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Supplement of

Evaluation of EURO-CORDEX (Coordinated Regional Climate Downscaling Experiment for the Euro-Mediterranean area) historical simulations by high-quality observational datasets in southern Italy: insights on drought assessment

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Table S1: Rain gauges used in the study and relative mean annual accumulated rainfall in the period 1971-2000.

| Station ID | Station Name         | Region      | Latitude | Longitude | Elevation | Annual mean (mm) |
|------------|----------------------|-------------|----------|-----------|-----------|------------------|
| C50        | Cancellara           | Basilicata  | 40.7340  | 15.9160   | 620       | 507              |
| C60        | Tolve                | Basilicata  | 40.6981  | 16.0290   | 568       | 608              |
| C230       | Potenza              | Basilicata  | 40.6370  | 15.8021   | 811       | 699              |
| C240       | Vaglio di Lucania    | Basilicata  | 40.6673  | 15.9160   | 933       | 832              |
| C280       | Calvello             | Basilicata  | 40.4673  | 15.8496   | 700       | 837              |
| C310       | Cognato              | Basilicata  | 40.5673  | 16.1320   | 557       | 752              |
| C320       | Calciano             | Basilicata  | 40.5840  | 16.1985   | 450       | 730              |
| C360       | Pisticci             | Basilicata  | 40.5840  | 16.7345   | 364       | 541              |
| C410       | San Mauro Forte      | Basilicata  | 40.4816  | 16.2511   | 504       | 697              |
| C470       | Tramutola            | Basilicata  | 40.3253  | 15.7740   | 654       | 1078             |
| C520       | San Martino d'Agri   | Basilicata  | 40.3007  | 16.0489   | 661       | 813              |
| C530       | Armento              | Basilicata  | 40.2840  | 16.1652   | 566       | 875              |
| C560       | Missanello           | Basilicata  | 40.3007  | 16.2317   | 497       | 743              |
| C570       | Aliano               | Basilicata  | 40.3007  | 16.1992   | 727       | 747              |
| C580       | Roccanova            | Basilicata  | 40.2106  | 16.1985   | 330       | 668              |
| C660       | Agromonte C. C.      | Basilicata  | 40.0673  | 16.0489   | 500       | 1162             |
| C690       | San Severino Lucano  | Basilicata  | 40.0173  | 16.1320   | 884       | 1417             |
| C710       | Carbone              | Basilicata  | 40.1340  | 16.0822   | 685       | 1024             |
| C760       | Senise               | Basilicata  | 40.1507  | 16.2815   | 330       | 668              |
| C780       | Cersosimo            | Basilicata  | 40.0507  | 16.3480   | 563       | 978              |
| C790       | Noepoli              | Basilicata  | 40.0897  | 16.3299   | 676       | 649              |
| C810       | Valsinni             | Basilicata  | 40.1673  | 16.4311   | 250       | 742              |
| C820       | Tursi                | Basilicata  | 40.2472  | 16.4802   | 348       | 712              |
| C830       | Nova Siri            | Basilicata  | 40.1507  | 16.5307   | 300       | 621              |
| C840       | Nova Siri Scalo      | Basilicata  | 40.1340  | 16.6304   | 2         | 539              |
| C850       | Nocara               | Calabria    | 40.0856  | 16.4817   | 830       | 621              |
| C860       | Montegiordano Scalo  | Calabria    | 40.0406  | 16.5981   | 7         | 467              |
| C880       | Castroregio          | Calabria    | 39.9937  | 16.4787   | 820       | 631              |
| C920       | Trebisacce           | Calabria    | 39.8656  | 16.5306   | 10        | 532              |
| C930       | Villapiana Scalo     | Calabria    | 39.7973  | 16.4819   | 5         | 479              |
| C940       | Francavilla Marittima| Calabria    | 39.8184  | 16.3851   | 272       | 618              |
| C950       | San Lorenzo Bellizzi | Calabria    | 39.8887  | 16.3290   | 851       | 928              |
| C970       | Cassano allo Ionio   | Calabria    | 39.7831  | 16.3189   | 251       | 686              |
| C980       | Piane Crati          | Calabria    | 39.2326  | 16.3229   | 583       | 1066             |
| C990       | Trenta               | Calabria    | 39.2801  | 16.3245   | 534       | 757              |
| C1000      | Domanico             | Calabria    | 39.2164  | 16.2075   | 736       | 1473             |
| Code | Name               | Region     | Latitude  | Longitude | Population |
|------|--------------------|------------|-----------|-----------|------------|
| C1010 | Cosenza            | Calabria   | 39.2869   | 16.2653   | 242        |
| C1020 | Cerisano           | Calabria   | 39.2811   | 16.1743   | 620        |
| C1030 | San Pietro in Guarano | Calabria   | 39.3456   | 16.3135   | 660        |
| C1040 | Rende              | Calabria   | 39.3312   | 16.1804   | 482        |
| C1050 | Rose               | Calabria   | 39.3984   | 16.2876   | 433        |
| C1070 | Laghitello C.C.    | Calabria   | 39.4381   | 16.1012   | 870        |
| C1080 | San Martino di Finita | Calabria   | 39.4898   | 16.1081   | 470        |
| C1100 | Cecita             | Calabria   | 39.4000   | 16.5378   | 1180       |
| C1110 | Pinutello C.C.     | Calabria   | 39.4515   | 16.4743   | 1005       |
| C1120 | Acri               | Calabria   | 39.4826   | 16.3935   | 790        |
| C1130 | Torano Scalo       | Calabria   | 39.4938   | 16.2098   | 97         |
| C1150 | Santa Sofia d'Epiro | Calabria   | 39.5476   | 16.3201   | 550        |
| C1170 | Morano Calabro     | Calabria   | 39.8401   | 16.1380   | 722        |
| C1180 | Castrovillari      | Calabria   | 39.7655   | 16.2542   | 353        |
| C1190 | Firmo              | Calabria   | 39.7220   | 16.1742   | 1369       |
| C1220 | Roggiano Gravina   | Calabria   | 39.6179   | 16.1504   | 264        |
| C1230 | San Sosti          | Calabria   | 39.6644   | 16.0279   | 404        |
| C1260 | San Marco Argentano | Calabria   | 39.5594   | 16.1108   | 430        |
| C1300 | San Giorgio Albanese | Calabria   | 39.5834   | 16.4529   | 430        |
| C1310 | Schiavonea         | Calabria   | 39.6534   | 16.5392   | 3          |
| C1320 | San Giacomo d'Acri | Calabria   | 39.5242   | 16.4651   | 724        |
| C1330 | Rossano            | Calabria   | 39.5745   | 16.6343   | 300        |
| C1360 | Longobucco         | Calabria   | 39.4461   | 16.6103   | 770        |
| C1370 | Bocchigliero       | Calabria   | 39.4173   | 16.7529   | 870        |
| C1380 | Cropalati          | Calabria   | 39.5157   | 16.7245   | 367        |
| C1390 | Crosia             | Calabria   | 39.5667   | 16.7729   | 279        |
| C1410 | Cariati Marina     | Calabria   | 39.5051   | 16.9402   | 10         |
| C1430 | Scala Coeli        | Calabria   | 39.4454   | 16.8898   | 330        |
| C1440 | Crucoli            | Calabria   | 39.4245   | 17.0038   | 367        |
| C1460 | Ciro' Marina       | Calabria   | 39.4079   | 17.1093   | 6          |
| C1470 | San Giovanni in Fiore | Calabria   | 39.2633   | 16.7157   | 1050       |
| C1500 | Nocelle - Arvo     | Calabria   | 39.2432   | 16.5449   | 1315       |
| C1510 | Sculca             | Calabria   | 39.3220   | 16.5023   | 1358       |
| C1540 | Berberano C.C.     | Calabria   | 39.1817   | 16.5748   | 1280       |
| C1550 | Trepido'           | Calabria   | 39.1887   | 16.6979   | 1295       |
| C1560 | Casa Pasquale      | Calabria   | 39.1812   | 16.7190   | 1246       |
| C1590 | Belvedere Spinello | Calabria   | 39.2071   | 16.8878   | 330        |
| C1620 | Verzino            | Calabria   | 39.3131   | 16.8620   | 550        |
| C1650 | Strongoli          | Calabria   | 39.2645   | 17.0470   | 342        |
| C1680 | Crotone            | Calabria   | 39.0870   | 17.1310   | 5          |
| Code  | Name                  | Region      | Latitude   | Longitude  | Population |
|-------|-----------------------|-------------|------------|------------|------------|
| C1690 | Capo Colonne          | Calabria    | 39.0287    | 17.2043    | 24         | 536        |
| C1720 | Steccato              | Calabria    | 38.9448    | 16.9229    | 15         | 600        |
| C1730 | Petilia Policastro    | Calabria    | 39.1108    | 16.7877    | 434        | 977        |
| C1760 | Botricello            | Calabria    | 38.9415    | 16.8586    | 18         | 449        |
| C1780 | Cropani               | Calabria    | 38.9710    | 16.7800    | 347        | 905        |
| C1800 | Sellia Marina         | Calabria    | 38.9060    | 16.7436    | 30         | 684        |
| C1830 | Albi                  | Calabria    | 39.0264    | 16.5982    | 710        | 1193       |
| C1840 | Sant'Elia             | Calabria    | 38.9645    | 16.5862    | 650        | 1158       |
| C1850 | Catanzaro             | Calabria    | 38.9108    | 16.5859    | 334        | 971        |
| C1860 | Catanzaro Lido        | Calabria    | 38.8206    | 16.6129    | 6          | 661        |
| C1880 | Fiorenza              | Calabria    | 39.0923    | 16.4934    | 1126       | 1275       |
| C1890 | Umbri                 | Calabria    | 39.0259    | 16.5134    | 885        | 1078       |
| C1920 | Borgia                | Calabria    | 38.8270    | 16.5076    | 332        | 958        |
| C1940 | Palermiti             | Calabria    | 38.7492    | 16.4528    | 480        | 1229       |
| C1950 | Staletti              | Calabria    | 38.7654    | 16.5388    | 390        | 873        |
| C1960 | Chiaravalle Centrale  | Calabria    | 38.6713    | 16.4088    | 714        | 1369       |
| C1980 | Serra San Bruno       | Calabria    | 38.5652    | 16.3197    | 790        | 1652       |
| C1990 | Simbario              | Calabria    | 38.6112    | 16.3268    | 760        | 1429       |
| C2010 | San Sostene           | Calabria    | 38.6375    | 16.4868    | 475        | 1442       |
| C2040 | Monasterace - Punta Stilo | Calabria | 38.4537    | 16.5522    | 70         | 669        |
| C2070 | Riace                 | Calabria    | 38.4179    | 16.4781    | 304        | 896        |
| C2080 | Placanica             | Calabria    | 38.4145    | 16.4704    | 250        | 916        |
| C2120 | Caulonia              | Calabria    | 38.3832    | 16.4114    | 275        | 921        |
| C2130 | Roccella Ionica       | Calabria    | 38.3216    | 16.3998    | 5          | 754        |
| C2150 | Fabrizza - Cassari    | Calabria    | 38.4421    | 16.2933    | 970        | 1620       |
| C2160 | Gioiososa Ionica      | Calabria    | 38.3011    | 16.3298    | 125        | 893        |
| C2170 | Siderno Marina        | Calabria    | 38.2741    | 16.2985    | 7          | 672        |
| C2180 | Antonimina - Canolo Nuovo | Calabria | 38.3131    | 16.1272    | 880        | 1736       |
| C2210 | Ardore Superiore      | Calabria    | 38.2059    | 16.1550    | 250        | 895        |
| C2230 | Plati'                | Calabria    | 38.2222    | 16.0444    | 300        | 1643       |
| C2260 | San Luca              | Calabria    | 38.1484    | 16.0672    | 250        | 1002       |
| C2270 | Sant'Agata del Bianco | Calabria    | 38.1007    | 16.0853    | 380        | 977        |
| C2290 | Staiti                | Calabria    | 37.9998    | 16.0354    | 550        | 1004       |
| C2310 | Capo Spartivento      | Calabria    | 37.9273    | 16.0561    | 48         | 631        |
| C2320 | Bova Superiore        | Calabria    | 37.9961    | 15.9328    | 905        | 778        |
| C2330 | Bova Marina           | Calabria    | 37.9313    | 15.9215    | 8          | 461        |
| C2350 | San Carlo             | Calabria    | 37.9592    | 15.8903    | 76         | 546        |
| C2370 | Melito di Porto Salvo | Calabria    | 37.9200    | 15.7714    | 7          | 528        |
| C2380 | Montebello Ionico     | Calabria    | 37.9839    | 15.7584    | 470        | 823        |
| C2390 | Capo dell'Armi        | Calabria    | 37.9648    | 15.6842    | 117        | 504        |
| Code | Town                     | Province | Latitude  | Longitude | Population |
|------|--------------------------|----------|-----------|-----------|------------|
| C2400 | Motta San Giovanni       | Calabria | 38.0026   | 15.6945   | 480        |
| C2420 | Armo                     | Calabria | 38.0703   | 15.7139   | 349        |
| C2480 | Gallicco Marina          | Calabria | 38.1656   | 15.6470   | 10         |
| C2510 | Scilla                   | Calabria | 38.2516   | 15.7197   | 73         |
| C2560 | Sinopoli                 | Calabria | 38.2599   | 15.8774   | 502        |
| C2570 | Oppido Mamertina - Castellac | Calabria | 38.3124   | 15.9401   | 189        |
| C2580 | Molochio                 | Calabria | 38.3088   | 16.0313   | 310        |
| C2600 | Cittanova                | Calabria | 38.3522   | 16.0775   | 407        |
| C2610 | Rizziconi                | Calabria | 38.4077   | 15.9716   | 114        |
| C2640 | Filogaso                 | Calabria | 38.6803   | 16.2306   | 286        |
| C2670 | Arena                    | Calabria | 38.5621   | 16.2169   | 450        |
| C2680 | Scilla                   | Calabria | 38.5240   | 16.1428   | 325        |
| C2690 | Rizziconi                | Calabria | 38.5567   | 16.0187   | 180        |
| C2720 | Polistena                | Calabria | 38.4065   | 16.0745   | 239        |
| C2730 | Mileto                   | Calabria | 38.6272   | 16.0669   | 368        |
| C2740 | Rosarno                  | Calabria | 38.5005   | 15.9880   | 61         |
| C2750 | Calimera                 | Calabria | 38.5567   | 16.0187   | 180        |
| C2760 | Joppolo                  | Calabria | 38.5920   | 15.9052   | 185        |
| C2770 | Tropea                   | Calabria | 38.6753   | 15.8944   | 51         |
| C2780 | Zungri                   | Calabria | 38.6535   | 15.9829   | 578        |
| C2790 | Briatico                 | Calabria | 38.7270   | 16.0365   | 25         |
| C2830 | Filadelfia               | Calabria | 38.7869   | 16.2930   | 550        |
| C2840 | Torre Mezzapraia         | Calabria | 38.8209   | 16.2204   | 20         |
| C2850 | Curinga Scalo            | Calabria | 38.8401   | 16.2612   | 25         |
| C2860 | San Tommaso              | Calabria | 39.0862   | 16.3768   | 820        |
| C2870 | Decollatura              | Calabria | 39.0464   | 16.3582   | 780        |
| C2890 | Tirolo                   | Calabria | 38.9395   | 16.5099   | 690        |
| C2900 | Marcellinara             | Calabria | 38.9287   | 16.4943   | 330        |
| C2960 | Sant'Eufemia Lamezia     | Calabria | 38.9215   | 16.2523   | 25         |
| C2980 | Savuto C.C.              | Calabria | 39.1626   | 16.5034   | 1205       |
| C3000 | Rogliano                 | Calabria | 39.1835   | 16.3257   | 650        |
| C3020 | Nocera Terinese          | Calabria | 39.0378   | 16.1663   | 250        |
| C3040 | Amantea                  | Calabria | 39.1492   | 16.0862   | 54         |
| C3050 | Fiumefreddo Bruzio       | Calabria | 39.2351   | 16.0710   | 220        |
| C3060 | Paola                    | Calabria | 39.3673   | 16.0420   | 160        |
| C3080 | Guardia Piemontese       | Calabria | 39.4667   | 15.9998   | 515        |
| C3090 | Cetraro Superiore        | Calabria | 39.5351   | 15.9640   | 416        |
| C3150 | Laino Borgo              | Calabria | 39.9544   | 15.9760   | 250        |
| C3160 | Campotenesi              | Calabria | 39.8726   | 16.0684   | 965        |
| C3190 | Orsomarso                | Calabria | 39.8001   | 15.9095   | 120        |
| Code | Town             | Region    | Latitude | Longitude | Population |
|------|------------------|-----------|----------|-----------|------------|
| C3200 | Scalea          | Calabria  | 39.8111  | 15.7923   | 10         | 892       |
| C3210 | Lagonegro       | Basilicata| 40.1342  | 15.7620   | 666        | 1674      |
| C3230 | Trecchina       | Basilicata| 40.0173  | 15.7831   | 500        | 1677      |
| C3240 | Lauria Inferiore| Basilicata| 40.0507  | 15.8330   | 630        | 1496      |
| C3250 | Aieta           | Calabria  | 39.9292  | 15.8237   | 524        | 1298      |
| C3260 | Maratea         | Basilicata| 39.9840  | 15.7167   | 300        | 1217      |
| S10   | Calvaruso       | Sicily    | 38.2242  | 15.4551   | 135        | 1000      |
| S20   | San Saba        | Sicily    | 38.2828  | 15.4978   | 24         | 761       |
| S40   | Monforte S. Giorgio | Sicily     | 38.1589  | 15.3842   | 293        | 888       |
| S50   | Santa Lucia del Mela | Sicily     | 38.1421  | 15.2844   | 280        | 817       |
| S70   | Castroreale     | Sicily    | 38.0999  | 15.2118   | 399        | 829       |
| S80   | Barcellona Pozzo di Gotto | Sicily | 38.1505  | 15.2193   | 49         | 745       |
| S100  | Rodi Milici     | Sicily    | 38.0839  | 15.1692   | 160        | 748       |
| S120  | Casale Tripi    | Sicily    | 38.0507  | 15.1007   | 430        | 692       |
| S130  | Montalbano Elicona | Sicily   | 38.0267  | 15.0098   | 907        | 974       |
| S140  | Tindari         | Sicily    | 38.1444  | 15.0449   | 280        | 716       |
| S150  | Raccuia         | Sicily    | 38.0535  | 14.9667   | 650        | 807       |
| S160  | Ficarra         | Sicily    | 38.0576  | 14.9099   | 541        | 877       |
| S170  | Tortorici       | Sicily    | 38.1100  | 14.8303   | 475        | 1039      |
| S220  | Militello Rosmarino | Sicily | 38.0318  | 14.8253   | 459        | 940       |
| S270  | Alcara Li Fusi  | Sicily    | 38.0453  | 14.6748   | 400        | 952       |
| S310  | San Fratello    | Sicily    | 38.0249  | 14.6990   | 690        | 858       |
| S320  | Caronia         | Sicily    | 38.0214  | 14.4429   | 302        | 620       |
| S330  | Mistretta       | Sicily    | 37.9271  | 14.3625   | 910        | 910       |
| S345  | Santo Stefano di Camastra | Sicily | 37.8673  | 14.3979   | 135        | 602       |
| S350  | Castel di Lucio | Sicily    | 37.8881  | 14.3130   | 772        | 837       |
| S360  | Tusa            | Sicily    | 37.9862  | 14.2370   | 535        | 819       |
| S370  | San Mauro Castelverde | Sicily | 37.9160  | 14.1920   | 1109       | 810       |
| S380  | Geraci Siculo   | Sicily    | 37.8639  | 14.1554   | 1070       | 858       |
| S380  | Geraci Siculo   | Sicily    | 37.8639  | 14.1554   | 1070       | 858       |
| S390  | Castelbuono     | Sicily    | 37.9315  | 14.0898   | 428        | 819       |
| S470  | Cefalù          | Sicily    | 38.0356  | 14.0170   | 30         | 637       |
| S480  | Collesano       | Sicily    | 37.9198  | 13.9383   | 481        | 812       |
| S520  | Scillato        | Sicily    | 37.8639  | 13.9150   | 376        | 700       |
| S530  | Caltavuturo     | Sicily    | 37.8209  | 13.8921   | 635        | 686       |
| S580  | Cerda           | Sicily    | 37.9033  | 13.8170   | 274        | 622       |
| S596  | Termini Imerese | Sicily    | 37.9864  | 13.6895   | 75         | 513       |
| S600  | Vicari          | Sicily    | 37.8293  | 13.5705   | 650        | 512       |
| S610  | Campofelice d'Italia | Sicily | 37.8282  | 13.4876   | 730        | 683       |
| S630  | Mezzojuso       | Sicily    | 37.8669  | 13.4668   | 517        | 749       |
| S650  | Caccamo         | Sicily    | 37.9342  | 13.6652   | 521        | 631       |
| Code | Town               | Province | Latitude   | Longitude  | Population |
|------|--------------------|----------|------------|------------|------------|
| S660 | Ciminna            | Sicily   | 37.8957    | 13.5598    | 525        |
| S690 | Capo Zafferano     | Sicily   | 38.1138    | 13.5382    | 22         |
| S720 | Ficuzza            | Sicily   | 37.8868    | 13.3793    | 681        |
| S730 | Marineo            | Sicily   | 37.9542    | 13.4153    | 540        |
| S760 | San Ciro           | Sicily   | 38.0888    | 13.3874    | 100        |
| S780 | Pioppo             | Sicily   | 38.0506    | 13.2331    | 495        |
| S790 | Altofonte          | Sicily   | 38.0443    | 13.2953    | 354        |
| S827 | San Martino delle Scale | Sicily | 38.0911    | 13.2539    | 570        |
| S850 | Partinico          | Sicily   | 38.0469    | 13.1177    | 189        |
| S860 | Cinis              | Sicily   | 38.1572    | 13.1074    | 120        |
| S875 | Palermo (Osservatorio) | Sicily | 38.1062    | 13.3346    | 37         |
| S920 | Palermo Sez. Idr.  | Sicily   | 38.1210    | 13.3579    | 19         |
| S950 | San Giuseppe Jato  | Sicily   | 37.9748    | 13.1869    | 462        |
| S975 | Alcamo             | Sicily   | 37.9798    | 12.9182    | 256        |
| S980 | Calatafimi         | Sicily   | 37.9167    | 12.8667    | 350        |
| S1010| Lentina            | Sicily   | 38.0539    | 12.6756    | 90         |
| S1030| Trapani            | Sicily   | 38.0164    | 12.5072    | 2          |
| S1050| San Vito lo Capo   | Sicily   | 38.1901    | 12.7332    | 3          |
| S1054| Specchia           | Sicily   | 37.9631    | 12.6795    | 140        |
| S1060| Fastia             | Sicily   | 37.9338    | 12.7338    | 218        |
| S1110| Ciavolo            | Sicily   | 37.7776    | 12.5491    | 120        |
| S1120| Marsala            | Sicily   | 37.7990    | 12.4387    | 12         |
| S1130| Petrosino (ex Milo) | Sicily | 37.7158    | 12.4919    | 2          |
| S1144| Mazara del Vallo   | Sicily   | 37.6586    | 12.5994    | 8          |
| S1150| Salemi             | Sicily   | 37.8194    | 12.8014    | 340        |
| S1180| Partanna           | Sicily   | 37.7311    | 12.8922    | 407        |
| S1190| Castelvetranano    | Sicily   | 37.6928    | 12.8006    | 190        |
| S1209| Piana dei Greci (Maganoces) | Sicily | 38.0016    | 13.2696    | 616        |
| S1230| Santa Cristina Gela | Sicily   | 37.9872    | 13.3270    | 656        |
| S1270| Corleone           | Sicily   | 37.8162    | 13.3019    | 588        |
| S1300| Roccamena          | Sicily   | 37.8381    | 13.1544    | 480        |
| S1310| Gibellina          | Sicily   | 37.7900    | 12.9727    | 410        |
| S1340| Menfi              | Sicily   | 37.6027    | 12.9632    | 119        |
| S1360| Sambuca di Sicilia | Sicily   | 37.6506    | 13.1114    | 296        |
| S1380| Sciacca            | Sicily   | 37.5130    | 13.0821    | 56         |
| S1405| Caltabellotta      | Sicily   | 37.5778    | 13.2159    | 949        |
| S1410| Prizzi             | Sicily   | 37.7233    | 13.4314    | 1100       |
| S1420| Piano del Leone    | Sicily   | 37.6735    | 13.4668    | 831        |
| S1430| Palazzo Adriano    | Sicily   | 37.6856    | 13.3801    | 679        |
| S1440| Chiusa Scalfani    | Sicily   | 37.6783    | 13.2707    | 614        |
| Code | Name                        | Region | Latitude | Longitude | Area | Population |
|------|-----------------------------|--------|----------|-----------|------|------------|
| S1450| Burgio                      | Sicily | 37.6031  | 13.2902   | 378  | 666        |
| S1460| Ribera                      | Sicily | 37.5003  | 13.2713   | 230  | 540        |
| S1480| Bivona                      | Sicily | 37.6209  | 13.4396   | 521  | 794        |
| S1490| Lercara Friddi              | Sicily | 37.7490  | 13.6005   | 658  | 549        |
| S1540| Castronovo di Sicilia       | Sicily | 37.6814  | 13.6054   | 661  | 708        |
| S1550| Casteltermini               | Sicily | 37.5431  | 13.6425   | 577  | 616        |
| S1560| San Cataldo                 | Sicily | 37.4865  | 13.9793   | 643  | 577        |
| S1600| Santa Caterina Villermosa   | Sicily | 37.5895  | 14.0299   | 606  | 544        |
| S1610| Valledolmo                  | Sicily | 37.7485  | 13.8275   | 750  | 606        |
| S1630| Marianopoli                 | Sicily | 37.5985  | 13.9150   | 700  | 403        |
| S1660| Valletunga Pratameno        | Sicily | 37.6853  | 13.8319   | 460  | 600        |
| S1680| Mussomeli                   | Sicily | 37.5811  | 13.7541   | 761  | 569        |
| S1700| Racalmuto                   | Sicily | 37.4100  | 13.7341   | 450  | 585        |
| S1710| Bompensiere                 | Sicily | 37.4745  | 13.7832   | 260  | 633        |
| S1720| San Biagio Platani          | Sicily | 37.5112  | 13.5245   | 408  | 610        |
| S1750| Cianciana                   | Sicily | 37.5223  | 13.4334   | 439  | 587        |
| S1760| Cattolica Eraclea           | Sicily | 37.4421  | 13.3971   | 150  | 496        |
| S1780| Raffadali                   | Sicily | 37.4059  | 13.5327   | 297  | 658        |
| S1810| Agrigento (Ispettorato)     | Sicily | 37.3130  | 13.5873   | 175  | 481        |
| S1830| Castrofilippo               | Sicily | 37.3511  | 13.7500   | 475  | 583        |
| S1840| Canicatti                   | Sicily | 37.3595  | 13.8504   | 470  | 578        |
| S1850| Palma di Montechiaro        | Sicily | 37.1942  | 13.7645   | 135  | 468        |
| S1860| Petralia Sottana            | Sicily | 37.8092  | 14.0924   | 930  | 794        |
| S1900| Alimena                     | Sicily | 37.6897  | 14.1146   | 775  | 538        |
| S1920| Resuttano                   | Sicily | 37.6813  | 14.0291   | 555  | 588        |
| S1960| Enna                        | Sicily | 37.5696  | 14.2731   | 950  | 656        |
| S1980| Villapriolo                 | Sicily | 37.6325  | 14.1882   | 565  | 564        |
| S1990| Villarosa                   | Sicily | 37.5873  | 14.1755   | 518  | 509        |
| S2000| Granci (Fattoria)           | Sicily | 37.4923  | 14.2398   | 572  | 544        |
| S2020| Caltanissetta               | Sicily | 37.4978  | 14.0577   | 375  | 510        |
| S2040| Pietrapertizia              | Sicily | 37.4222  | 14.1386   | 467  | 483        |
| S2100| Sommatino                   | Sicily | 37.3391  | 13.9959   | 349  | 474        |
| S2150| Ravanusa                    | Sicily | 37.2693  | 13.9746   | 306  | 492        |
| S2200| Licata                      | Sicily | 37.1025  | 13.9343   | 70   | 433        |
| S2220| Butera                      | Sicily | 37.1895  | 14.1849   | 390  | 477        |
| S2240| Gela                        | Sicily | 37.0652  | 14.2520   | 30   | 373        |
| S2248| Mazzarino                   | Sicily | 37.3044  | 14.2190   | 547  | 524        |
| S2250| Piazza Armerina             | Sicily | 37.3673  | 14.3346   | 721  | 643        |
| S2290| Monterosso Almo             | Sicily | 37.0890  | 14.7631   | 667  | 673        |
| S2300| Chiaramonte Gulfi           | Sicily | 37.0302  | 14.7037   | 672  | 756        |
| Code  | City            | Province | Longitude | Latitude | Population | Code |
|-------|-----------------|----------|-----------|----------|------------|------|
| S2345 | Acate           | Sicily   | 36.9984   | 14.4266  | 199        | 429  |
| S2350 | Vittoria        | Sicily   | 36.9531   | 14.5266  | 168        | 456  |
| S2370 | Ragusa          | Sicily   | 36.9242   | 14.7244  | 515        | 617  |
| S2380 | Modica          | Sicily   | 36.8605   | 14.7625  | 370        | 600  |
| S2390 | Scicli          | Sicily   | 36.7946   | 14.7068  | 130        | 484  |
| S2410 | Ispica          | Sicily   | 36.7864   | 14.9164  | 127        | 468  |
| S2420 | Cozzo Spadaro   | Sicily   | 36.6884   | 15.1321  | 50         | 481  |
| S2430 | Rosolini        | Sicily   | 36.8221   | 14.9522  | 137        | 611  |
| S2450 | Noto            | Sicily   | 36.927    | 15.0713  | 76         | 654  |
| S2468 | Canicattini Bagni | Sicily | 37.0369   | 15.0608  | 362        | 835  |
| S2470 | Palazzolo Acreide | Sicily | 37.0676   | 15.074   | 695        | 642  |
| S2490 | Sortino         | Sicily   | 37.1620   | 15.0278  | 435        | 798  |
| S2510 | Floridia        | Sicily   | 37.0831   | 15.1533  | 111        | 652  |
| S2540 | Siracusa        | Sicily   | 37.0626   | 15.2928  | 23         | 524  |
| S2550 | Augusta         | Sicily   | 37.2307   | 15.2245  | 11         | 536  |
| S2570 | Francofonte     | Sicily   | 37.2276   | 14.8811  | 281        | 676  |
| S2580 | Lentini (Città) | Sicily   | 37.2926   | 14.9989  | 43         | 582  |
| S2690 | Cesarò          | Sicily   | 37.8469   | 14.7099  | 1100       | 710  |
| S2750 | Troina          | Sicily   | 37.7839   | 14.5982  | 1074       | 604  |
| S2780 | Maletto         | Sicily   | 37.8302   | 14.8659  | 950        | 641  |
| S2790 | Bronte          | Sicily   | 37.7869   | 14.8335  | 780        | 582  |
| S2800 | Nicosia         | Sicily   | 37.7486   | 14.3973  | 650        | 719  |
| S2810 | Capizzi         | Sicily   | 37.8501   | 14.4784  | 1089       | 806  |
| S2830 | Cerami          | Sicily   | 37.8121   | 14.5096  | 980        | 648  |
| S2840 | Gagliano Castelferrato | Sicily | 37.7065   | 14.5348  | 837        | 613  |
| S2870 | Ragalna         | Sicily   | 37.6304   | 14.9407  | 700        | 613  |
| S2880 | Centuripe       | Sicily   | 37.6218   | 14.7419  | 733        | 407  |
| S2900 | Adriano         | Sicily   | 37.6675   | 14.8363  | 570        | 497  |
| S2910 | Paternò         | Sicily   | 37.5693   | 14.9106  | 240        | 447  |
| S2930 | Motta San Anastasia | Sicily | 37.5145   | 14.9681  | 254        | 494  |
| S2935 | Simeto (Stazione) | Sicily | 37.4565   | 14.9127  | 26         | 435  |
| S2940 | Leonforte       | Sicily   | 37.6400   | 14.3927  | 640        | 622  |
| S2960 | Valguarnera Caropepe | Sicily | 37.4960   | 14.3880  | 588        | 598  |
| S2980 | Catenanaovua    | Sicily   | 37.5724   | 14.6931  | 185        | 440  |
| S2990 | Castel di Judica | Sicily | 37.4956   | 14.6451  | 500        | 545  |
| S3020 | Aidone          | Sicily   | 37.4173   | 14.4468  | 816        | 737  |
| S3030 | Mirabella Imbaccari | Sicily | 37.3275   | 14.4473  | 469        | 587  |
| S3050 | Caltagirone     | Sicily   | 37.2414   | 14.5186  | 513        | 514  |
| S3060 | Mineo           | Sicily   | 37.2662   | 14.6909  | 524        | 601  |
| S3070 | Ramacca         | Sicily   | 37.3864   | 14.6960  | 257        | 452  |
| Station Code | Station Name                      | Region | Latitude  | Longitude | Elevation | Volcanic Activity |
|-------------|-----------------------------------|--------|-----------|-----------|------------|-------------------|
| S3090       | Nicolosi                          | Sicily | 37.6153   | 15.0273   | 695        | 1123              |
| S3100       | Fleri                             | Sicily | 37.6568   | 15.0994   | 620        | 1158              |
| S3110       | Zafferana Etnea                    | Sicily | 37.6941   | 15.1063   | 590        | 1330              |
| S3120       | Linguaglossa                       | Sicily | 37.8411   | 15.1451   | 530        | 1156              |
| S3130       | Viagrande                          | Sicily | 37.6113   | 15.0991   | 405        | 954               |
| S3140       | Piedimonte Etneo                   | Sicily | 37.8083   | 15.1790   | 348        | 999               |
| S3150       | Acireale                           | Sicily | 37.6222   | 15.1659   | 194        | 817               |
| S3155       | Catania (Osservatorio)             | Sicily | 37.5155   | 15.0872   | 75         | 609               |
| S3210       | Floresta                           | Sicily | 37.9878   | 14.9059   | 1270       | 1113              |
| S3270       | Roccella Valdemone                 | Sicily | 37.9357   | 15.0077   | 786        | 913               |
| S3280       | Francavilla di Sicilia             | Sicily | 37.9058   | 15.1374   | 319        | 985               |
| S3310       | Taormina                           | Sicily | 37.8553   | 15.2886   | 248        | 711               |
| S3320       | Antillo                            | Sicily | 37.9780   | 15.2453   | 480        | 1263              |
| S3340       | Casalvecchio Siculo                | Sicily | 37.9596   | 15.3231   | 420        | 889               |
| S3350       | Camaro                             | Sicily | 38.2111   | 15.5003   | 568        | 1041              |
| S3360       | Santo Stefano di Briga             | Sicily | 38.1007   | 15.4813   | 139        | 875               |
| S3370       | Messina (Osservatorio)             | Sicily | 38.2027   | 15.5541   | 54         | 803               |
| S3380       | Messina (Istituto Geofisico)       | Sicily | 38.2022   | 15.5548   | 54         | 727               |
| S3400       | Ganzirri                           | Sicily | 38.2576   | 15.6090   | 1          | 705               |
Table S2: Temperature stations used in the study and relative mean annual temperature in the period 1971-2000.

| Station ID | Station Name                | Region     | Latitude  | Longitude | Elevation | Annual mean (°C) |
|------------|-----------------------------|------------|-----------|-----------|------------|------------------|
| C140       | Tricarico                   | Basilicata | 40.6173   | 16.1486   | 698        | 13.3             |
| C200       | Matera                      | Basilicata | 40.6597   | 16.5954   | 450        | 15.2             |
| C230       | Potenza                     | Basilicata | 40.6370   | 15.8021   | 811        | 12.4             |
| C500       | Grumento Nova               | Basilicata | 40.2909   | 15.8969   | 585        | 13.2             |
| C620       | Stigliano                   | Basilicata | 40.3976   | 16.2274   | 908        | 12.3             |
| C810       | Valsinni                    | Basilicata | 40.1673   | 16.4311   | 250        | 16.0             |
| C840       | Nova Siri Scalo             | Basilicata | 40.1340   | 16.6304   | 2           | 16.9             |
| C930       | Villapiana Scalo            | Calabria   | 39.7973   | 16.4819   | 5           | 16.6             |
| C1010      | Cosenza                     | Calabria   | 39.2869   | 16.2653   | 242        | 16.7             |
| C1100      | Cecita                      | Calabria   | 39.4000   | 16.5378   | 1180       | 9.2              |
| C1130      | Torano Scalo                | Calabria   | 39.4938   | 16.2098   | 97         | 16.3             |
| C1180      | Castrovillari               | Calabria   | 39.7655   | 16.2542   | 353        | 15.0             |
| C1250      | Fagnano Castello            | Calabria   | 39.5640   | 16.0556   | 516        | 15.0             |
| C1260      | San Marco Argentano         | Calabria   | 39.5594   | 16.1108   | 430        | 15.3             |
| C1330      | Rossano                     | Calabria   | 39.5745   | 16.6343   | 300        | 16.1             |
| C1460      | Ciro’ Marina                | Calabria   | 39.4079   | 17.1093   | 6          | 17.0             |
| C1550      | Trepido’                    | Calabria   | 39.1887   | 16.6979   | 1295       | 9.5              |
| C1670      | Cutro                       | Calabria   | 39.0366   | 17.0152   | 169        | 16.9             |
| C1760      | Botricello                  | Calabria   | 38.9415   | 16.8586   | 18         | 17.4             |
| C1850      | Catanzaro                   | Calabria   | 38.0910   | 16.8559   | 334        | 16.2             |
| C1855      | Santa Maria di Catanzaro    | Calabria   | 38.8496   | 16.5977   | 70         | 17.8             |
| C1960      | Chiaravalle Centrale        | Calabria   | 38.6713   | 16.4088   | 714        | 13.5             |
| C1970      | Soverato Marina             | Calabria   | 38.6917   | 16.5444   | 29         | 17.9             |
| C1980      | Serra San Bruno             | Calabria   | 38.5652   | 16.3197   | 790        | 11.0             |
| C2120      | Caulonia                    | Calabria   | 38.3832   | 16.4114   | 275        | 16.7             |
| C2170      | Sidero Marina               | Calabria   | 38.2741   | 16.2985   | 7          | 18.1             |
| C2180      | Antoniminia - Canolo Nuovo  | Calabria   | 38.3131   | 16.1272   | 880        | 12.4             |
| C2210      | Ardore Superiore            | Calabria   | 38.2059   | 16.1550   | 250        | 17.9             |
| C2370      | Melito di Porto Salvo       | Calabria   | 37.9200   | 15.7714   | 7          | 18.0             |
| C2450      | Reggio Calabria             | Calabria   | 38.1078   | 15.6509   | 15         | 18.4             |
| C2470      | Gambarie d'Aspromonte       | Calabria   | 38.1929   | 15.8449   | 1200       | 9.9              |
| C2600      | Cittanova                   | Calabria   | 38.3522   | 16.0775   | 407        | 16.1             |
| C2730      | Mileto                      | Calabria   | 38.6272   | 16.0669   | 368        | 15.7             |
| C2740      | Rosarno                     | Calabria   | 38.5005   | 15.9880   | 61         | 17.1             |
| C2770      | Tropea                      | Calabria   | 38.6753   | 15.8944   | 51         | 18.0             |
| C2890      | Tiriolo                     | Calabria   | 38.9395   | 16.5099   | 690        | 14.2             |
| C2960      | Sant'Eufemia Lamezia        | Calabria   | 38.9215   | 16.2523   | 25         | 17.0             |
| C3000      | Rogliano                    | Calabria   | 39.1835   | 16.3257   | 650        | 14.1             |
| Code  | City            | Region   | Latitude | Longitude | Population | Density |
|-------|-----------------|----------|----------|-----------|------------|---------|
| C3050 | Fiumefreddo Bruzio | Calabria | 39.2351  | 16.0710   | 220        | 16.2    |
| C3210 | Lagonegro        | Basilicata | 40.1342 | 15.7620 | 666        | 12.7    |
| C3260 | Maratea          | Basilicata | 39.9840 | 15.7167  | 300        | 14.7    |
| S140  | Tindari          | Sicily   | 38.1444  | 15.0449   | 280        | 17.5    |
| S310  | San Fratello     | Sicily   | 38.0179  | 14.5990   | 690        | 16.3    |
| S470  | Cefalù           | Sicily   | 38.0356  | 14.0170   | 30         | 19.3    |
| S660  | Ciminna          | Sicily   | 37.8957  | 13.5598   | 525        | 16.3    |
| S720  | Ficuzza          | Sicily   | 37.8868  | 13.3793   | 681        | 15.6    |
| S850  | Partinico        | Sicily   | 38.0469  | 13.1177   | 189        | 18.2    |
| S920  | Palermo (Piazza Verdi) | Sicily | 38.0120 | 13.5598 | 19        | 19.3    |
| S950  | San Giuseppe Jato | Sicily | 37.9748 | 13.1869 | 462        | 18.3    |
| S1030 | Trapani          | Sicily   | 38.0164  | 13.3019   | 2          | 18.6    |
| S1050 | San Vito lo Capo | Sicily   | 38.1901  | 12.7332   | 3          | 19.2    |
| S1120 | Marsala          | Sicily   | 37.9900  | 12.4387   | 12         | 17.6    |
| S1140 | Mazara del Vallo | Sicily   | 37.6586  | 12.5994   | 8          | 18.7    |
| S1180 | Partanna         | Sicily   | 37.7311  | 12.8922   | 407        | 17.4    |
| S1270 | Corleone         | Sicily   | 37.8162  | 13.3019   | 588        | 16.7    |
| S1380 | Sciacca          | Sicily   | 37.5130  | 13.0821   | 56         | 18.2    |
| S1420 | Piano del Leone  | Sicily   | 37.6735  | 13.4668   | 831        | 14.1    |
| S1480 | Bivona           | Sicily   | 37.6209  | 13.4396   | 521        | 17.3    |
| S1490 | Lercara Friddi   | Sicily   | 37.7490  | 13.6005   | 658        | 15.7    |
| S1700 | Racalmuto        | Sicily   | 37.4100  | 13.7341   | 450        | 17.7    |
| S1810 | Agrigento (Ispettorato) | Sicily | 37.3130 | 13.5873 | 175        | 18.2    |
| S1860 | Petralia Sottana | Sicily   | 37.8092  | 14.0924   | 930        | 14.5    |
| S1960 | Enna             | Sicily   | 37.5696  | 14.2731   | 950        | 13.9    |
| S2020 | Caltanissetta    | Sicily   | 37.4978  | 14.0577   | 375        | 17.5    |
| S2200 | Licata           | Sicily   | 37.1025  | 13.9343   | 70         | 18.6    |
| S2240 | Gela             | Sicily   | 37.0652  | 14.2520   | 30         | 19.4    |
| S2250 | Piazza Armerina  | Sicily   | 37.3673  | 14.3346   | 721        | 15.7    |
| S2290 | Monterosso Almo  | Sicily   | 37.0890  | 14.7631   | 667        | 16.0    |
| S2350 | Vittoria         | Sicily   | 36.9531  | 14.5266   | 168        | 17.4    |
| S2370 | Ragusa           | Sicily   | 36.9242  | 14.7244   | 515        | 17.6    |
| S2420 | Cozzo Spadaro    | Sicily   | 36.6884  | 15.1321   | 50         | 18.6    |
| S2540 | Siracusa         | Sicily   | 37.0626  | 15.2928   | 23         | 18.5    |
| S2580 | Lentini (Città)  | Sicily   | 37.2926  | 14.9989   | 43         | 19.0    |
| S2690 | Cesarò           | Sicily   | 37.8469  | 14.7099   | 1100       | 13.0    |
| S2900 | Adriano          | Sicily   | 37.6675  | 14.8363   | 570        | 17.2    |
| S3050 | Caltagirone     | Sicily   | 37.2414  | 14.5186   | 513        | 16.7    |
| S3090 | Nicolosi         | Sicily   | 37.6153  | 15.0273   | 695        | 15.8    |
| S3110 | Zafferana Etnea  | Sicily   | 37.6941  | 15.1063   | 590        | 16.1    |
| Code    | Location                  | Country | Latitude  | Longitude | Depth (km) | Magnitude |
|---------|---------------------------|---------|-----------|-----------|------------|------------|
| S3120   | Linguaglossa              | Sicily  | 37.8411   | 15.1451   | 530        | 15.6       |
| S3150   | Acireale                  | Sicily  | 37.6222   | 15.1659   | 194        | 18.3       |
| S3155   | Catania (Osservatorio)    | Sicily  | 37.5155   | 15.0872   | 75         | 19.7       |
| S3210   | Floresta                  | Sicily  | 37.9878   | 14.9059   | 1270       | 11.5       |
| S3310   | Taormina                  | Sicily  | 37.8553   | 15.2886   | 248        | 20.6       |
| S3380   | Messina (Istituto Geofisico) | Sicily  | 38.2022   | 15.5548   | 54         | 18.6       |