Table

Table S1 Assembled environmental variables in the study area.

Variable	References
Spectral reflectances	
Coastal aerosol band (Coastal), Blue band (Blue), Green band (Green), Red band (Red), Red edge band 1 (RE1), Red edge band 2 (RE2), Red edge band 3 (RE3), Near Infrared band (NIR), Red edge band 4 (RE4), Water vapor band (W), Short Wavelength band 1 (SW1), Short Wavelength band 2 (SW2)	
Band ratios	
Green/Blue (GB), Red/Blue (RB), Red/Green (RG), NIR/Blue (NB), NIR/Green (NG), NIR/Red (NR), SW1/Blue (S1B), SW1/Green (S1G), SW1/Red (S1R), SW1/NIR (S1N), SW2/Blue (S2B), SW2/Green (S2G), SW2/Red (S2R), SW2/NIR (S2N), SW2/SW1 (S2S1), RE1/Blue (RE1B), RE1/Green (RE1G), RE1/Red (RE1R), RE2/Blue (RE2B), RE2/Green (RE2G), RE2/Red (RE2R), RE2/RE1 (RE2RE1), RE3/Blue (RE3B), RE3/Green (RE3G), RE3/Red (RE3R), RE3/RE1 (RE3RE1), RE3/RE2 (RE3RE2), NIR/RE1 (NRE1), NIR/RE2 (NRE2), NIR/RE3 (NRE3), RE4/Blue (RE4B), RE4/Green (RE4G), RE4/Red (RE4R), RE4/RE1 (RE4RE1), RE4/RE2 (RE4RE2), RE4/NIR (RE4N), RE4/RE3 (RE4RE3)	
Red band-based vegetation indices	
Normalized Difference Vegetation Index (NDVI), Normalized Difference Green Index (NDVIg), Simple Ratio (SR), Transformed Spectral Index (TVI), Green Chlorophyll Index (CIg), Soil Adjusted Vegetation Index (SAVI), Atmospherically Resistant Vegetation Index (ARVI),	[1], [2]
Red edge band-based vegetation indices	
Renormalized Normalized Difference Vegetation Index (RNDVI), Sentinel-2 Red-Edge Position (S2REP), MERIS Terrestrial Chlorophyll Index (MTCI), Inverted Red-Edge Chlorophyll Index (IRECI), Normalized Difference Red-edge Index (NDVIr), Red-edge Chlorophyll Index (CIr), Modified Chlorophyll Absorption in Reflectance Index (MCARI), Transformed Chlorophyll Absorption in Reflectance Index (TCARI)	[3] [4], [5], [6]
Bare soil indices	
Bare soil index (BSI), Normalized Difference Soil Index (NDSI)	[7]
Water indices	
Normalized Difference Water Index (NDWI), Moisture Stress Index (MSI), Mid-infrared Index (MidIR)	[8], [9], [10]
Temperature indices	
At-satellite brightness temperature for band 10 (T1) and band 11 (T2) (Unit: K)	
Topographic attributes	
Elevation (Elevation) (unit: m), Aspect (Aspect) (unit: Degree), Flow Accumulation (FlowAccu), Slope (Slope) (unit: Degree)	

Geographic attributes	
X coordinate (Xcoord, unit: m), Y coordinate (Ycoord, unit: m), Distance to Yellow River (DTR, unit: m), Distance to Channel (DTC, unit: m)	
Salinity indices	
Salinity Index 1 (SI1), Salinity Index 2 (SI2), Salinity Index 3 (SI3)	[11], [12]
Principal components of remote sensing bands	
The first principal component score (P1), The second principal component score (P2), The third principal component score (P3)	
Crop types	
Peanut, maize, sesame, bean, grape, sweet potato, soybean, rice	
Remote sensing images	
Landsat 8 image (LT), Brovey PAN Landsat 8 image (LTb), IHS PAN Landsat 8 image (LTi), GS PAN Landsat 8 image (LTg), Sentinel 2 image (ST), Brovey fused Sentinel 2-Landsat 8 image (STb), IHS fused Sentinel 2-Landsat 8 image (STi), GS fused Sentinel 2-Landsat 8 image (STg)	

Figure

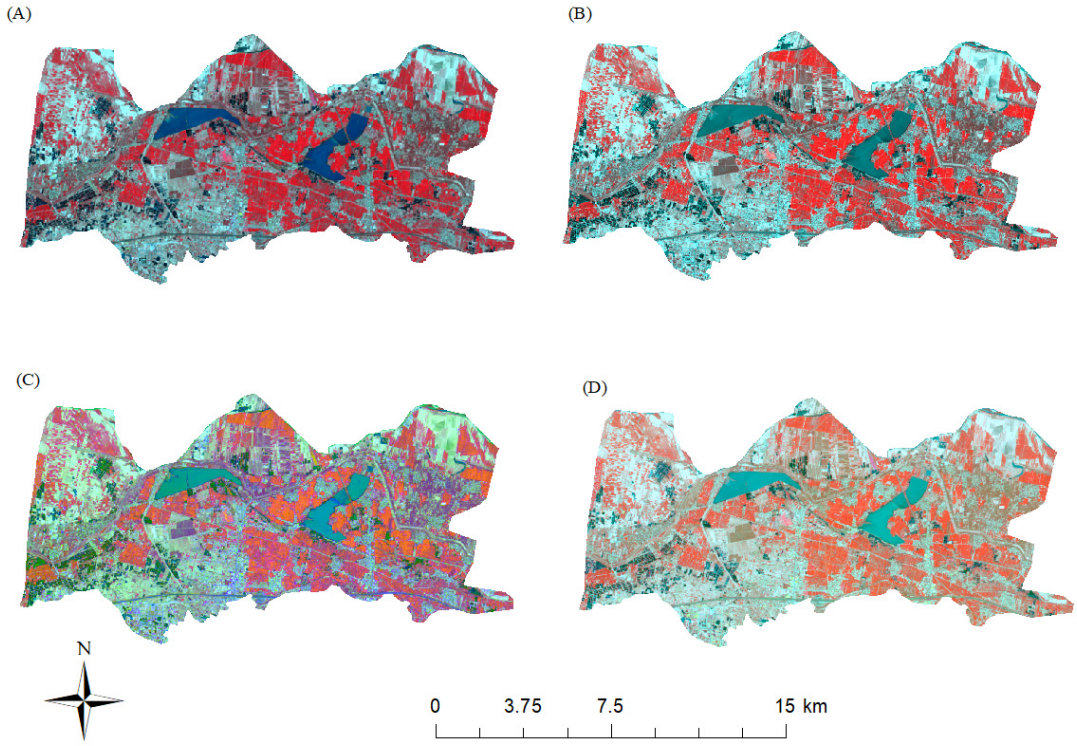

Figure S1. Remote sensing images of (A) MS Landsat 8, (B) Brovey PAN Landsat 8, (C) IHS PAN Landsat 8 and (D) GS PAN Landsat 8 images in the study area.

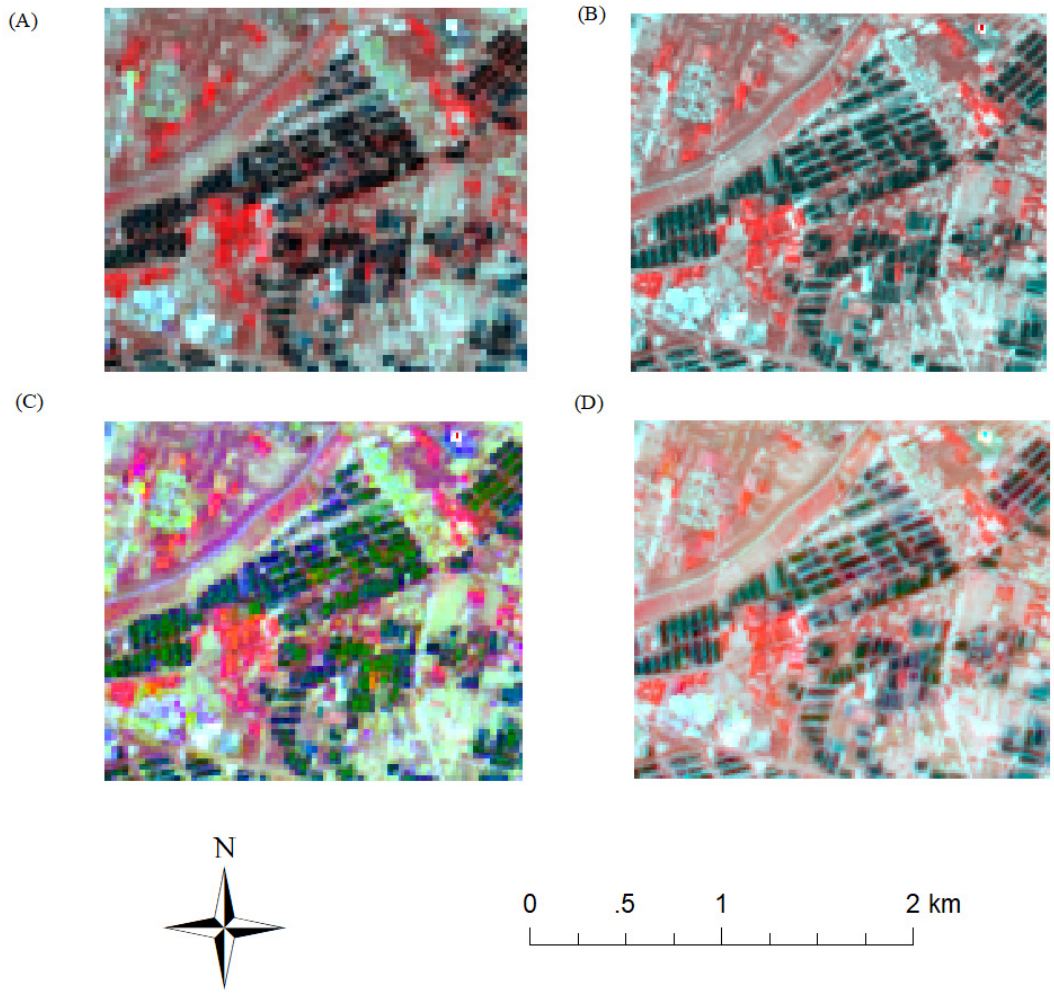

Figure S2. Remote sensing images of (A) MS Landsat 8, (B) Brovey PAN Landsat 8, (C) IHS PAN Landsat 8 and (D) GS PAN Landsat 8 images in the Land Parcel A.

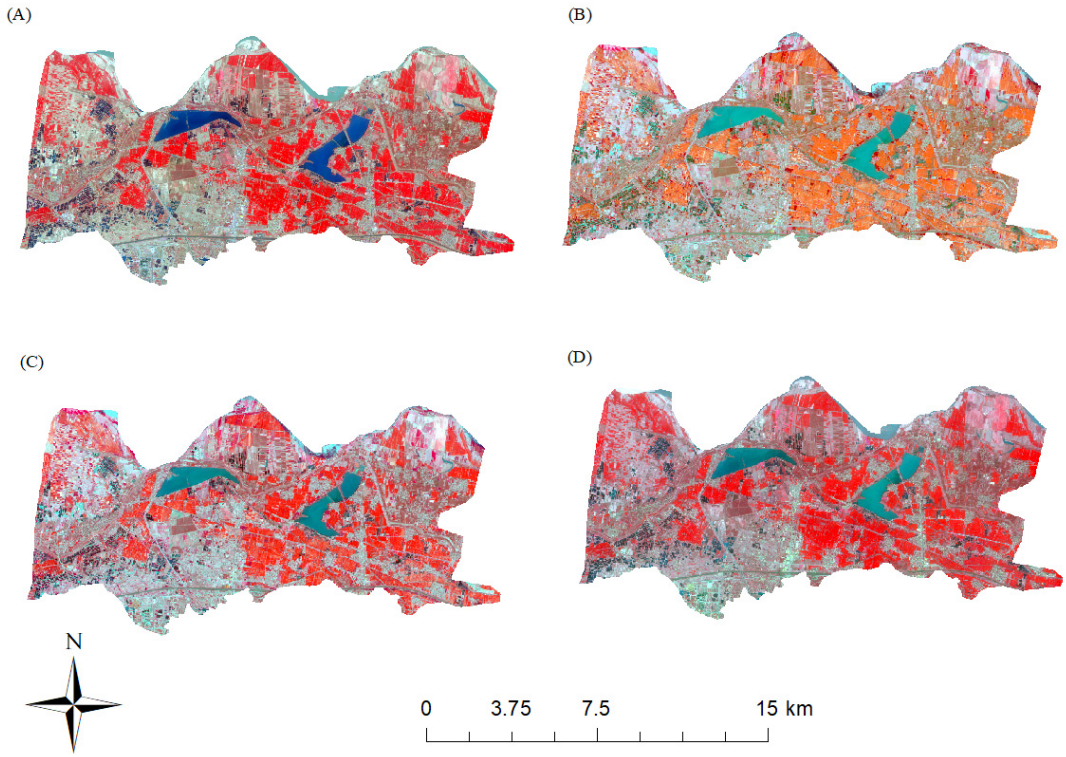

Figure S3. Remote sensing images of (A) MS Sentinel 2, (B) Brovey fused Sentinel 2-Landsat 8, (C) IHS fused Sentinel 2-Landsat 8 and (D) GS fused Sentinel 2-Landsat 8 in the study area.

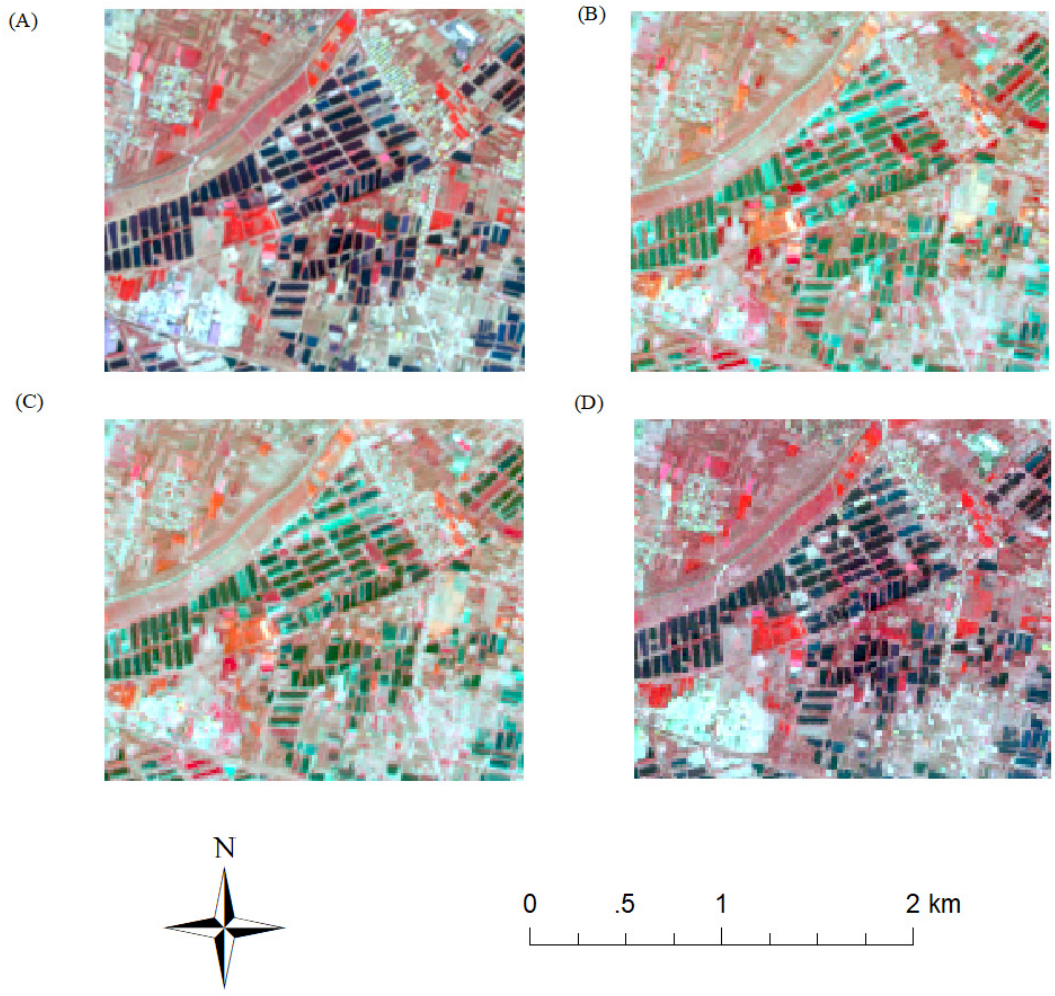

Figure S4. Remote sensing images of (A) MS Sentinel 2, (B) Brovey fused Sentinel 2-Landsat 8, (C) IHS fused Sentinel 2-Landsat 8 and (D) GS fused Sentinel 2-Landsat 8 in Land Parcel A.

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