | **65** | sandy loam | 4.0 | 4.4 | cropland | II |
| **50** | sand | 5.0 | 4.3 | cropland | II | **66** | sand | 7.3 | 2.7 | urban area | I |
| **51** | sand | 6.0 | 6.5 | residential area | I | **67** | sand | 5.0 | 7.3 | park | I |
| **52** | sand | 5.2 | 6.9 | industrial and commercial area | IV | **68** | sand | 7.2 | 3.0 | urban area | I |
| **53** | sand | 7.1 | 7.5 | industrial and commercial area | IV | **69** | sand | 6.7 | 4.2 | residential area | I |
| **54** | sand | 5.8 | 5.5 | cropland | II | **70** | sand | 7.2 | 2.7 | residential area | I |
| **55** | sand | 6.0 | 9.4 | grassland | II | **71** | sand | 6.2 | 2.9 | wasteland | III |
| **56** | loamy sand | 6.6 | 4.8 | urban and commercial area | I | **72** | sand | 7.2 | 4.3 | urban area | I |
| **57** | sand | 6.6 | 3.2 | wasteland | III | **73** | sand | 7.4 | 5.9 | urban area | I |
| **58** | sand | 6.7 | 7.6 | grassland | II | **74** | sand | 6.6 | 9.5 | park | I |
| **59** | loamy sand | 7.3 | 6.5 | traffic area | IV | **75** | sand | 7.2 | 8.2 | allotment gardens | II |
| **60** | sand | 6.9 | 3.9 | grassland | II | **76** | sand | 7.0 | 4.9 | recreation area | I |
| **61** | loamy sand | 6.6 | 5.0 | urban and commercial area | I | **77** | sand | 6.2 | 3.6 | residential area | I |
| **62** | loamy sand | 5.6 | 6.3 | urban and commercial area | I | **78** | sand | 7.3 | 4.0 | residential area | I |

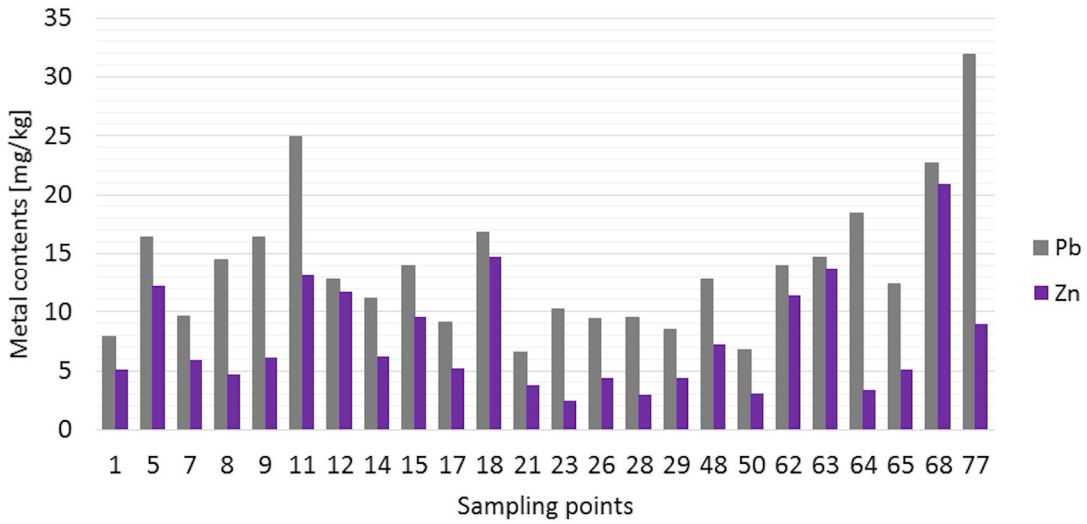


**Figure S1.** Comparison the lead and zinc contents for sampling points, which are characterized by higher lead contents.

**Table S2**. Metal mobile fraction (M) and total (T) contents in soils.

| No. | Pb | | Cd | | Cu | | Ni | | Zn | |
|---|---|---|---|---|---|---|---|---|---|---|
| | M [mg·kg$^{-1}$] | T [mg·kg$^{-1}$] | M [mg·kg$^{-1}$] | T [mg·kg$^{-1}$] | M [mg·kg$^{-1}$] | T [mg·kg$^{-1}$] | M [mg·kg$^{-1}$] | T [mg·kg$^{-1}$] | M [mg·kg$^{-1}$] | T [mg·kg$^{-1}$] |
| 1 | 7.89 | 12.8 | 0.14 | 0.92 | 1.09 | 2.53 | 0.57 | 6.80 | 5.09 | 11.9 |
| 2 | 48.6 | 61.9 | 0.76 | 1.55 | 48.4 | 68.9 | 3.89 | 14.4 | 65.2 | 144 |
| 3 | 15.9 | 22.7 | 0.21 | 0.87 | 3.49 | 5.84 | 0.65 | 11.3 | 16.2 | 41.4 |
| 4 | 103 | 193.4 | 2.09 | 2.54 | 16.4 | 45.9 | 6.26 | 23.2 | 357 | 760 |
| 5 | 16.4 | 25.1 | 0.22 | 0.54 | 6.09 | 9.01 | 0.97 | 14.0 | 12.2 | 38.7 |
| 6 | 33.0 | 44.7 | 0.62 | 0.79 | 17.4 | 33.8 | 3.00 | 29,1 | 66.9 | 172 |
| 7 | 9.58 | 18.6 | 0.17 | 1.04 | 2.44 | 3.76 | 3.60 | 23.9 | 5.94 | 21.7 |
| 8 | 14.5 | 22.4 | 0.19 | 0.77 | 2.45 | 3.58 | 1.95 | 13.1 | 4.66 | 25.0 |
| 9 | 16.4 | 23.2 | 0.22 | 0.64 | 3.04 | 4.11 | 0.90 | 11.3 | 6.11 | 27.3 |
| 10 | 14.3 | 24.3 | 0.22 | 0.63 | 2.99 | 5.24 | 0.98 | 12.9 | 14.7 | 58.1 |
| 11 | 24.9 | 258 | 0.23 | 2.46 | 8.11 | 39.2 | 1.66 | 38.6 | 13.1 | 425 |
| 12 | 12.8 | 25.4 | 0.24 | 0.93 | 5.48 | 9.74 | 1.11 | 12.2 | 11.7 | 39.6 |
| 13 | 13.4 | 22.5 | 0.19 | 63.6 | 3.36 | 6.10 | 0.79 | 11.9 | 13.5 | 40.2 |
| 14 | 11.2 | 17.6 | 0.17 | 0.58 | 3.15 | 5.82 | 1.10 | 11.3 | 6.23 | 23.7 |
| 15 | 14.0 | 22.3 | 0.24 | 0.91 | 4.25 | 5.79 | 1.37 | 15.0 | 9.58 | 45.4 |
| 16 | 8.73 | 18.5 | 0.11 | 1.24 | 2.82 | 9.33 | 0.81 | 10.4 | 9.39 | 51.9 |
| 17 | 9.13 | 17.4 | 0.08 | 1.17 | 1.54 | 2.99 | 0.61 | 7.54 | 5.23 | 27.5 |
| 18 | 16.8 | 22.3 | 0.17 | 0.40 | 3.65 | 7.36 | 1.16 | 14.6 | 147 | 48.4 |
| 19 | 8.93 | 15.1 | 0.14 | 0.21 | 3.21 | 4.52 | 1.65 | 11.7 | 13.7 | 25.0 |
| 20 | 35.8 | 270 | 0.57 | 7.25 | 22.7 | 53.6 | 4.83 | 24.6 | 83.4 | 152 |
| 21 | 6.53 | 12.7 | 0.13 | 0.17 | 1.14 | 2.28 | 0.63 | 9.66 | 3.84 | 14.4 |
| 22 | 12.1 | 17.7 | 0.18 | 1.01 | 4.32 | 6.83 | 1.01 | 11.1 | 15.0 | 56.4 |
| 23 | 10.2 | 21.9 | 0.05 | 0.96 | 2.35 | 4.94 | 0.33 | 11.7 | 2.45 | 35.2 |
| 24 | 45.0 | 62.2 | 0.74 | 0.87 | 24.5 | 34.4 | 4.19 | 23.2 | 67.9 | 107 |
| 25 | 41.5 | 58.8 | 0.63 | 1.30 | 32.4 | 48.4 | 3.35 | 24.1 | 85.5 | 189 |
| 26 | 9.37 | 18.0 | 0.11 | 1.18 | 1.60 | 2.21 | 0.43 | 7.14 | 4.36 | 17.3 |
| 27 | 10.9 | 22.9 | 0.17 | 0.91 | 1.93 | 30.4 | 0.76 | 10.3 | 23.1 | 90.1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 9.56 | 17.4 | 0.10 | 0.71 | 2.02 | 2.57 | 0.67 | 9.56 | 2.98 | 30.7 |
| 29 | 8.52 | 18.9 | 0.11 | 0.86 | 1.46 | 2.77 | 0.62 | 10.5 | 4.37 | 38.1 |
| 30 | 21.6 | 45.9 | 0.24 | 0.74 | 15.0 | 42.0 | 1.06 | 18.2 | 40.8 | 148 |
| 31 | 33.1 | 60.6 | 0.36 | 1.40 | 12.9 | 31.0 | 3.23 | 25.6 | 47.3 | 172 |
| 32 | 41.1 | 68.0 | 0.45 | 1.01 | 33.4 | 60.6 | 2.75 | 23.7 | 70.3 | 172 |
| 33 | 49.8 | 88.8 | 0.56 | 1.26 | 14.4 | 30.0 | 2.43 | 20.6 | 118 | 224 |
| 34 | 20.0 | 30.3 | 0.34 | 0.89 | 14.9 | 33.5 | 1.38 | 19.6 | 38.5 | 116 |
| 35 | 10.7 | 13.8 | 0.39 | 0.79 | 4.09 | 10.7 | 1.65 | 13.5 | 34.2 | 72.8 |
| 36 | 27.4 | 46.9 | 0.47 | 1.18 | 11.6 | 22.7 | 2.33 | 16.4 | 63.8 | 130 |
| 37 | 12.3 | 19.2 | 0.21 | 0.32 | 6.02 | 6.22 | 1.09 | 11.4 | 18.1 | 35.6 |
| 38 | 9.44 | 15.3 | 0.11 | 1.08 | 3.90 | 4.22 | 1.16 | 8.66 | 9.5 | 23.1 |
| 39 | 9.27 | 15.1 | 0.28 | 1.01 | 3.10 | 5.55 | 1.75 | 12.4 | 10.6 | 56.8 |
| 40 | 52.3 | 61.7 | 0.68 | 1.35 | 11.6 | 23.2 | 3.94 | 19.3 | 90.5 | 144 |
| 41 | 25.4 | 44.8 | 0.42 | 0.87 | 18.4 | 36.7 | 1.61 | 14.4 | 58.3 | 124 |
| 42 | 13.6 | 19.4 | 0.19 | 0.34 | 6.01 | 14.9 | 2.87 | 16.0 | 18.6 | 54.9 |
| 43 | 16.5 | 18.6 | 0.32 | 1.42 | 5.72 | 6.90 | 2.37 | 7.95 | 32.1 | 42.2 |
| 44 | 20.4 | 247 | 1.32 | 2.80 | 12.6 | 39.6 | 7.63 | 39.9 | 183 | 505 |
| 45 | 4.05 | 11.6 | 0.08 | 1.28 | 0.77 | 2.45 | 1.20 | 11.1 | 6.23 | 15.9 |
| 46 | 12.2 | 19.8 | 0.25 | 0.87 | 4.13 | 7.35 | 4.39 | 16.8 | 14.8 | 63.7 |
| 47 | 14.6 | 21.8 | 0.25 | 1.63 | 7.65 | 12.1 | 2.75 | 13.2 | 23.6 | 55.5 |
| 48 | 12.8 | 23.0 | 0.14 | 1.25 | 3.95 | 6.17 | 2.42 | 11.9 | 7.24 | 32.6 |
| 49 | 34.4 | 43.6 | 1.01 | 2.07 | 16.3 | 22.3 | 6.09 | 20.5 | 105 | 115 |
| 50 | 6.76 | 20.3 | 0.08 | 0.71 | 0.97 | 1.77 | 0.73 | 8.09 | 3.07 | 20.8 |
| 51 | 9.15 | 18.6 | 0.15 | 0.69 | 2.54 | 5.99 | 1.42 | 10.7 | 9.97 | 40.3 |
| 52 | 162 | 244 | 1.29 | 1.55 | 41.8 | 58.8 | 6.52 | 22.5 | 204 | 230 |
| 53 | 20.0 | 24.0 | 0.43 | 0.96 | 6.13 | 11.8 | 3.55 | 16.2 | 203 | 284 |
| 54 | 10.4 | 24.8 | 0.25 | 1.95 | 2.54 | 5.30 | 1.39 | 13.5 | 13,9 | 56.0 |
| 55 | 10.4 | 20.9 | 0.30 | 0.50 | 4.53 | 11.6 | 2.96 | 19.6 | 12.0 | 51.2 |
| 56 | 11.7 | 31.4 | 0.22 | 2.69 | 5.21 | 12.7 | 2.00 | 13.8 | 17.3 | 77.4 |
| 57 | 9.54 | 29.5 | 0.18 | 1.17 | 3.19 | 9.59 | 1.25 | 13.6 | 14.2 | 41.1 |
| 58 | 19.9 | 90.2 | 0.46 | 0.56 | 7.27 | 16.8 | 2.40 | 20.2 | 30.7 | 95.1 |
| 59 | 18.3 | 29.2 | 0.49 | 1.37 | 9.83 | 25.3 | 5.92 | 33.5 | 49.3 | 106 |
| 60 | 15.7 | 19.8 | 0.32 | 1.27 | 11.9 | 23.7 | 2.69 | 10.0 | 33.7 | 44.5 |
| 61 | 22.6 | 44.7 | 0.29 | 0.97 | 6.00 | 17.2 | 2.15 | 16.3 | 66.0 | 156 |
| 62 | 14.0 | 44.1 | 0.16 | 1.65 | 3.65 | 19.2 | 1.21 | 22.9 | 11.4 | 38.5 |
| 63 | 14.7 | 29.3 | 0.20 | 0.94 | 5.18 | 11.1 | 1.34 | 18.2 | 13.8 | 80.3 |
| 64 | 18.5 | 28.3 | 0.13 | 1.11 | 3.68 | 6.34 | 0.74 | 10.4 | 3.36 | 40.2 |
| 65 | 12.4 | 24.7 | 0.13 | 1.06 | 2.15 | 7.70 | 0.64 | 12.0 | 5.10 | 35.5 |
| 66 | 16.8 | 22.8 | 0.28 | 1.11 | 6.31 | 8.29 | 1.44 | 11.2 | 21.2 | 49.4 |
| 67 | 15.9 | 55.8 | 0.23 | 1.06 | 3.97 | 17.7 | 0.90 | 24.3 | 20.3 | 85.8 |
| 68 | 22.7 | 29.1 | 0.28 | 0.78 | 7.62 | 12.3 | 0.73 | 11.9 | 20.9 | 72.5 |
| 69 | 8.23 | 26.1 | 0.15 | 1.52 | 3.25 | 22.3 | 1.21 | 25.4 | 13.5 | 95.4 |
| 70 | 10.0 | 20.0 | 0.14 | 0.28 | 3.24 | 8.27 | 0.53 | 10.9 | 17.8 | 47.2 |
| 71 | 13.3 | 22.3 | 0.14 | 0.93 | 7.31 | 11.1 | 0.59 | 11.0 | 12.7 | 63.3 |
| 72 | 23.6 | 39.0 | 0.57 | 0.94 | 6.92 | 14.0 | 3.16 | 21.0 | 208 | 343 |
| 73 | 23.6 | 26.9 | 0.39 | 0.77 | 13.5 | 18.5 | 2.42 | 16.1 | 87.4 | 99.0 |
| 74 | 32.4 | 47.0 | 0.51 | 1.18 | 13.2 | 25.0 | 3.00 | 17.3 | 119 | 280 |
| 75 | 38.7 | 56.4 | 0.48 | 1.47 | 14.1 | 26.8 | 4.13 | 24.4 | 60.9 | 134 |
| 76 | 18.4 | 27.1 | 0.32 | 0.86 | 9.96 | 11.3 | 3.08 | 13.6 | 28.4 | 53.8 |
| 77 | 32.0 | 40.1 | 0.13 | 1.15 | 2.22 | 15.1 | 0.43 | 19.8 | 9.00 | 75.0 |
| 78 | 20.4 | 24.8 | 0.33 | 1.15 | 5.60 | 7.39 | 1.52 | 11.1 | 91.6 | 139 |

**Table S3.** Contamination factors (CF) and pollution load index (PLI).

| No | CF Pb | CF Cd | CF Cu | CF Ni | CF Zn | PLI | No | CF Pb | CF Cd | CF Cu | CF Ni | CF Zn | PLI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0.8 | 0.3 | 0.4 | 0.2 | 0.2 | 0.32 | **26** | 0.9 | 0.2 | 0.5 | 0.1 | 0.2 | 0.31 |
| **2** | 4.9 | 1.5 | 16.1 | 1.3 | **2.6** | **3.32** | **27** | 1.1 | 0.3 | 0.6 | 0.3 | 0.9 | 0.56 |
| **3** | 1.6 | 0.4 | 1.2 | 0.2 | 0.6 | 0.64 | **28** | 1.0 | 0.2 | 0.7 | 0.2 | 0.1 | 0.32 |
| **4** | 10.3 | 4.2 | 5.5 | 2.1 | **14.3** | **5.88** | **29** | 0.9 | 0.2 | 0.5 | 0.2 | 0.2 | 0.32 |
| **5** | 1.6 | 0.4 | 2.0 | 0.3 | 0.5 | 0.75 | **30** | 2.2 | 0.5 | 5.0 | 0.4 | 1.6 | **1.24** |
| **6** | 3.3 | 1.2 | 5.8 | 1.0 | **2.7** | **2.29** | **31** | 3.3 | 0.7 | 4.3 | 1.1 | 1.9 | **1.84** |
| **7** | 1.0 | 0.3 | 0.8 | 1.2 | 0.2 | 0.60 | **32** | 4.1 | 0.9 | 11.1 | 0.9 | 2.8 | **2.54** |
| **8** | 1.4 | 0.4 | 0.8 | 0.7 | 0.2 | 0.56 | **33** | 5.0 | 1.1 | 4.8 | 0.8 | 4.7 | **2.53** |
| **9** | 1.6 | 0.4 | 1.0 | 0.3 | 0.2 | 0.56 | **34** | 2.0 | 0.7 | 5.0 | 0.5 | 1.5 | **1.37** |
| **10** | 1.4 | 0.4 | 1.0 | 0.3 | 0.6 | 0.65 | **35** | 1.1 | 0.8 | 1.4 | 0.6 | 1.4 | 0.97 |
| **11** | 2.5 | 0.5 | 2.7 | 0.6 | 0.5 | 0.98 | **36** | 2.7 | 0.9 | 3.9 | 0.8 | 2.6 | **1.82** |
| **12** | 1.3 | 0.5 | 1.8 | 0.4 | 0.5 | 0.72 | **37** | 1.2 | 0.4 | 2.0 | 0.4 | 0.7 | 0.77 |
| **13** | 1.3 | 0.4 | 1.1 | 0.3 | 0.5 | 0.61 | **38** | 0.9 | 0.2 | 1.3 | 0.4 | 0.4 | 0.52 |
| **14** | 1.1 | 0.3 | 1.1 | 0.4 | 0.2 | 0.52 | **39** | 0.9 | 0.6 | 1.0 | 0.6 | 0.4 | 0.67 |
| **15** | 1.4 | 0.5 | 1.4 | 0.5 | 0.4 | 0.70 | **40** | 5.2 | 1.4 | 3.9 | 1.3 | 3.6 | **2.65** |
| **16** | 0.9 | 0.2 | 0.9 | 0.3 | 0.4 | 0.45 | **41** | 2.5 | 0.8 | 6.1 | 0.5 | 2.3 | **1.75** |
| **17** | 0.9 | 0.2 | 0.5 | 0.2 | 0.2 | 0.32 | **42** | 1.4 | 0.4 | 2.0 | 1.0 | 0.7 | 0.94 |
| **18** | 1.7 | 0.3 | 1.2 | 0.4 | 0.6 | 0.69 | **43** | 1.7 | 0.6 | 1.9 | 0.8 | 1.3 | **1.15** |
| **19** | 0.9 | 0.3 | 1.1 | 0.6 | 0.5 | 0.60 | **44** | 2.0 | 2.6 | 4.2 | 2.5 | 7.3 | **3.35** |
| **20** | 3.6 | 1.1 | 7.6 | 1.6 | **3.3** | **2.78** | **45** | 0.4 | 0.2 | 0.3 | 0.4 | 0.2 | 0.28 |
| **21** | 0.7 | 0.3 | 0.4 | 0.2 | 0.2 | 0.29 | **46** | 1.2 | 0.5 | 1.4 | 1.5 | 0.6 | 0.94 |
| **22** | 1.2 | 0.4 | 1.4 | 0.3 | 0.6 | 0.66 | **47** | 1.5 | 0.5 | 2.6 | 0.9 | 0.9 | **1.10** |
| **23** | 1.0 | 0.1 | 0.8 | 0.1 | 0.1 | 0.24 | **48** | 1.3 | 0.3 | 1.3 | 0.8 | 0.3 | 0.64 |
| **24** | 4.5 | 1.5 | 8.2 | 1.4 | **2.7** | **2.90** | **49** | 3.4 | 2.0 | 5.4 | 2.0 | 4.2 | **3.17** |
| **25** | 4.1 | 1.3 | 10.8 | 1.1 | **3.4** | **2.93** | **50** | 0.7 | 0.2 | 0.3 | 0.2 | 0.1 | 0.25 |
| **51** | 0.9 | 0.3 | 0.8 | 0.5 | 0.4 | 0.54 | **65** | 1.2 | 0.3 | 0.7 | 0.2 | 0.2 | 0.40 |
| **52** | 16.3 | 2.6 | 13.9 | 2.2 | 8.2 | **6.36** | **66** | 1.7 | 0.6 | 2.1 | 0.5 | 0.8 | 0.96 |
| **53** | 2.0 | 0.9 | 2.0 | 1.2 | 8.1 | **2.02** | **67** | 1.6 | 0.5 | 1.3 | 0.3 | 0.8 | 0.75 |
| **54** | 1.0 | 0.5 | 0.8 | 0.5 | 0.6 | 0.65 | **68** | 2.3 | 0.6 | 2.5 | 0.2 | 0.8 | 0.92 |
| **55** | 1.0 | 0.6 | 1.5 | 1.0 | 0.5 | 0.85 | **69** | 0.8 | 0.3 | 1.1 | 0.4 | 0.5 | 0.57 |
| **56** | 1.2 | 0.4 | 1.7 | 0.7 | 0.7 | 0.84 | **70** | 1.0 | 0.3 | 1.1 | 0.2 | 0.7 | 0.52 |
| **57** | 1.0 | 0.4 | 1.1 | 0.4 | 0.6 | 0.61 | **71** | 1.3 | 0.3 | 2.4 | 0.2 | 0.5 | 0.62 |
| **58** | 2.0 | 0.9 | 2.4 | 0.8 | 1.2 | **1.34** | **72** | 2.4 | 1.1 | 2.3 | 1.1 | 8.3 | **2.22** |
| **59** | 1.8 | 1.0 | 3.3 | 2.0 | 2.0 | **1.87** | **73** | 2.4 | 0.8 | 4.5 | 0.8 | 3.5 | **1.88** |
| **60** | 1.6 | 0.6 | 4.0 | 0.9 | 1.3 | **1.37** | **74** | 3.2 | 1.0 | 4.4 | 1.0 | 4.8 | **2.33** |
| **61** | 2.3 | 0.6 | 2.0 | 0.7 | 2.6 | **1.38** | **75** | 3.9 | 1.0 | 4.7 | 1.4 | 2.4 | **2.26** |
| **62** | 1.4 | 0.3 | 1.2 | 0.4 | 0.5 | 0.63 | **76** | 1.8 | 0.6 | 3.3 | 1.0 | 1.1 | **1.35** |
| **63** | 1.5 | 0.4 | 1.7 | 0.4 | 0.6 | 0.76 | **77** | 3.2 | 0.3 | 0.7 | 0.1 | 0.4 | 0.50 |
| **64** | 1.8 | 0.3 | 1.2 | 0.2 | 0.1 | 0.46 | **78** | 2.0 | 0.7 | 1.9 | 0.5 | 3.7 | **1.36** |

where: $CF = CF_{heavy\ metal}/CF_{background}$

$CF_b$ – background levels for anthropogenic fraction of metals are:
0.5 mg/kg (Cd); 10 mg/kg (Pb); 3 mg/kg (Ni, Cu); 25 mg/kg (Zn) [56]

CF [59]:

| | |
|---|---|
| $1 < CF$ | low contamination; |
| $1 \leq CF < 3$ | moderate contamination; |
| $3 \leq CF < 6$ | considerable contamination; |
| $CF \geq 6$ | very high contamination |

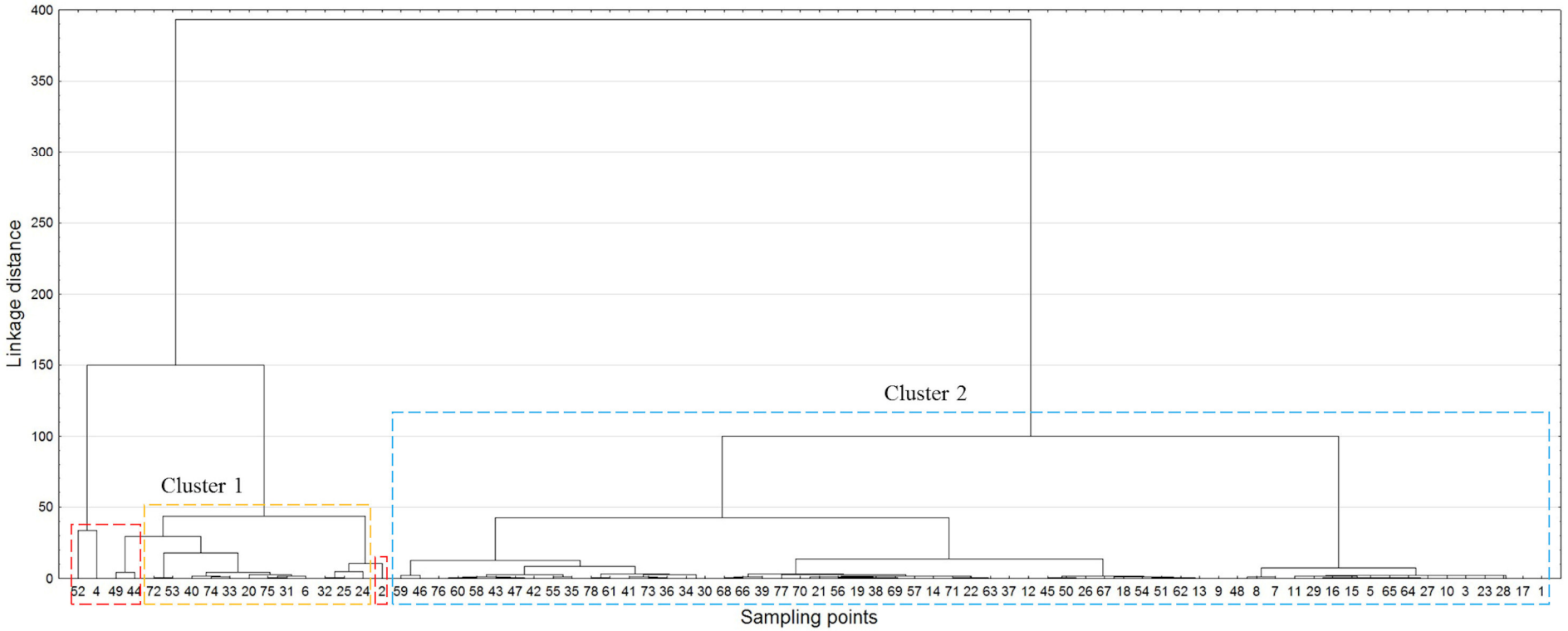


**Figure S2**. Dendrogram for sampling sites.

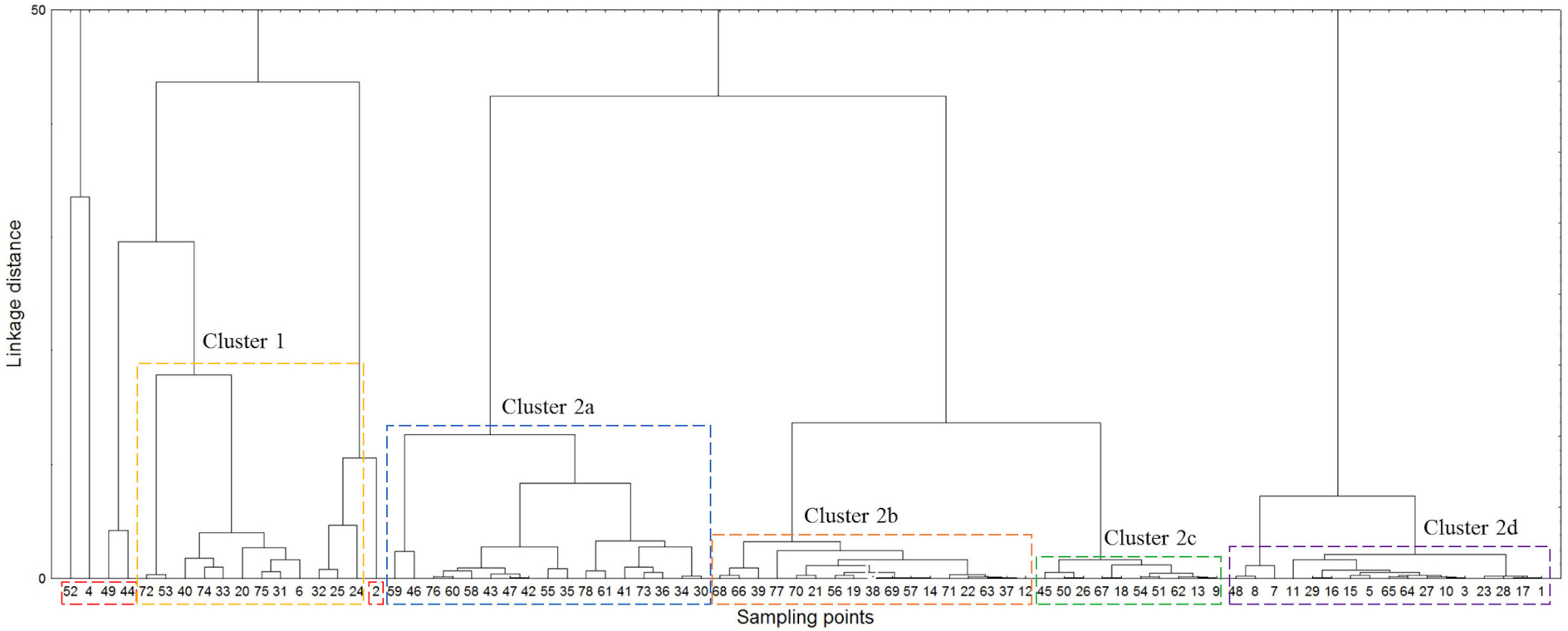


**Figure S3**. Dendrogram for sampling sites with scale of the linkage distance reducing to 50.

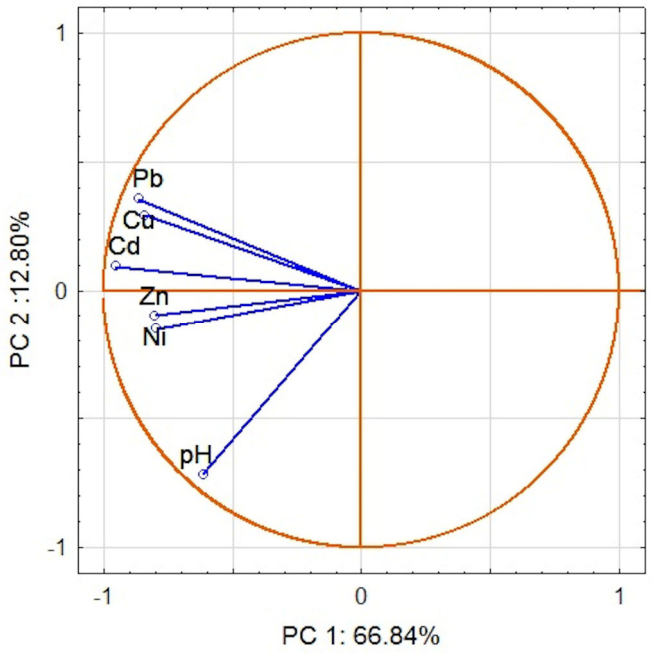


**Figure S4**. Loading plot of the two main components PC1 and PC2 for PCA without outliers.

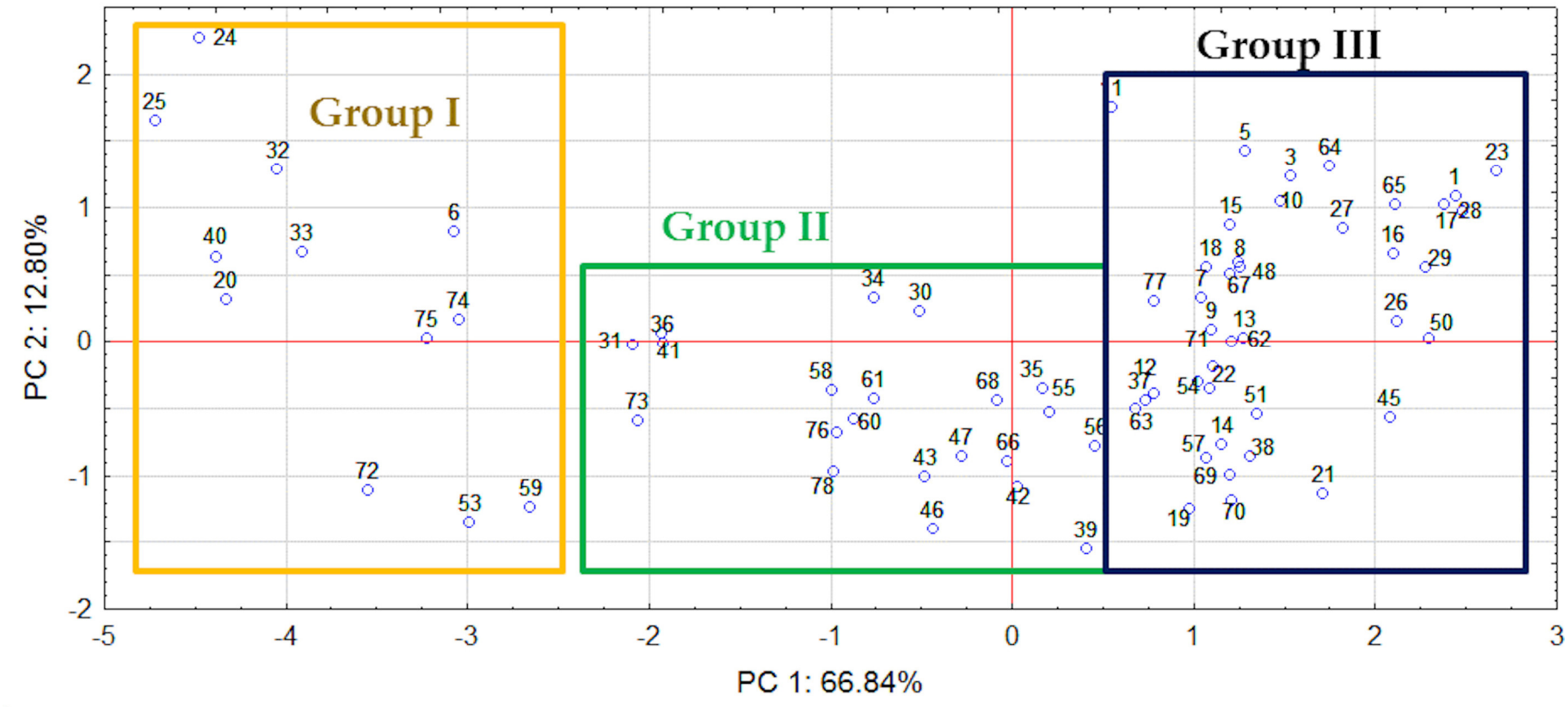


**Figure S5**. Score plot of PC1 versus PC2 for PCA without outliers.