Supplementary Material (SM)

Spatial and Temporal Pattern Assessment of Agricultural Drought Sensitivity and its Potential Impact on Economic Crops in Nakhon Ratchasima, Thailand

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SM 1 Potential agricultural drought sensitivity due to agricultural drought frequency

Agricultural drought frequency	Potential ADS	Rating	Normalized	Percent
0-7	Very low (VL)	1	1	41.74
7-25	Low (L)	2	1.5	19.33
25-68	Moderate (M)	3	2	13.85
68-148	High (H)	4	2.5	12.79
148-210	Very high (VH)	5	3	12.28

SM 2 Potential agricultural drought sensitivity due to agricultural drought intensity

Agricultural drought intensity	Potential ADS	Rating	Normalized	Percent
0-6.77	Very low (VL)	1	1	41.74
6.77-23.70	Low (L)	2	1.5	10.46
23.70-58.69	Moderate (M)	3	2	19.54
58.69-121.88	High (H)	4	2.5	13.65
121.88-288.91	Very high (VH)	5	3	14.61

SM 3 Potential agricultural drought sensitivity due to the average SPI in the 3m7 period

Average SPI for 3m7 period	Potential ADS	Rating	Normalized	Percent
0.542 to 1.420	Very low (VL)	1	1	11.86
0.142 to 0.542	Low (L)	2	1.5	32.52
-0.197 to 0.142	Moderate (M)	3	2	26.68
-0.526 to -0.197	High (H)	4	2.5	23.46
-1.135 to -0.526	Very high (VH)	5	3	5.47

SM 4 Potential agricultural drought sensitivity due to the average SPI during the 3m10 period

Average SPI for 3m10 period	Potential ADS	Rating	Normalized	Percent
0.975 to 1.529	Very low (VL)	1	1	11.24
0.649 to 0.975	Low (L)	2	1.5	37.22
0.371 to 0.649	Moderate (M)	3	2	31.39
0.005 to 0.371	High (H)	4	2.5	17.79
-1.005 to 0.005	Very high (VH)	5	3	2.36

SM 5 Potential agricultural drought sensitivity due to the average SPI during the 6m10 period

Average SPI for 6m10 period	Potential ADS	Rating	Normalized	Percent
0.667 to 1.515	Very low (VL)	1	1	1.90
0.243 to 0.667	Low (L)	2	1.5	20.26
-0.130 to 0.243	Moderate (M)	3	2	22.47
-0.695 to -0.129	High (H)	4	2.5	35.03
-1.775 to -0.695	Very high (VH)	5	3	20.34

SM 6 Potential agricultural drought sensitivity due to the average SPEI during the 3m7 period

Average SPEI for 3m7 period	Potential ADS	Rating	Normalized	Percent
0.009 to 0.021	Very low (VL)	1	1	4.05
0.002 to 0.009	Low (L)	2	1.5	31.22
-0.003 to 0.002	Moderate (M)	3	2	25.07
-0.011 to -0.003	High (H)	4	2.5	21.71
-0.024 to -0.011	Very high (VH)	5	3	17.95

SM 7 Potential agricultural drought sensitivity due to the average SPEI during the 3m10 period

Average SPEI for 3m10 period	Potential ADS	Rating	Normalized	Percent
0.009 to 0.021	Very low (VL)	1	1	12.34
0.002 to 0.009	Low (L)	2	1.5	23.88
-0.003 to 0.002	Moderate (M)	3	2	27.72
-0.011 to -0.003	High (H)	4	2.5	31.83
-0.024 to -0.011	Very high (VH)	5	3	4.24

SM 8 Potential agricultural drought sensitivity due to the average SPEI during the 6m10 period

Average SPEI for 6m10 period	Potential ADS	Rating	Normalized	Percent
0.67 to 1.51	Very low (VL)	1	1	24.73
0.24 to 0.66	Low (L)	2	1.5	36.97
-0.13 to 0.24	Moderate (M)	3	2	27.79
-0.70 to -0.13	High (H)	4	2.5	9.53
-1.77 to -0.70	Very high (VH)	5	3	0.97

SM 9 Potential agricultural drought sensitivity according to land use type

Land use type at Levels 1 and 2	Potential ADS	Rating	Normalized	Percent
Water bodies (W)	Very low (VL)	1	1	5.72
Miscellaneous lands (M)	Very low (VL)	1	1	
Urban and built-up areas (U)	Low (L)	2	1.5	26.02
Forest lands (F)	Low (L)	2	1.5	
A3 Perennial trees	Moderate (M)	3	2	9.63
A4 Orchards	Moderate (M)	3	2	
A2 Field crops	High (H)	4	2.5	31.34
A5-A9 Other agriculture types	High (H)	4	2.5	
A1 Paddy fields	Very high (VH)	5	3	27.30

SM 10 Classification of agricultural drought sensitivity according to the agricultural irrigation area

Irrigation support class	Potential ADS	Rating	Normalized	Percent
Irrigated	Very low (VL)	1	1	6.07
Rain-fed	Very high (VH)	5	3	93.93

SM 11 Potential agricultural drought sensitivity due to distance to water bodies

Distance to waterbody (km.)	Potential ADS	Rating	Normalized	Percent
Up to 1	Very low (VL)	1	1	47.24
1-3	Low (L)	2	1.5	36.64
3-5	Moderate (M)	3	2	8.77
5-7	High (H)	4	2.5	2.29
> 7	Very high (VH)	5	3	5.06

SM 12 Potential agricultural drought sensitivity due to drainage density

Drainage density	Potential ADS	Rating	Normalized	Percent
Very low density	Very high (VH)	5	3	9.21
Low density	High (H)	4	2.5	28.64
Moderate density	Moderate (M)	3	2	52.07
High density	Low (L)	2	1.5	7.06
Very high density	Very low (VL)	1	1	3.01

SM 13 Potential agricultural drought sensitivity due to soil drainage

Soil drainage class	Potential ADS	Rating	Normalized	Percent
Well drained	Very high (VH)	5	3	5.88
Moderately well drained	High (H)	4	2.5	38.96
Somewhat well drained	Moderate (M)	3	2	21.73
Poorly drained	Low (L)	2	1.5	12.79
Very poor drained	Very low (VL)	1	1	20.64

SM 14 Potential agricultural drought sensitivity due to landform

Slope class (%)	Landform	Potential ADS	Rating	Normalized	Percent
0-2	Flat or almost flat	Very low (VL)	1	1	19.63
2-5	Slightly undulating	Low (L)	2	1.5	46.02
5-12	Undulating	Moderate (M)	3	2	23.78
12-20	Rolling	High (H)	4	2.5	4.75
20-35	Hilly	Very high (VH)	5	3	5.83
>35	Steep	Very high (VH)	5	3	

SM 15 Potential agricultural drought sensitivity according to elevation

Elevation (m)	Potential ADS	Rating	Normalized	Percent
< 200	Very low (VL)	1	1	37.89
200-250	Low (L)	2	1.5	25.06
250-350	Moderate (M)	3	2	18.48
350-750	High (H)	4	2.5	16.80
750-800	Very high (VH)	5	3	1.78
> 800	Very high (VH)	5	3	

SM 16 Potential agricultural drought sensitivity due to the average rice harvested area at the subdistrict level

Average rice harvested yield in Rai (1,600 m^2)	Potential ADS	Rating	Normalized	Percent
≤ 4,179.65	Very low (VL)	1	1	26.39
4,179.65 – 10,069.17	Low (L)	2	1.5	32.94
10,069.17 – 17,098.59	Moderate (M)	3	2	18.47
17,098.59 – 27,547.73	High (H)	4	2.5	17.41
> 27,547.73	Very high (VH)	5	3	4.79

SM 17 Potential agricultural drought sensitivity of rice farmer households at the subdistrict level

Number of rice farmer household	Potential ADS	Rating	Normalized	Percent
< 389	Very low (VL)	1	1	28.55
389-1,060	Low (L)	2	1.5	29.82
1,060-1,825	Moderate (M)	3	2	25.72
1,825-4,637	High (H)	4	2.5	15.63
> 4,637	Very high (VH)	5	3	0.28

SM 18 Potential agricultural drought sensitivity due to population density

Population density (person.km^2)	Potential ADS	Rating	Normalized	Percent
< 94.71	Very low (VL)	1	1	46.40
94.71-207.89	Low (L)	2	1.5	43.92
207.89-552.88	Moderate (M)	3	2	7.89
552.88-1,540.46	High (H)	4	2.5	1.40
> 1,540.46	Very high (VH)	5	3	0.39

SM 19 Relationships between agricultural drought sensitivity and influencing factors at 3m7

Influential factor on ADS	Correlation coefficient (R)	Scale for R interpretation [53]
Agricultural frequency drought (F01)	0.82	A strong positive linear relationship
Agricultural intensity drought (F02)	0.83	A strong positive linear relationship
Average SPEI: 3m7 (F03)	0.52	A strong positive linear relationship
Average SPI: 3m7 (F04)	0.48	A moderate positive relationship
Land use (F05)	0.37	A moderate positive relationship
Agricultural irrigation area (F06)	0.01	A weak positive linear relationship
Distance to waterbody (F07)	-0.22	A weak negative linear relationship
Drainage density (F08)	0.10	A weak positive linear relationship
Soil drainage (F09)	-0.23	A weak negative linear relationship
Landform (F10)	-0.16	A weak negative linear relationship
Elevation (F11)	-0.26	A weak negative linear relationship
Average rice harvested area (F12)	0.25	A weak positive linear relationship
Number of farmer households (F13)	0.17	A weak positive linear relationship
Population density (F14)	0.12	A weak positive linear relationship

SM 20 Relationships between agricultural drought sensitivity and influencing factors at 3m10

Influential factor on ADS	Correlation coefficient (R)	Scale for R interpretation [53]
Agricultural frequency drought (F01)	0.84	A strong positive linear relationship
Agricultural intensity drought (F02)	0.84	A strong positive linear relationship
Average SPEI: 3m10 (F03)	0.21	A weak positive linear relationship
Average SPI: 6m10 (F04)	0.16	A weak positive linear relationship
Land use (F05)	0.44	A moderate positive relationship
Agricultural irrigation area (F06)	-0.01	A weak negative linear relationship
Distance to waterbody (F07)	-0.16	A weak negative linear relationship
Drainage density (F08)	0.21	A weak positive linear relationship
Soil drainage (F09)	-0.24	A weak negative linear relationship
Landform (F10)	-0.22	A weak negative linear relationship
Elevation (F11)	-0.36	A moderate negative relationship
Average rice harvested area (F12)	0.30	A moderate positive relationship
Number of farmer households (F13)	0.20	A weak positive linear relationship
Population density (F14)	0.17	A weak positive linear relationship

SM 21 Relationships between agricultural drought sensitivity and influencing factors at 6 m10

Influential factor on ADS	Correlation coefficient (R)	Scale for R interpretation [53]
Agricultural frequency drought (F01)	0.81	A strong positive linear relationship
Agricultural intensity drought (F02)	0.82	A strong positive linear relationship
Average SPEI: 6m10 (F03)	0.30	A moderate positive relationship
Average SPI: 6m10 (F04)	0.35	A moderate positive relationship
Land use (F05)	0.36	A moderate positive relationship
Agricultural irrigation area (F06)	0.02	A weak positive linear relationship
Distance to waterbody (F07)	-0.16	A weak negative linear relationship
Drainage density (F08)	0.08	A weak positive linear relationship
Soil drainage (F09)	-0.17	A weak negative linear relationship
Landform (F10)	-0.13	A weak negative linear relationship
Elevation (F11)	-0.21	A weak negative linear relationship
Average rice harvested area (F12)	0.18	A weak positive linear relationship
Number of farmer households (F13)	0.15	A weak positive linear relationship
Population density (F14)	0.11	A weak positive linear relationship