



REGIONE  
BASILICATA



PROVINCIA DI  
POTENZA



COMUNE DI  
SANT'ARCANGELO

OGGETTO:

PROGETTO DEFINITIVO PER LA REALIZZAZIONE DI UN PARCO AGRI-VOLTAICO A TERRA "SANT'ARC. 1" DELLA POTENZA NOMINALE DI 50 MW LOCALITA' "MONTICELLI" NEL COMUNE DI SANT'ARCANGELO (PZ)

ELABORATO:

## REPORT ANALISI IDROLOGICA E IDRAULICA BACINI IDROGRAFICI



PROPONENTE:

COMPAGNIA DEL SOLE TRE S.R.L.  
P.IVA IT04320520986  
VIA ALDO MORO, 28  
25043- BRENO (BS)

PROGETTAZIONE:

Ing. Carmen Martone  
Iscr. n. 1872  
Ordine Ingegneri Potenza  
C.F. MRTCMN73D56H703E



Geol. Raffaele Nardone  
Iscr. n. 243  
Ordine Geologi Basilicata  
C.F. NRDRFL71H04A509H



EGM PROJECT S.R.L.  
VIA VERRASTRO 15/A  
85100- POTENZA (PZ)  
P.IVA 02094310766  
REA PZ-206983

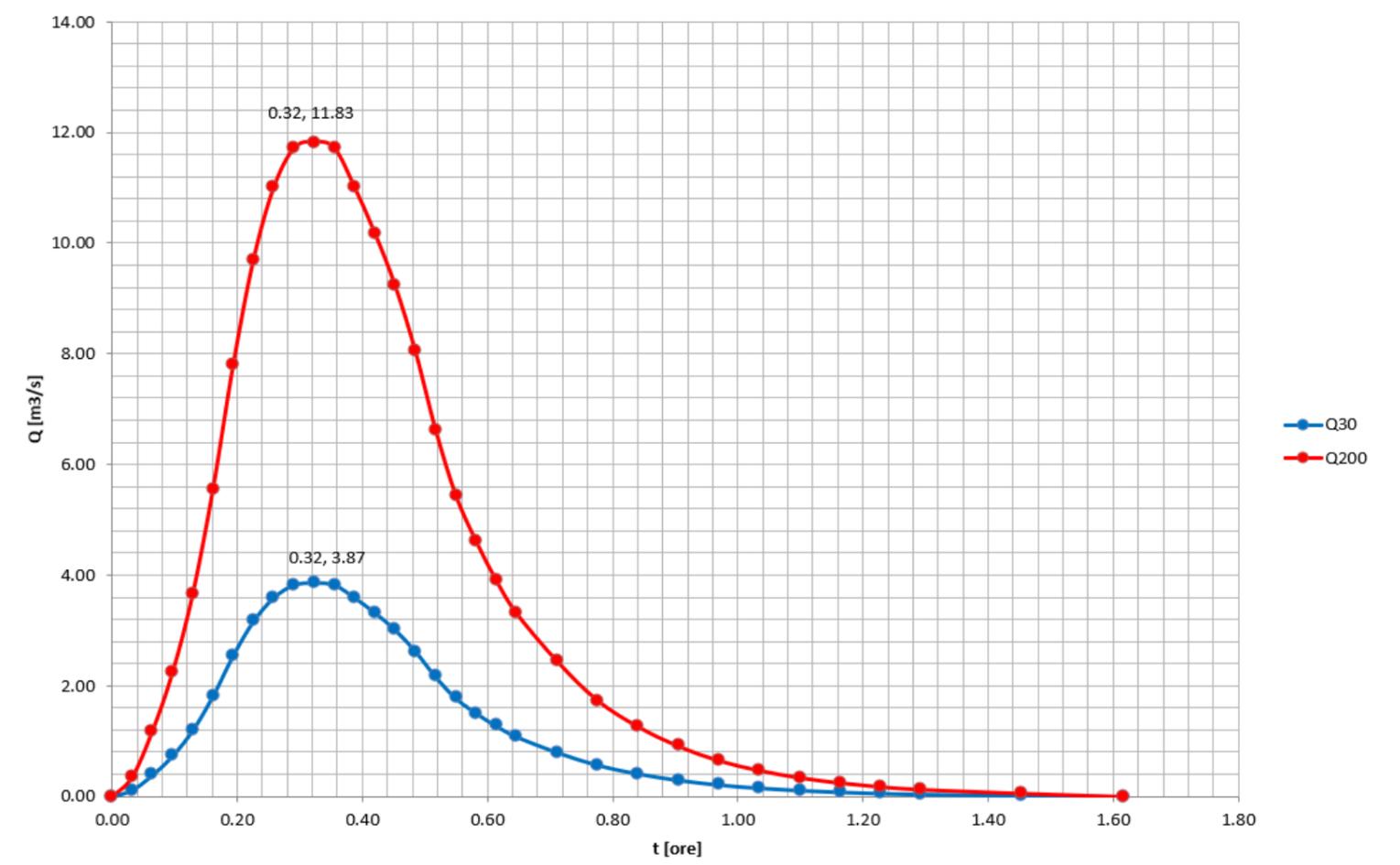
| Livello prog. | Cat. opera   | N°. prog.elaborato | Tipo elaborato | N° foglio | Tot. fogli | Nome file                             | Scala                              |
|---------------|--------------|--------------------|----------------|-----------|------------|---------------------------------------|------------------------------------|
| PD            | I.IF         | A.3.1              | R              |           |            |                                       |                                    |
| REV.          | DATA         | DESCRIZIONE        |                |           | ESEGUITO   | VERIFICATO                            | APPROVATO                          |
| 00            | GENNAIO 2023 | Emissione          |                |           |            | Geol. Raffaele Nardone<br>EGM Project | Ing. Carmen Martone<br>EGM Project |

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

| BACINO 1               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |                 |           |                |
|------------------------|------|----------|----------|----------|----------|----------|-------|-------|-------|------------------|-------------------|-----------------|------------------|-----------------|-----------|----------------|
| PARAMETRI MORFOMETRICI |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |                 |           |                |
| VERSANTE               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  | ASTA PRINCIPALE |           |                |
| Superficie             |      | quote    |          |          |          | pendenze |       |       |       | SCS              |                   |                 |                  | $\phi$          | lunghezza | pendenza media |
|                        |      | min      | max      | range    | media    | min      | max   | range | media | CN <sub>II</sub> | CN <sub>III</sub> | S <sub>II</sub> | S <sub>III</sub> |                 |           |                |
| mq                     | kmq  | m.s.l.m. | m.s.l.m. | m.s.l.m. | m.s.l.m. | %        | %     | %     | %     |                  |                   |                 |                  |                 | km        | m/m            |
| 909219.24              | 0.91 | 238.20   | 421.86   | 183.66   | 308.51   | 0.50     | 90.00 | 89.50 | 23.82 | 80.53            | 90.58             | 61.42           | 26.41            | 0.61            | 1.698     | 10.81%         |

| t(h)        | Q30         | Q200         |
|-------------|-------------|--------------|
| 0.00        | 0.00        | 0.00         |
| 0.03        | 0.12        | 0.35         |
| 0.06        | 0.39        | 1.18         |
| 0.10        | 0.73        | 2.25         |
| 0.13        | 1.20        | 3.67         |
| 0.16        | 1.82        | 5.56         |
| 0.19        | 2.55        | 7.81         |
| 0.23        | 3.17        | 9.70         |
| 0.26        | 3.60        | 11.00        |
| 0.29        | 3.83        | 11.71        |
| <b>0.32</b> | <b>3.87</b> | <b>11.83</b> |
| 0.36        | 3.83        | 11.71        |
| 0.39        | 3.60        | 11.00        |
| 0.42        | 3.32        | 10.17        |
| 0.45        | 3.02        | 9.23         |
| 0.48        | 2.63        | 8.04         |
| 0.52        | 2.16        | 6.62         |
| 0.55        | 1.78        | 5.44         |
| 0.58        | 1.51        | 4.61         |
| 0.61        | 1.28        | 3.90         |
| 0.65        | 1.08        | 3.31         |
| 0.71        | 0.80        | 2.45         |
| 0.78        | 0.57        | 1.74         |
| 0.84        | 0.41        | 1.27         |
| 0.91        | 0.30        | 0.91         |
| 0.97        | 0.21        | 0.65         |
| 1.03        | 0.15        | 0.47         |
| 1.10        | 0.11        | 0.34         |
| 1.16        | 0.08        | 0.25         |
| 1.23        | 0.06        | 0.18         |
| 1.29        | 0.04        | 0.13         |
| 1.45        | 0.02        | 0.06         |
| 1.62        | 0.00        | 0.00         |

|      | a     | n     | t <sub>i</sub> [ore] | t <sub>p</sub> =t <sub>c</sub> [ore] | t <sub>a</sub> [ore] | h(t <sub>c</sub> ) | V[mm] | Q <sub>p</sub> [m <sup>3</sup> /s] |
|------|-------|-------|----------------------|--------------------------------------|----------------------|--------------------|-------|------------------------------------|
| T30  | 35.02 | 0.372 | 0.18                 | 0.29                                 | 0.32                 | 22.20              | 6.61  | 3.87                               |
| T200 | 64.05 | 0.372 |                      |                                      |                      | 40.61              | 20.22 | 11.83                              |

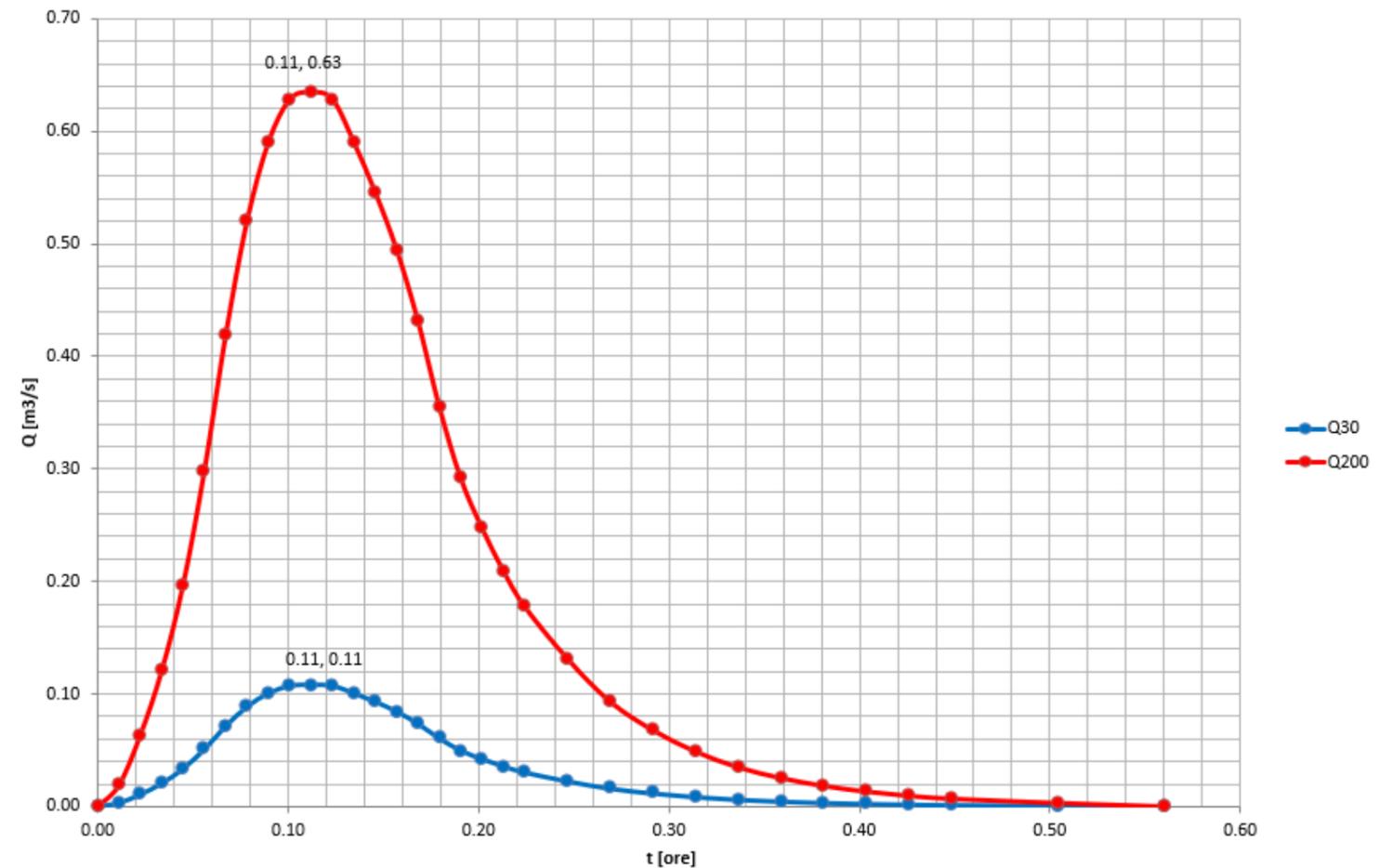


**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

| BACINO 2               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |        |                 |                |
|------------------------|------|----------|----------|----------|----------|----------|-------|-------|-------|------------------|-------------------|-----------------|------------------|--------|-----------------|----------------|
| PARAMETRI MORFOMETRICI |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |        |                 |                |
| VERSANTE               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |        | ASTA PRINCIPALE |                |
| Superficie             |      | quote    |          |          |          | pendenze |       |       |       | SCS              |                   |                 |                  | $\phi$ | lunghezza       | pendenza media |
|                        |      | min      | max      | range    | media    | min      | max   | range | media | CN <sub>II</sub> | CN <sub>III</sub> | S <sub>II</sub> | S <sub>III</sub> |        |                 |                |
| mq                     | kmq  | m.s.l.m. | m.s.l.m. | m.s.l.m. | m.s.l.m. | %        | %     | %     | %     |                  |                   |                 |                  |        | km              | m/m            |
| 52241.20               | 0.05 | 256.68   | 367.41   | 110.73   | 300.33   | 1.03     | 90.00 | 88.97 | 25.72 | 73.67            | 86.68             | 90.76           | 39.03            | 0.31   | 0.392           | 28.24%         |

| t(h) | Q30  | Q200 |
|------|------|------|
| 0.00 | 0.00 | 0.00 |
| 0.01 | 0.00 | 0.02 |
| 0.02 | 0.01 | 0.06 |
| 0.03 | 0.02 | 0.12 |
| 0.04 | 0.03 | 0.20 |
| 0.06 | 0.05 | 0.30 |
| 0.07 | 0.07 | 0.42 |
| 0.08 | 0.09 | 0.52 |
| 0.09 | 0.10 | 0.59 |
| 0.10 | 0.11 | 0.63 |
| 0.11 | 0.11 | 0.63 |
| 0.12 | 0.11 | 0.63 |
| 0.13 | 0.10 | 0.59 |
| 0.15 | 0.09 | 0.55 |
| 0.16 | 0.08 | 0.49 |
| 0.17 | 0.07 | 0.43 |
| 0.18 | 0.06 | 0.36 |
| 0.19 | 0.05 | 0.29 |
| 0.20 | 0.04 | 0.25 |
| 0.21 | 0.04 | 0.21 |
| 0.22 | 0.03 | 0.18 |
| 0.25 | 0.02 | 0.13 |
| 0.27 | 0.02 | 0.09 |
| 0.29 | 0.01 | 0.07 |
| 0.31 | 0.01 | 0.05 |
| 0.34 | 0.01 | 0.03 |
| 0.36 | 0.00 | 0.03 |
| 0.38 | 0.00 | 0.02 |
| 0.40 | 0.00 | 0.01 |
| 0.43 | 0.00 | 0.01 |
| 0.45 | 0.00 | 0.01 |
| 0.50 | 0.00 | 0.00 |
| 0.56 | 0.00 | 0.00 |

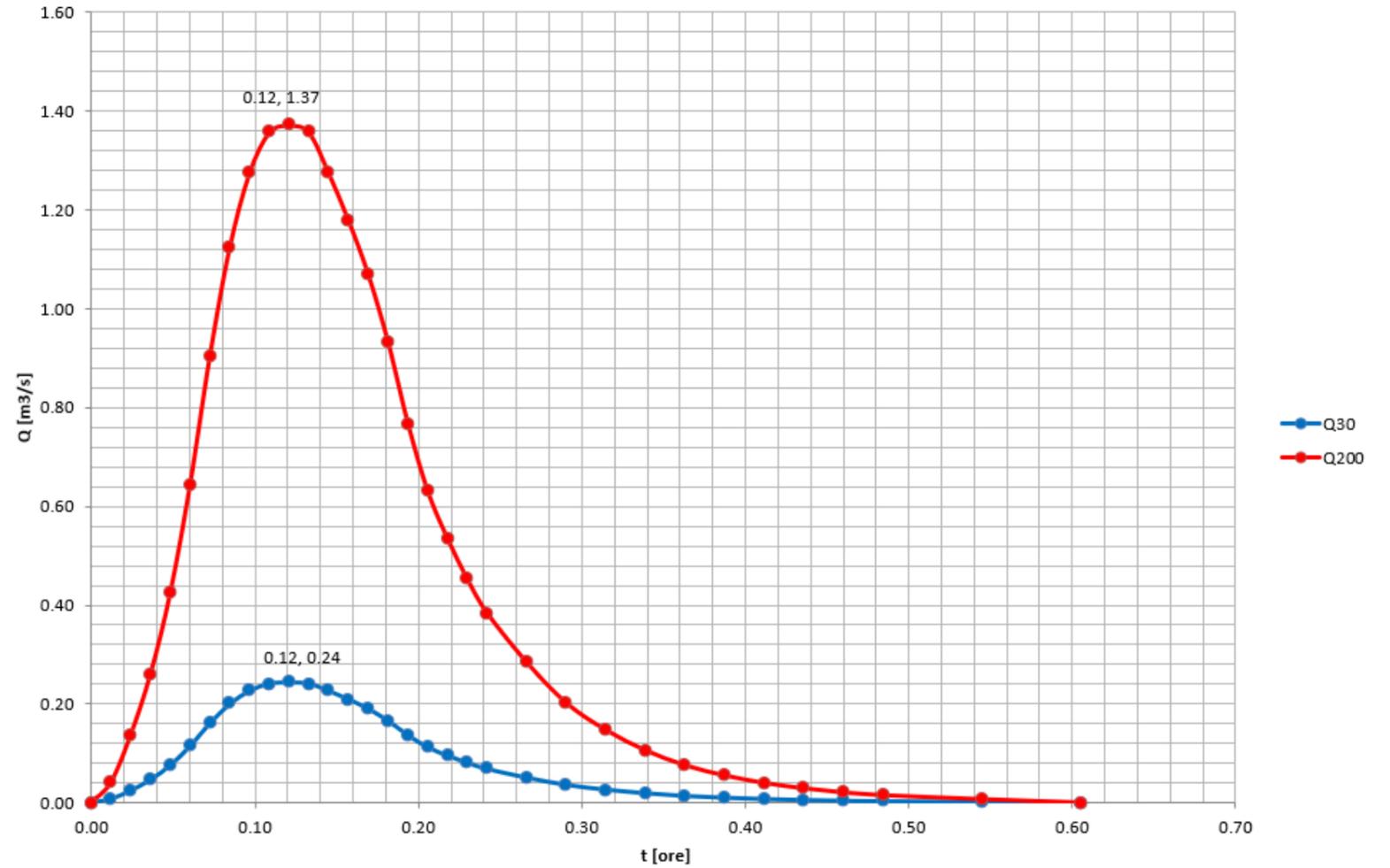
|      | a     | n     | t <sub>i</sub> [ore] | t <sub>p</sub> =t <sub>c</sub> [ore] | t <sub>a</sub> [ore] | h(t <sub>c</sub> ) | V[mm] | Q <sub>p</sub> [m <sup>3</sup> /s] |
|------|-------|-------|----------------------|--------------------------------------|----------------------|--------------------|-------|------------------------------------|
| T30  | 35.02 | 0.372 | 0.06                 | 0.10                                 | 0.11                 | 14.98              | 1.11  | 0.11                               |
| T200 | 64.05 | 0.372 |                      |                                      |                      | 27.39              | 6.55  | 0.63                               |



| BACINO 3               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |                 |           |                |
|------------------------|------|----------|----------|----------|----------|----------|-------|-------|-------|------------------|-------------------|-----------------|------------------|-----------------|-----------|----------------|
| PARAMETRI MORFOMETRICI |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |                 |           |                |
| VERSANTE               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  | ASTA PRINCIPALE |           |                |
| Superficie             |      | quote    |          |          |          | pendenze |       |       |       | SCS              |                   |                 |                  | $\phi$          | lunghezza | pendenza media |
|                        |      | min      | max      | range    | media    | min      | max   | range | media | CN <sub>II</sub> | CN <sub>III</sub> | S <sub>II</sub> | S <sub>III</sub> |                 |           |                |
| mq                     | kmq  | m.s.l.m. | m.s.l.m. | m.s.l.m. | m.s.l.m. | %        | %     | %     | %     |                  |                   |                 |                  |                 | km        | m/m            |
| 114115.54              | 0.11 | 260.56   | 368.86   | 108.30   | 318.71   | 2.32     | 68.27 | 65.95 | 24.61 | 73.67            | 86.68             | 90.76           | 39.03            | 0.31            | 0.420     | 25.78%         |

| t(h) | Q30  | Q200 |
|------|------|------|
| 0.00 | 0.00 | 0.00 |
| 0.01 | 0.01 | 0.04 |
| 0.02 | 0.02 | 0.14 |
| 0.04 | 0.05 | 0.26 |
| 0.05 | 0.08 | 0.42 |
| 0.06 | 0.11 | 0.64 |
| 0.07 | 0.16 | 0.90 |
| 0.08 | 0.20 | 1.12 |
| 0.10 | 0.23 | 1.27 |
| 0.11 | 0.24 | 1.36 |
| 0.12 | 0.24 | 1.37 |
| 0.13 | 0.24 | 1.36 |
| 0.15 | 0.23 | 1.27 |
| 0.16 | 0.21 | 1.18 |
| 0.17 | 0.19 | 1.07 |
| 0.18 | 0.17 | 0.93 |
| 0.19 | 0.14 | 0.77 |
| 0.21 | 0.11 | 0.63 |
| 0.22 | 0.09 | 0.53 |
| 0.23 | 0.08 | 0.45 |
| 0.24 | 0.07 | 0.38 |
| 0.27 | 0.05 | 0.28 |
| 0.29 | 0.04 | 0.20 |
| 0.31 | 0.03 | 0.15 |
| 0.34 | 0.02 | 0.11 |
| 0.36 | 0.01 | 0.08 |
| 0.39 | 0.01 | 0.05 |
| 0.41 | 0.01 | 0.04 |
| 0.44 | 0.01 | 0.03 |
| 0.46 | 0.00 | 0.02 |
| 0.48 | 0.00 | 0.02 |
| 0.55 | 0.00 | 0.01 |
| 0.61 | 0.00 | 0.00 |

|      | a     | n     | t <sub>i</sub> [ore] | t <sub>p</sub> =t <sub>c</sub> [ore] | t <sub>a</sub> [ore] | h(t <sub>c</sub> ) | V [mm] | Q <sub>p</sub> [m <sup>3</sup> /s] |
|------|-------|-------|----------------------|--------------------------------------|----------------------|--------------------|--------|------------------------------------|
| T30  | 35.02 | 0.372 | 0.07                 | 0.11                                 | 0.12                 | 15.41              | 1.24   | 0.24                               |
| T200 | 64.05 | 0.372 |                      |                                      |                      | 28.19              | 6.99   | 1.37                               |

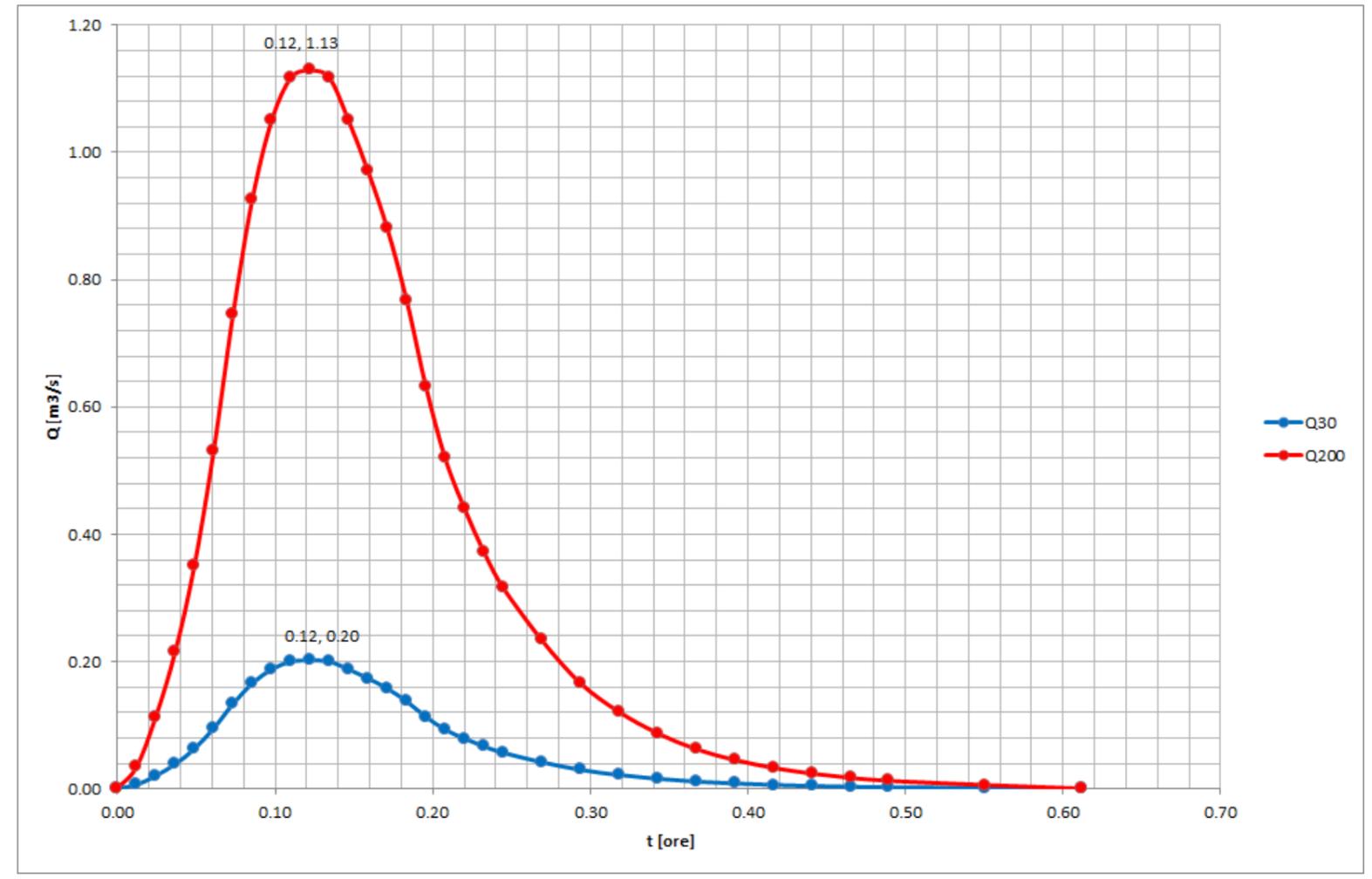


**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

| BACINO 4               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |        |                 |                |
|------------------------|------|----------|----------|----------|----------|----------|-------|-------|-------|------------------|-------------------|-----------------|------------------|--------|-----------------|----------------|
| PARAMETRI MORFOMETRICI |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |        |                 |                |
| VERSANTE               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |        | ASTA PRINCIPALE |                |
| Superficie             |      | quote    |          |          |          | pendenze |       |       |       | SCS              |                   |                 |                  | $\phi$ | lunghezza       | pendenza media |
|                        |      | min      | max      | range    | media    | min      | max   | range | media | CN <sub>II</sub> | CN <sub>III</sub> | S <sub>II</sub> | S <sub>III</sub> |        |                 |                |
| mq                     | kmq  | m.s.l.m. | m.s.l.m. | m.s.l.m. | m.s.l.m. | %        | %     | %     | %     |                  |                   |                 |                  |        | km              | m/m            |
| 94152.90               | 0.09 | 265.84   | 401.59   | 135.75   | 335.38   | 4.26     | 74.18 | 69.92 | 24.09 | 73.67            | 86.68             | 90.76           | 39.03            | 0.31   | 0.420           | 32.32%         |

| t(h) | Q30  | Q200 |
|------|------|------|
| 0.00 | 0.00 | 0.00 |
| 0.01 | 0.01 | 0.03 |
| 0.02 | 0.02 | 0.11 |
| 0.04 | 0.04 | 0.21 |
| 0.05 | 0.06 | 0.35 |
| 0.06 | 0.09 | 0.53 |
| 0.07 | 0.13 | 0.75 |
| 0.09 | 0.17 | 0.93 |
| 0.10 | 0.19 | 1.05 |
| 0.11 | 0.20 | 1.12 |
| 0.12 | 0.20 | 1.13 |
| 0.13 | 0.20 | 1.12 |
| 0.15 | 0.19 | 1.05 |
| 0.16 | 0.17 | 0.97 |
| 0.17 | 0.16 | 0.88 |
| 0.18 | 0.14 | 0.77 |
| 0.20 | 0.11 | 0.63 |
| 0.21 | 0.09 | 0.52 |
| 0.22 | 0.08 | 0.44 |
| 0.23 | 0.07 | 0.37 |
| 0.24 | 0.06 | 0.32 |
| 0.27 | 0.04 | 0.23 |
| 0.29 | 0.03 | 0.17 |
| 0.32 | 0.02 | 0.12 |
| 0.34 | 0.02 | 0.09 |
| 0.37 | 0.01 | 0.06 |
| 0.39 | 0.01 | 0.05 |
| 0.42 | 0.01 | 0.03 |
| 0.44 | 0.00 | 0.02 |
| 0.47 | 0.00 | 0.02 |
| 0.49 | 0.00 | 0.01 |
| 0.55 | 0.00 | 0.01 |
| 0.61 | 0.00 | 0.00 |

|      | a     | n     | t <sub>i</sub> [ore] | t <sub>p</sub> =t <sub>c</sub> [ore] | t <sub>a</sub> [ore] | h(t <sub>c</sub> ) | V[mm] | Q <sub>p</sub> [m <sup>3</sup> /s] |
|------|-------|-------|----------------------|--------------------------------------|----------------------|--------------------|-------|------------------------------------|
| T30  | 35.02 | 0.372 | 0.07                 | 0.11                                 | 0.12                 | 15.47              | 1.26  | 0.20                               |
| T200 | 64.05 | 0.372 |                      |                                      |                      | 28.30              | 7.06  | 1.13                               |

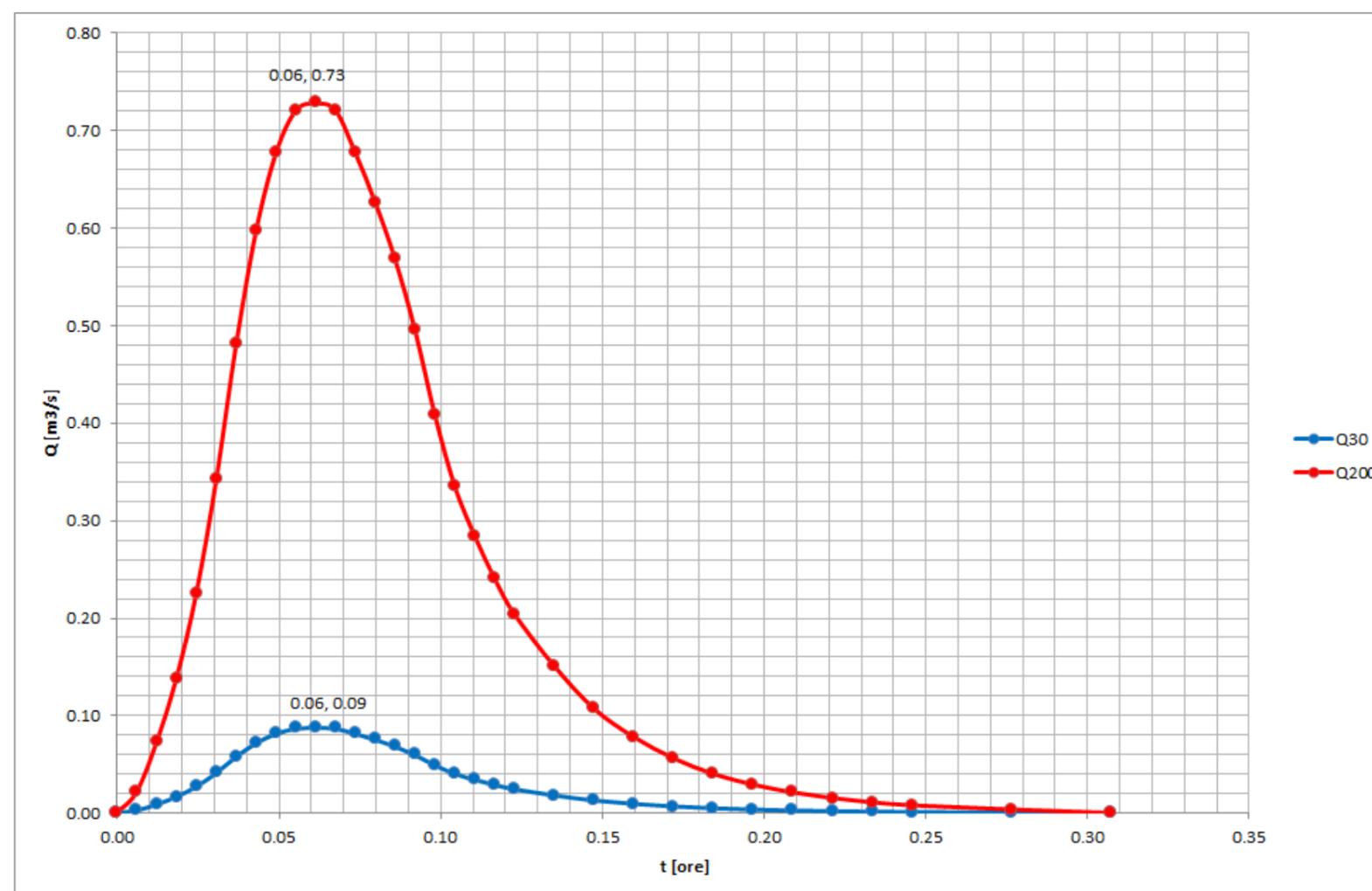


**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

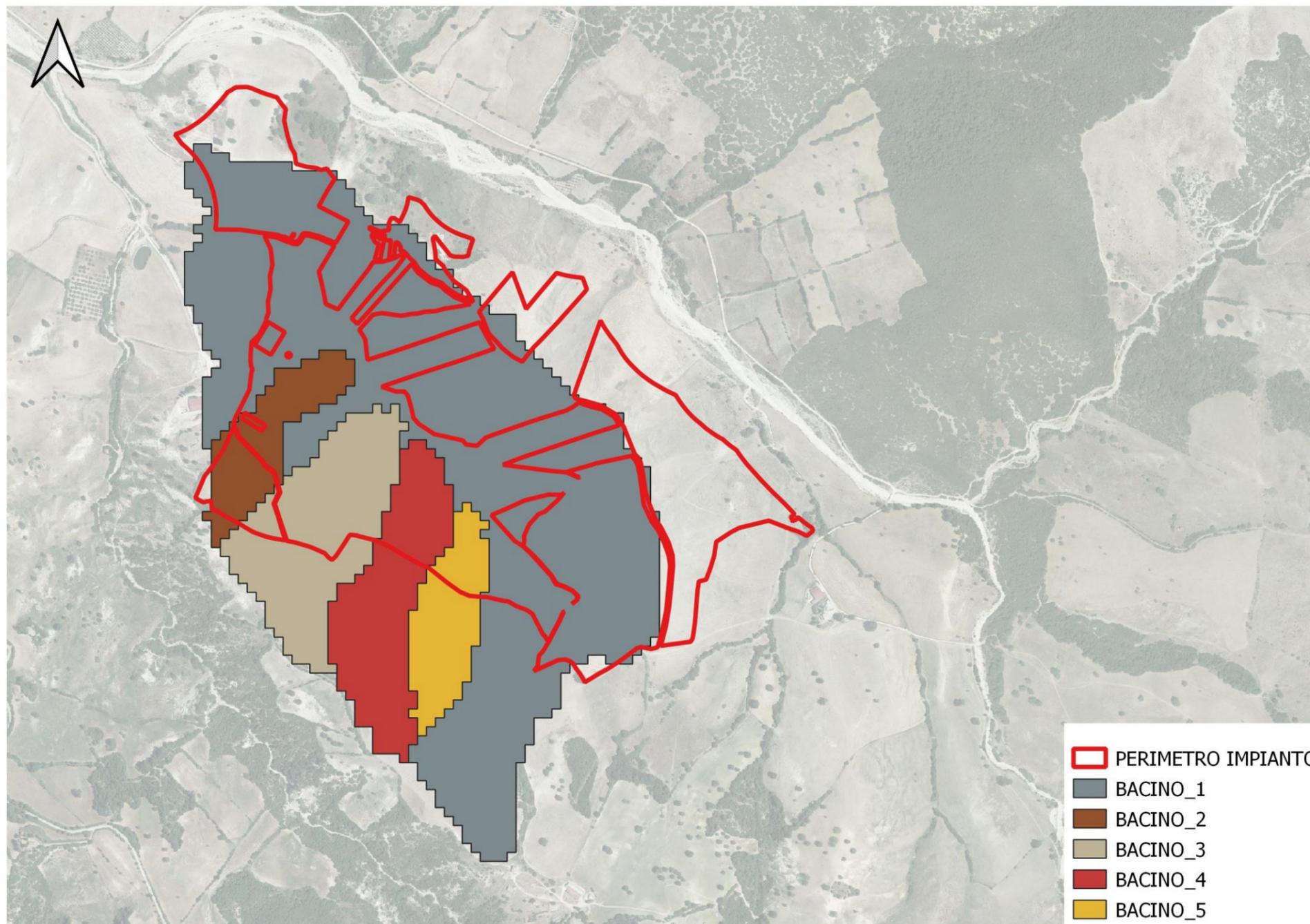
| BACINO 5               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |                 |           |                |
|------------------------|------|----------|----------|----------|----------|----------|-------|-------|-------|------------------|-------------------|-----------------|------------------|-----------------|-----------|----------------|
| PARAMETRI MORFOMETRICI |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  |                 |           |                |
| VERSANTE               |      |          |          |          |          |          |       |       |       |                  |                   |                 |                  | ASTA PRINCIPALE |           |                |
| Superficie             |      | quote    |          |          |          | pendenze |       |       |       | SCS              |                   |                 |                  | $\phi$          | lunghezza | pendenza media |
|                        |      | min      | max      | range    | media    | min      | max   | range | media | CN <sub>II</sub> | CN <sub>III</sub> | S <sub>II</sub> | S <sub>III</sub> |                 | km        | m/m            |
| mq                     | kmq  | m.s.l.m. | m.s.l.m. | m.s.l.m. | m.s.l.m. | %        | %     | %     | %     | CN <sub>II</sub> | CN <sub>III</sub> | S <sub>II</sub> | S <sub>III</sub> |                 |           |                |
| 53352.72               | 0.05 | 284.05   | 393.68   | 109.63   | 344.14   | 2.70     | 96.00 | 93.30 | 25.18 | 74.55            | 87.20             | 86.71           | 37.29            | 0.33            | 0.187     | 58.68%         |

| t(h) | Q30  | Q200 |
|------|------|------|
| 0.00 | 0.00 | 0.00 |
| 0.01 | 0.00 | 0.02 |
| 0.01 | 0.01 | 0.07 |
| 0.02 | 0.02 | 0.14 |
| 0.02 | 0.03 | 0.23 |
| 0.03 | 0.04 | 0.34 |
| 0.04 | 0.06 | 0.48 |
| 0.04 | 0.07 | 0.60 |
| 0.05 | 0.08 | 0.68 |
| 0.06 | 0.09 | 0.72 |
| 0.06 | 0.09 | 0.73 |
| 0.07 | 0.09 | 0.72 |
| 0.07 | 0.08 | 0.68 |
| 0.08 | 0.08 | 0.63 |
| 0.09 | 0.07 | 0.57 |
| 0.09 | 0.06 | 0.50 |
| 0.10 | 0.05 | 0.41 |
| 0.10 | 0.04 | 0.33 |
| 0.11 | 0.03 | 0.28 |
| 0.12 | 0.03 | 0.24 |
| 0.12 | 0.02 | 0.20 |
| 0.14 | 0.02 | 0.15 |
| 0.15 | 0.01 | 0.11 |
| 0.16 | 0.01 | 0.08 |
| 0.17 | 0.01 | 0.06 |
| 0.18 | 0.00 | 0.04 |
| 0.20 | 0.00 | 0.03 |
| 0.21 | 0.00 | 0.02 |
| 0.22 | 0.00 | 0.02 |
| 0.23 | 0.00 | 0.01 |
| 0.25 | 0.00 | 0.01 |
| 0.28 | 0.00 | 0.00 |
| 0.31 | 0.00 | 0.00 |

|      | a     | n     | t <sub>i</sub> [ore] | t <sub>p</sub> =t <sub>c</sub> [ore] | t <sub>a</sub> [ore] | h(t <sub>c</sub> ) | V[mm] | Q <sub>p</sub> [m <sup>3</sup> /s] |
|------|-------|-------|----------------------|--------------------------------------|----------------------|--------------------|-------|------------------------------------|
| T30  | 35.02 | 0.372 | 0.03                 | 0.06                                 | 0.06                 | 11.97              | 0.49  | 0.09                               |
| T200 | 64.05 | 0.372 |                      |                                      |                      | 21.90              | 4.03  | 0.73                               |

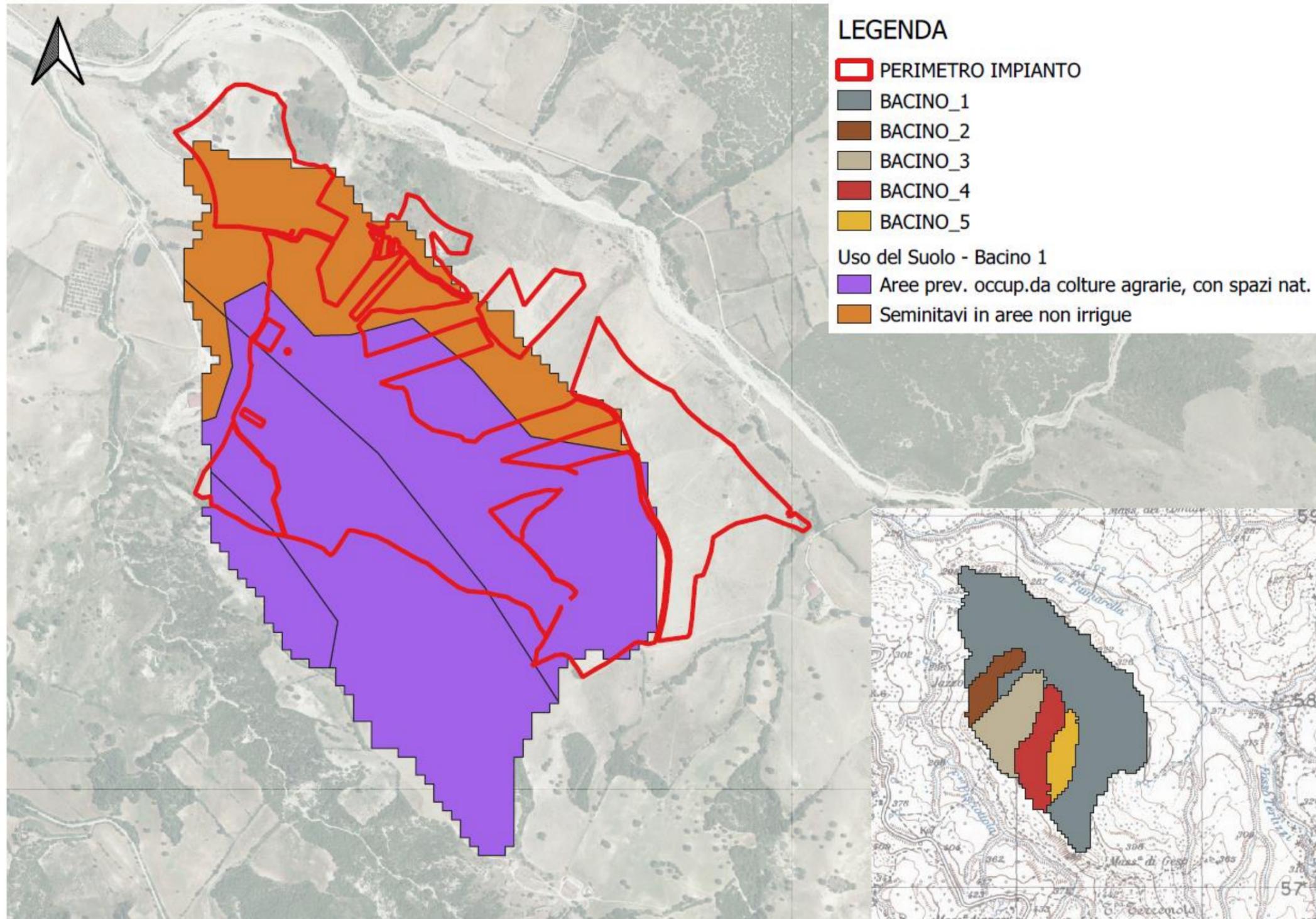


**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



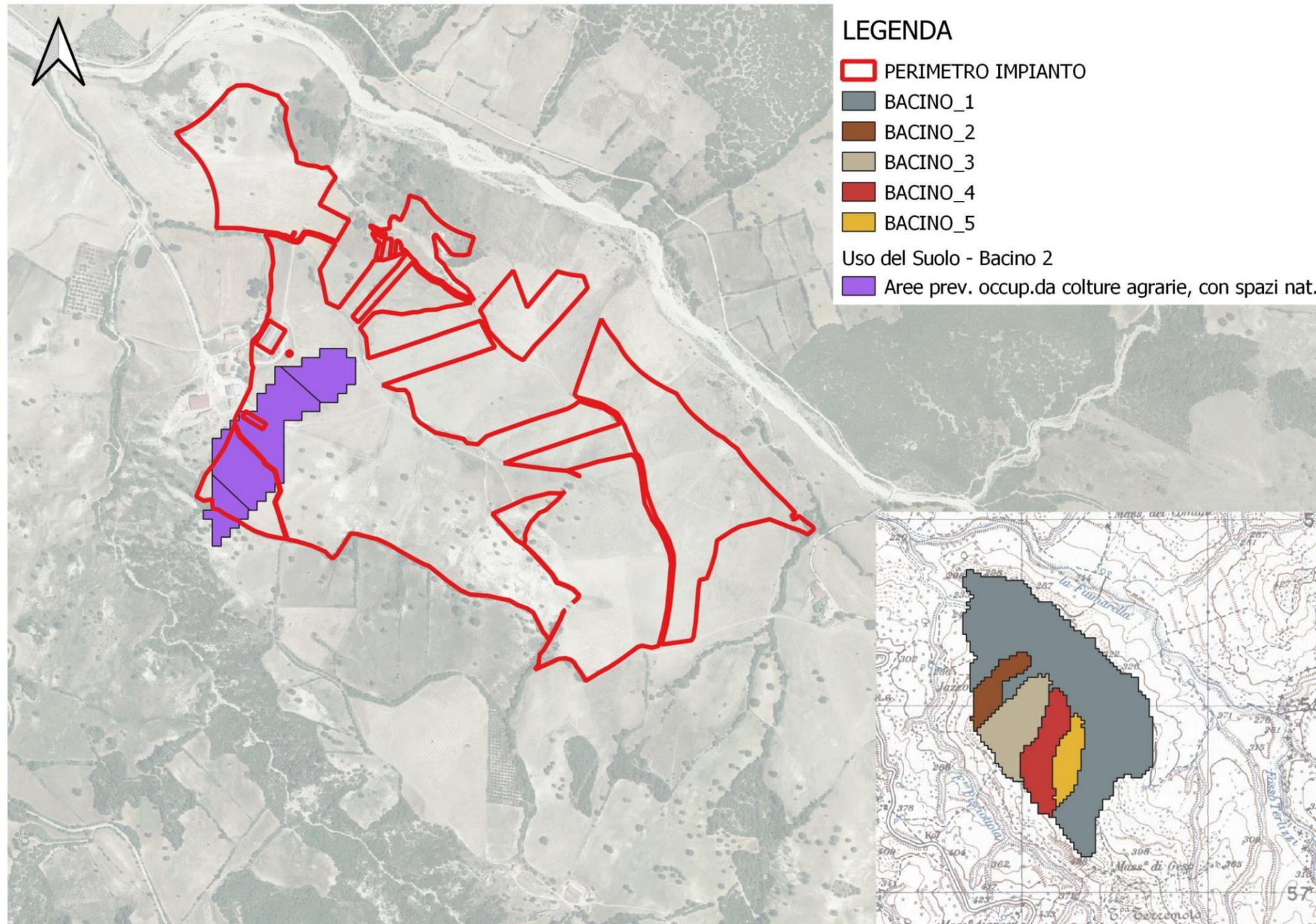
**Figura 1 – Perimetrazione Bacini idrografici**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



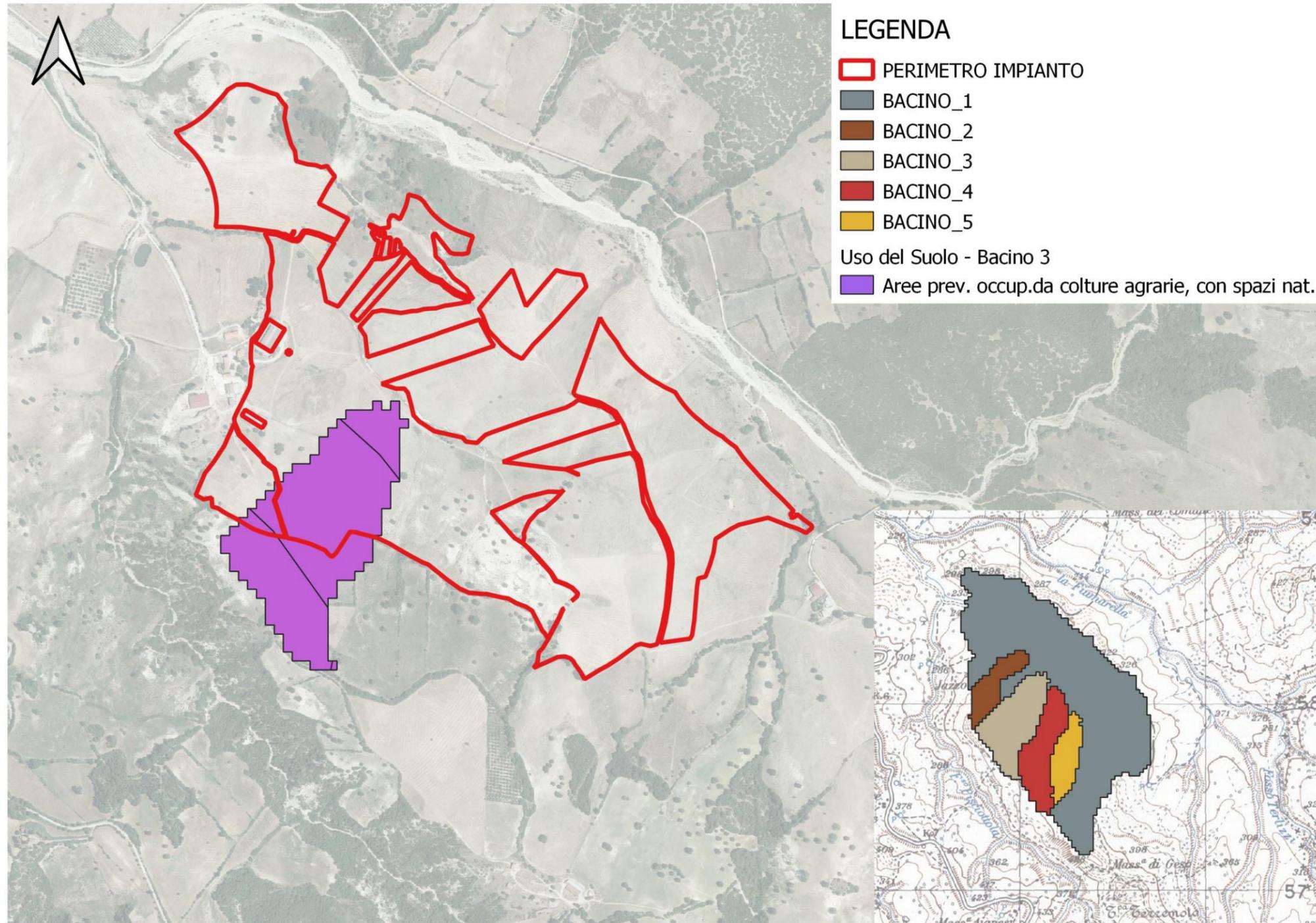
**Figura 2: Uso del suolo Bacino 1**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



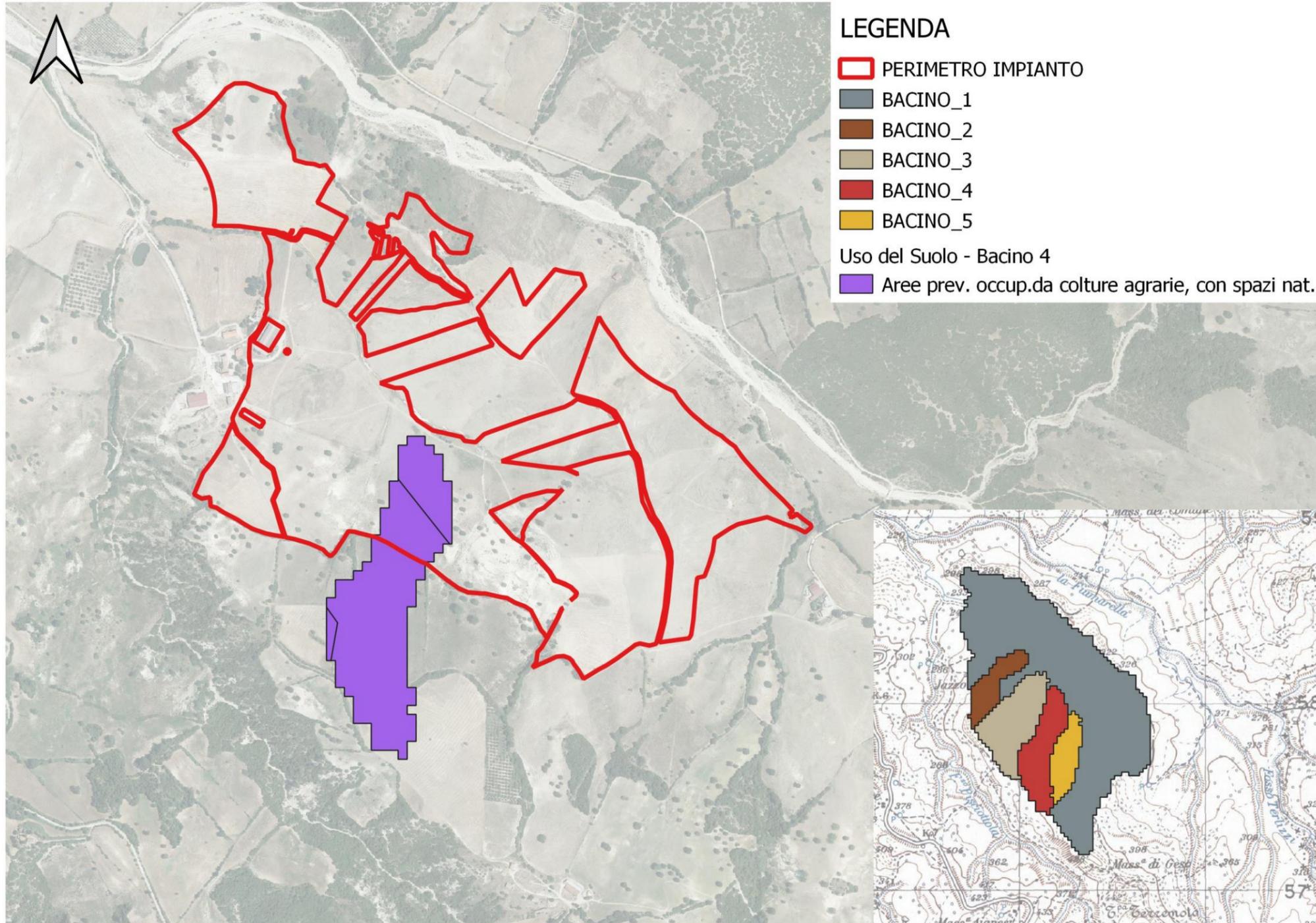
**Figura 3: Uso del suolo Bacino 2**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



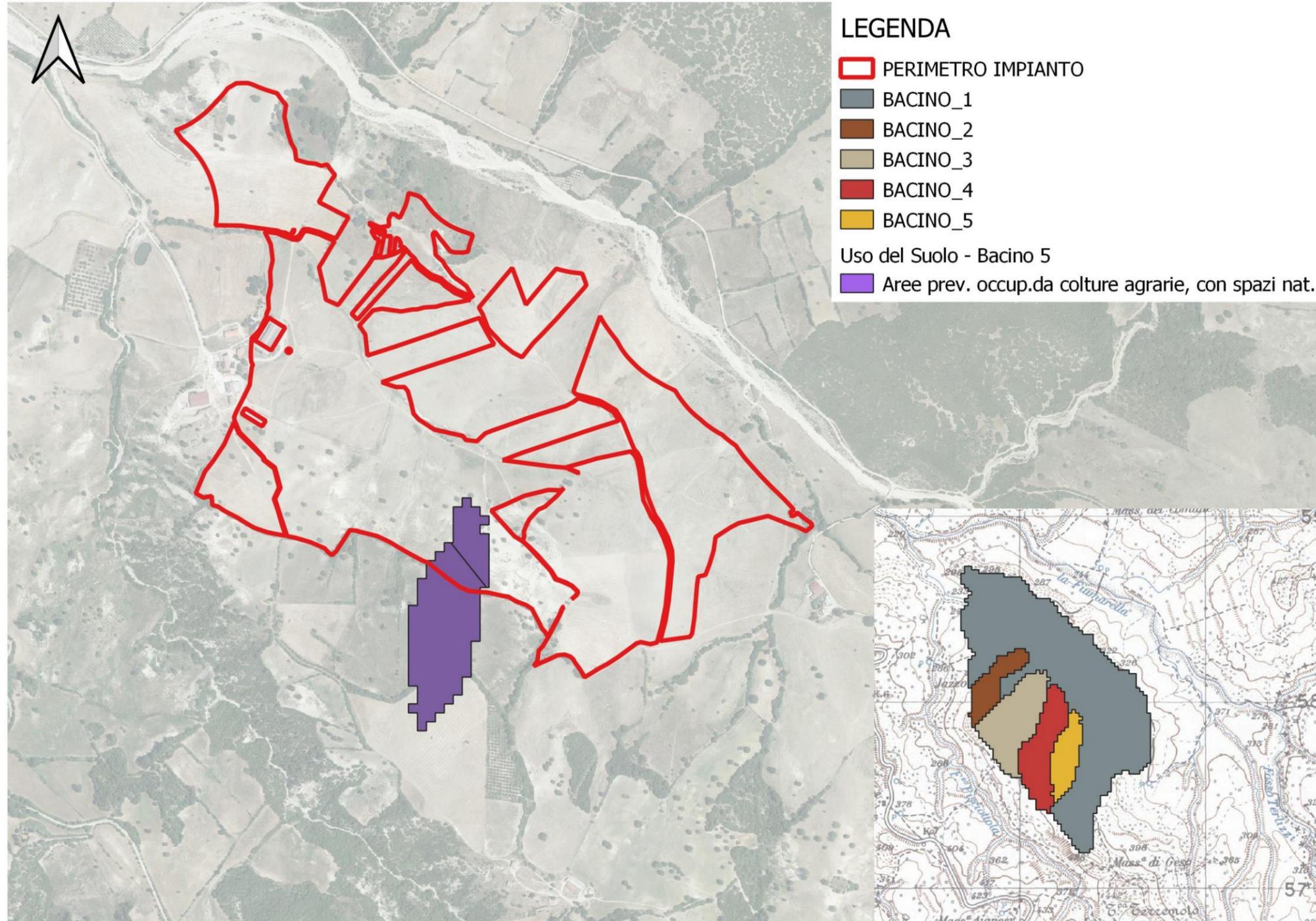
**Figura 4: Uso del suolo Bacino 3**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



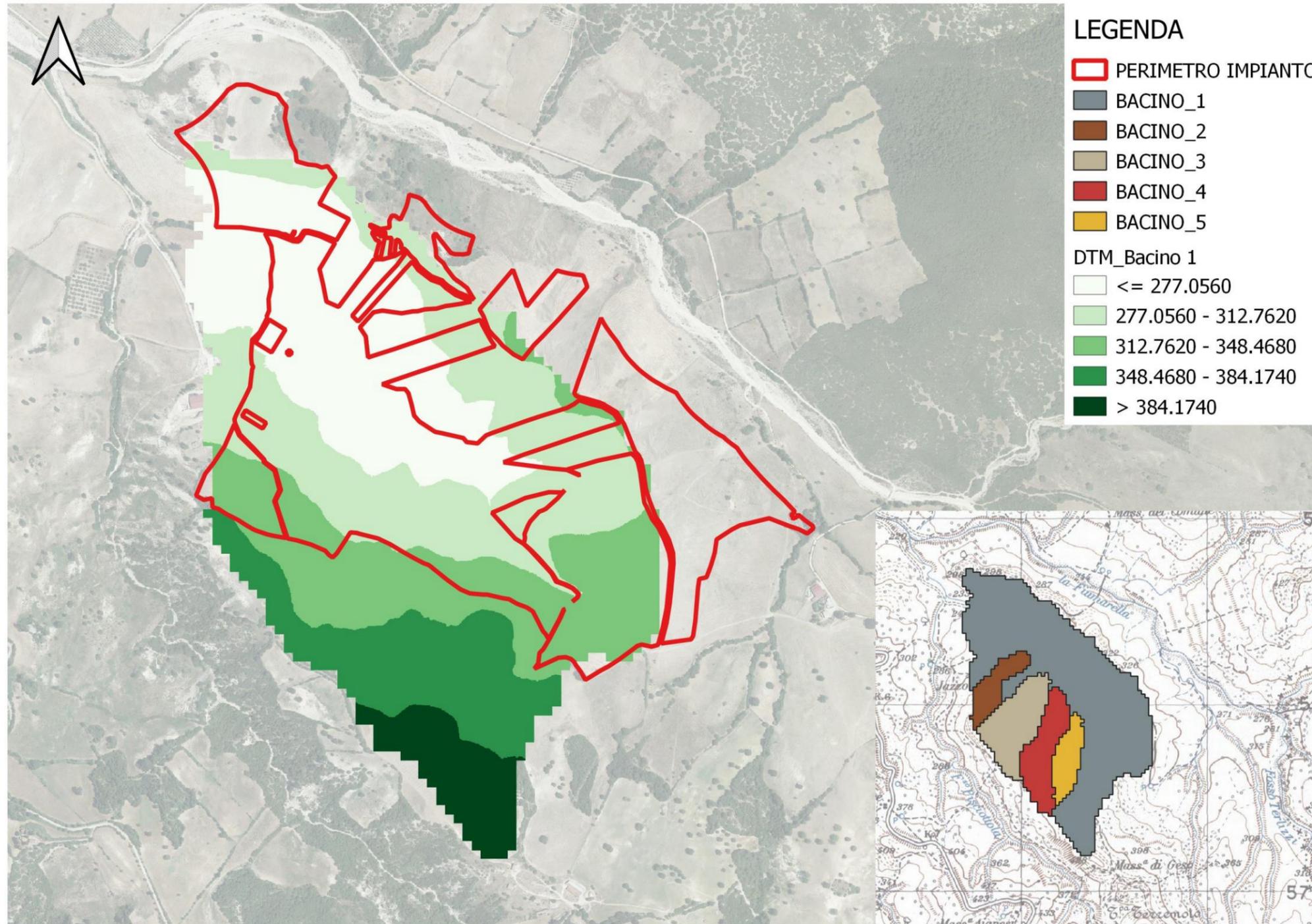
**Figura 5: Uso del suolo Bacino 4**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



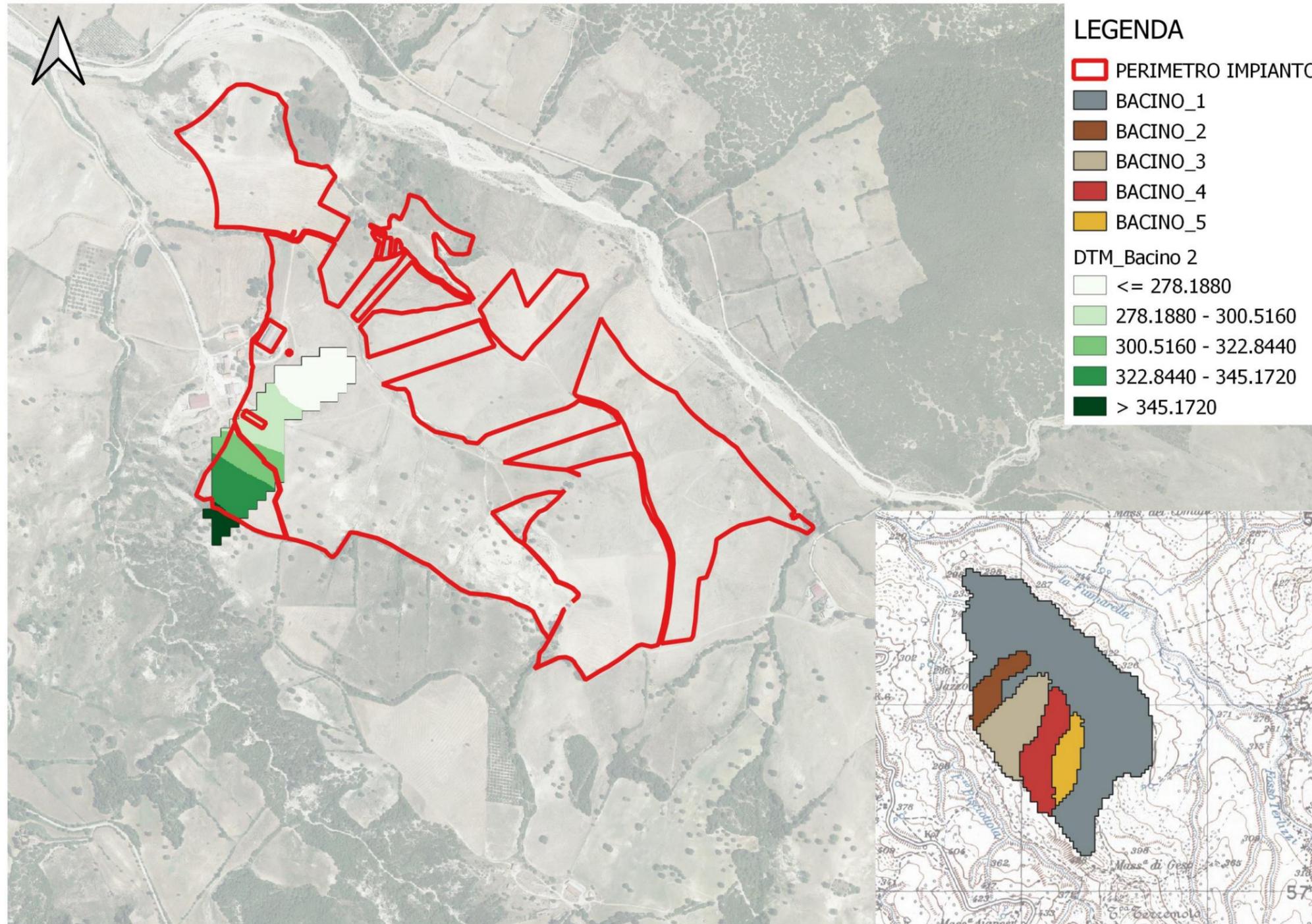
**Figura 6: Uso del suolo Bacino 5**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

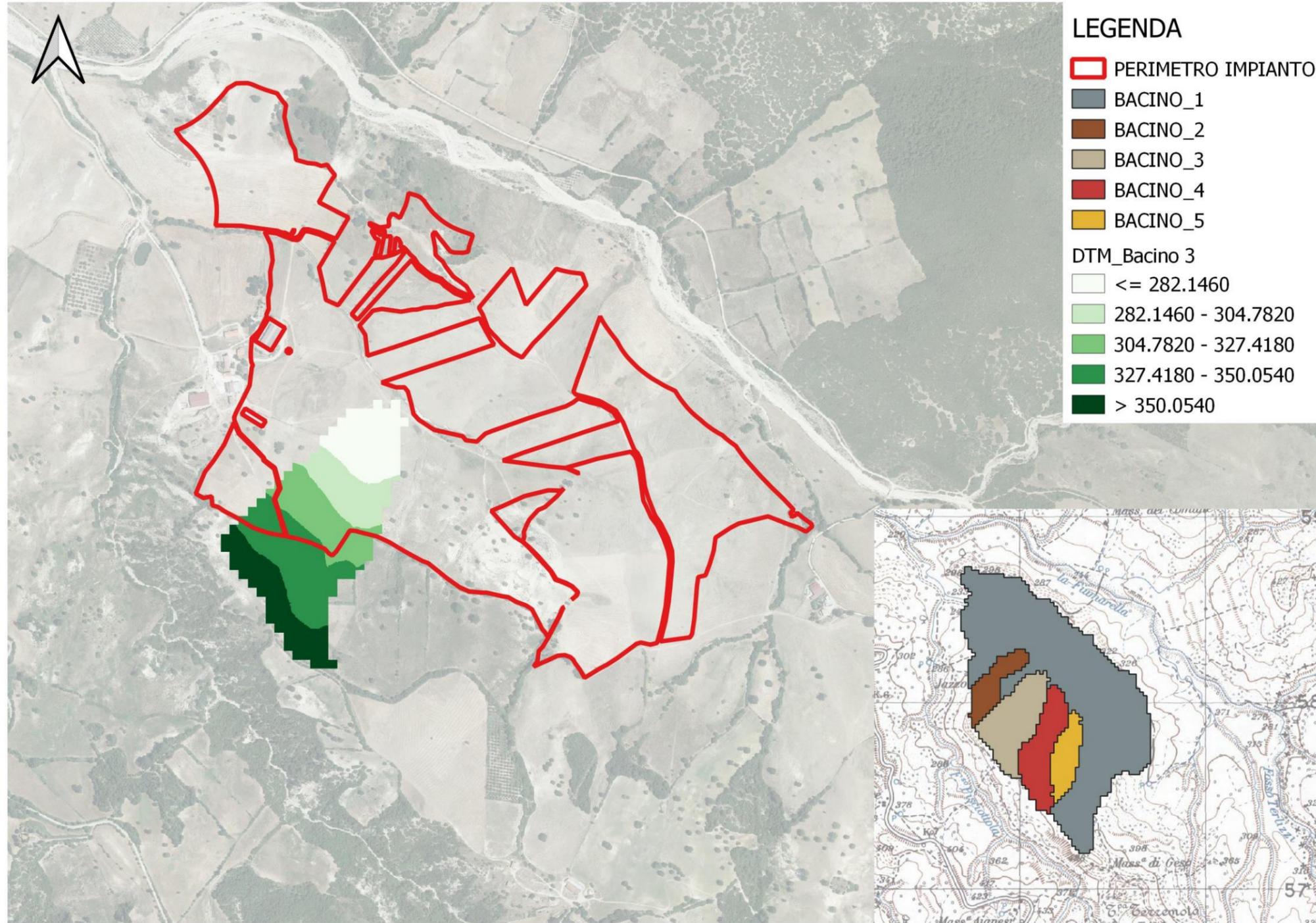


**Figura 7: DTM Bacino 1**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

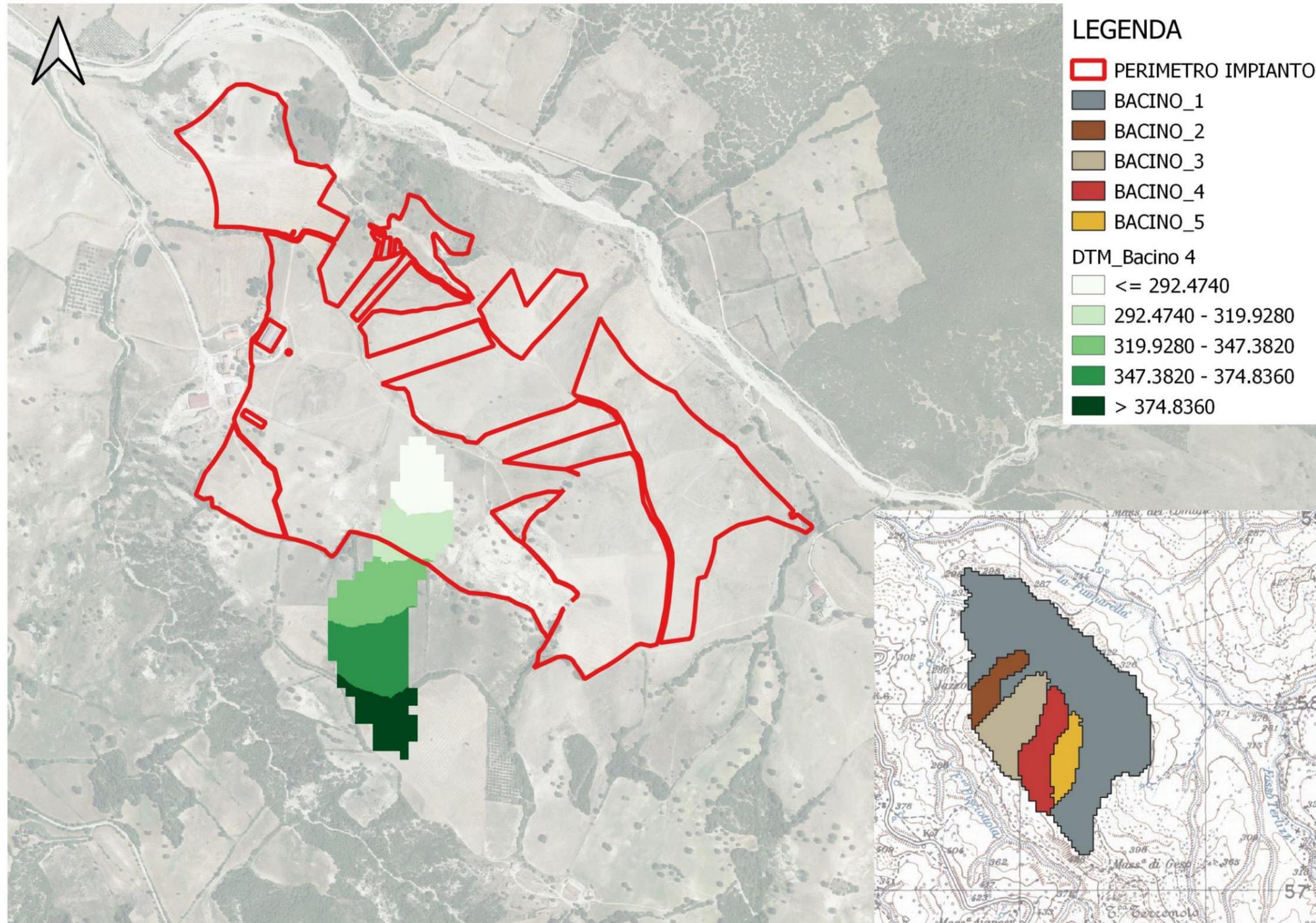


**Figura8: DTM Bacino 2**

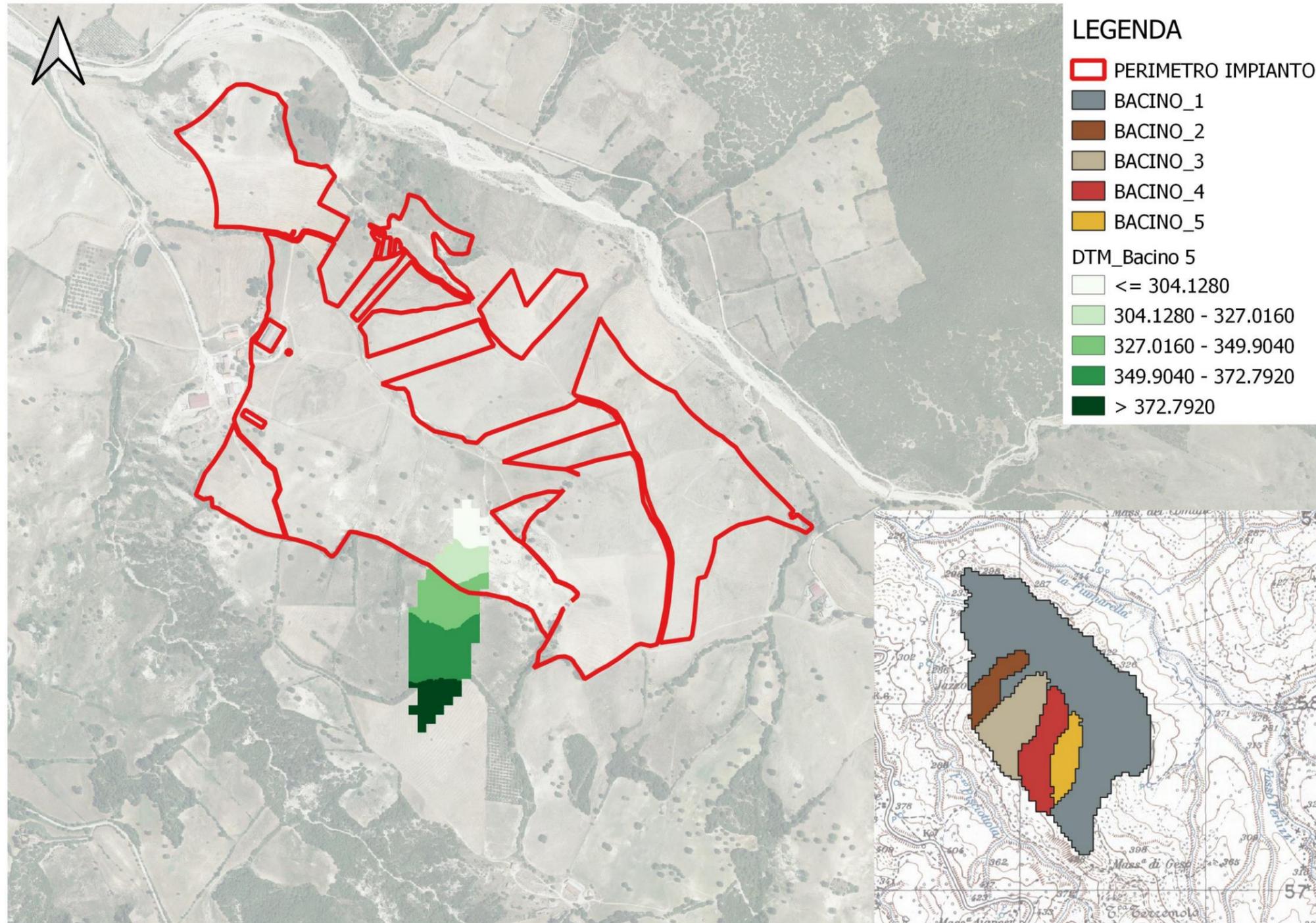


**Figura 9: DTM Bacino 3**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**

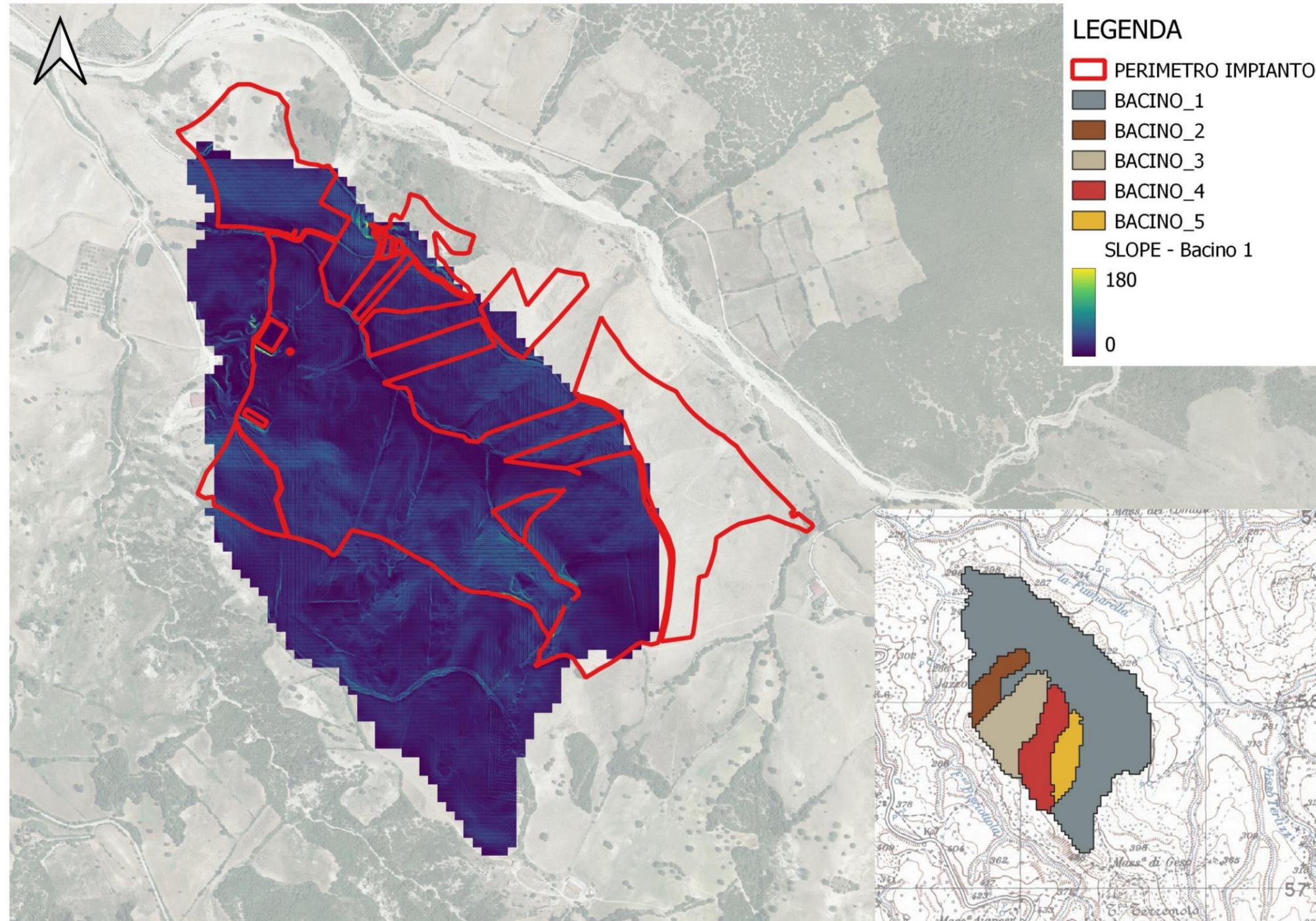


**Figura 10: DTM Bacino 4**

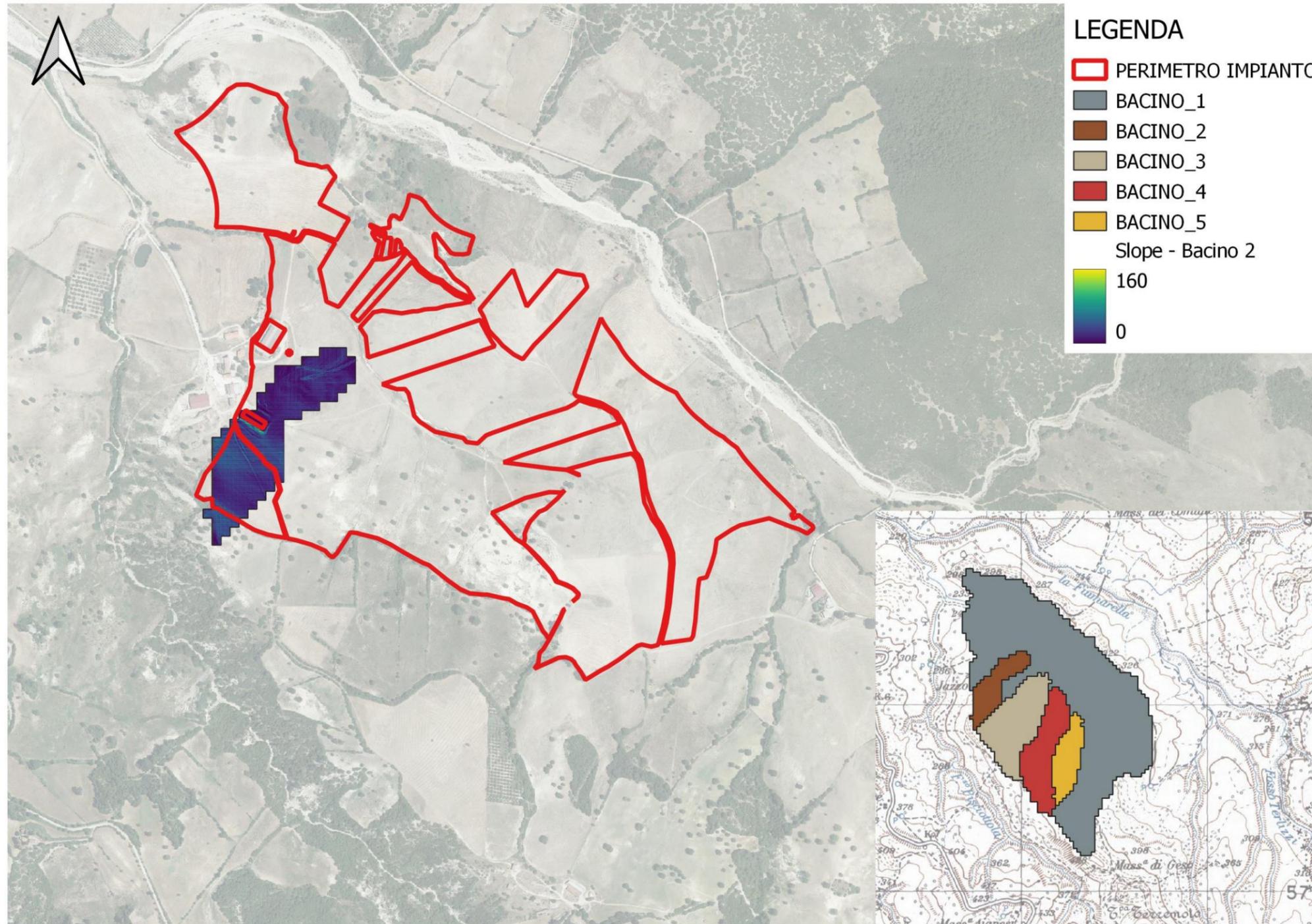


**Figura 11: DTM Bacino 5**

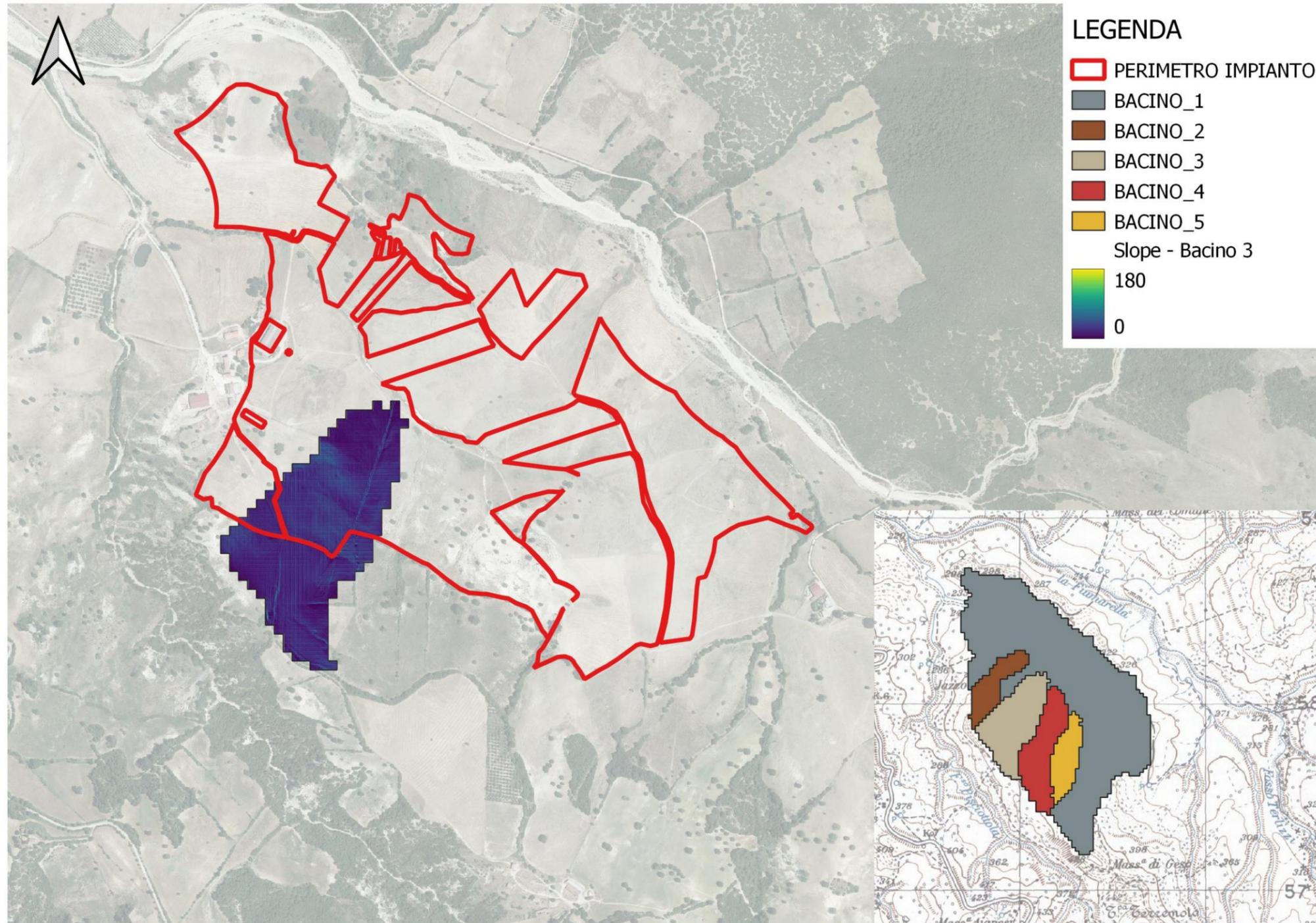
**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



**Figura 12: SLOPE Bacino 1**

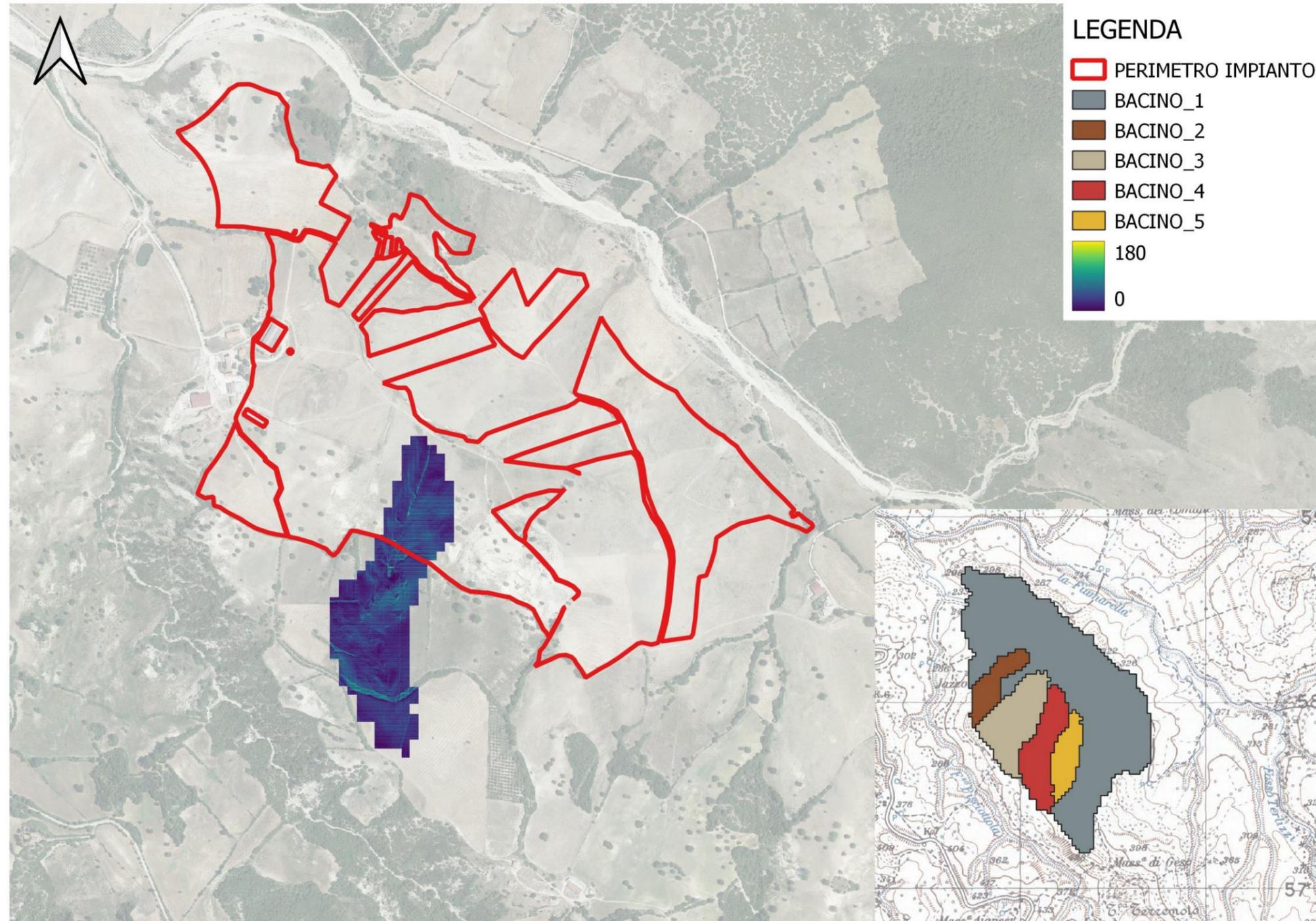


**Figura 13: SLOPE Bacino 2**



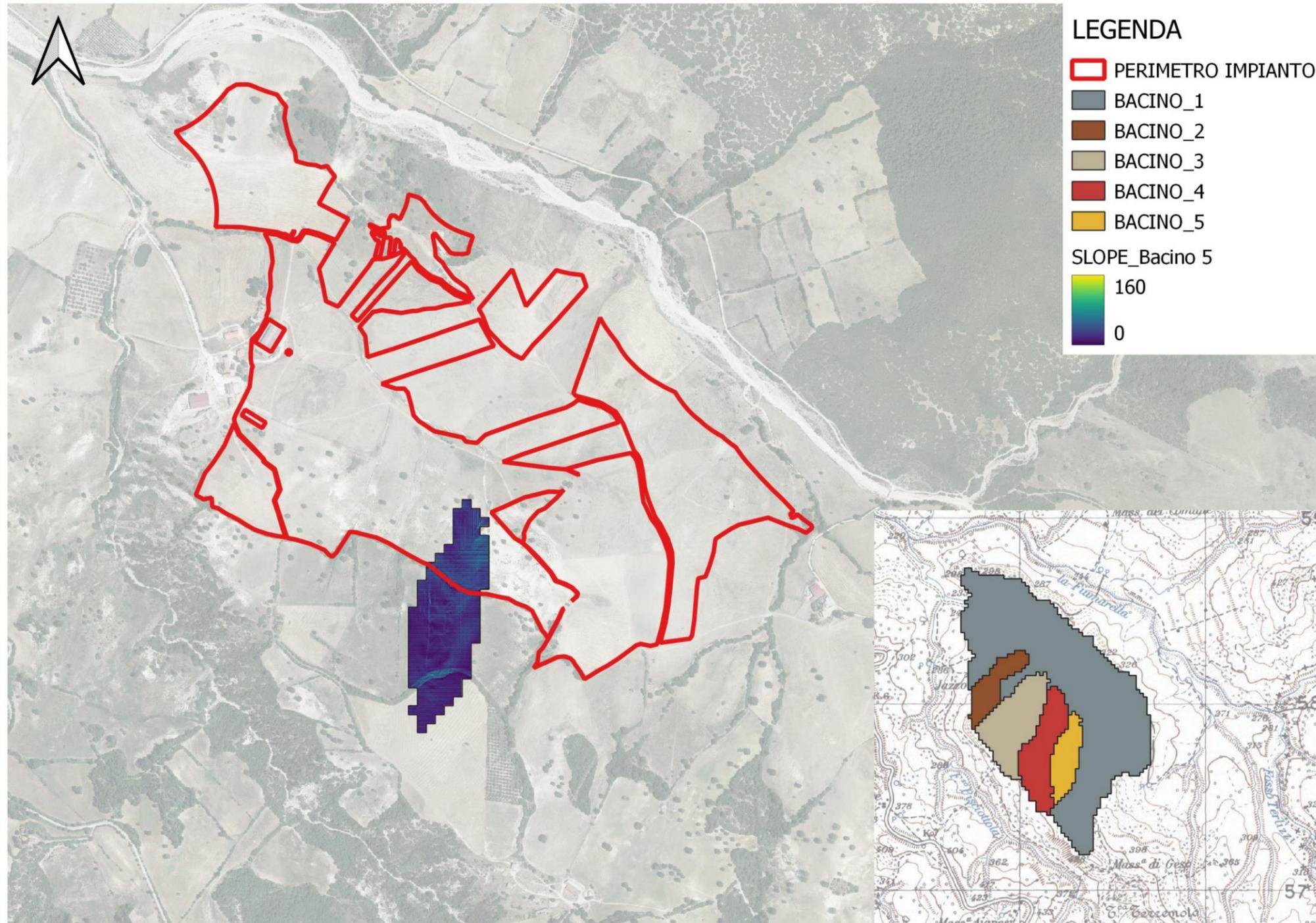
**Figura 14: SLOPE Bacino 3**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



**Figura 15: SLOPE Bacino 4**

**REPORT ANALISI IDROLOGICA – BACINI IDROGRAFICI**



**Figura 16: SLOPE Bacino 5**