

Fig. S5 (a) and (b) A comparison of anthropogenic SO₂ emission distributions at 30 min×30 min resolution (units: Mg/year per grid) in year 2000 versus year 2006 (after Streets et al, 2003; Zhang et al., 2009). The areas with emission > 5200 in 2000 (indicated by green-yellow-red) were separately distributed over central-eastern China, while those areas with emission > 5000 (indicated by orange-red-magenta) extended significantly to intense regional sources in eastern China, the Yangtze River Delta region (YRD), the Pearl River Delta region (PRD), the Sichuan Basin (SCB) and Guizhou Province.

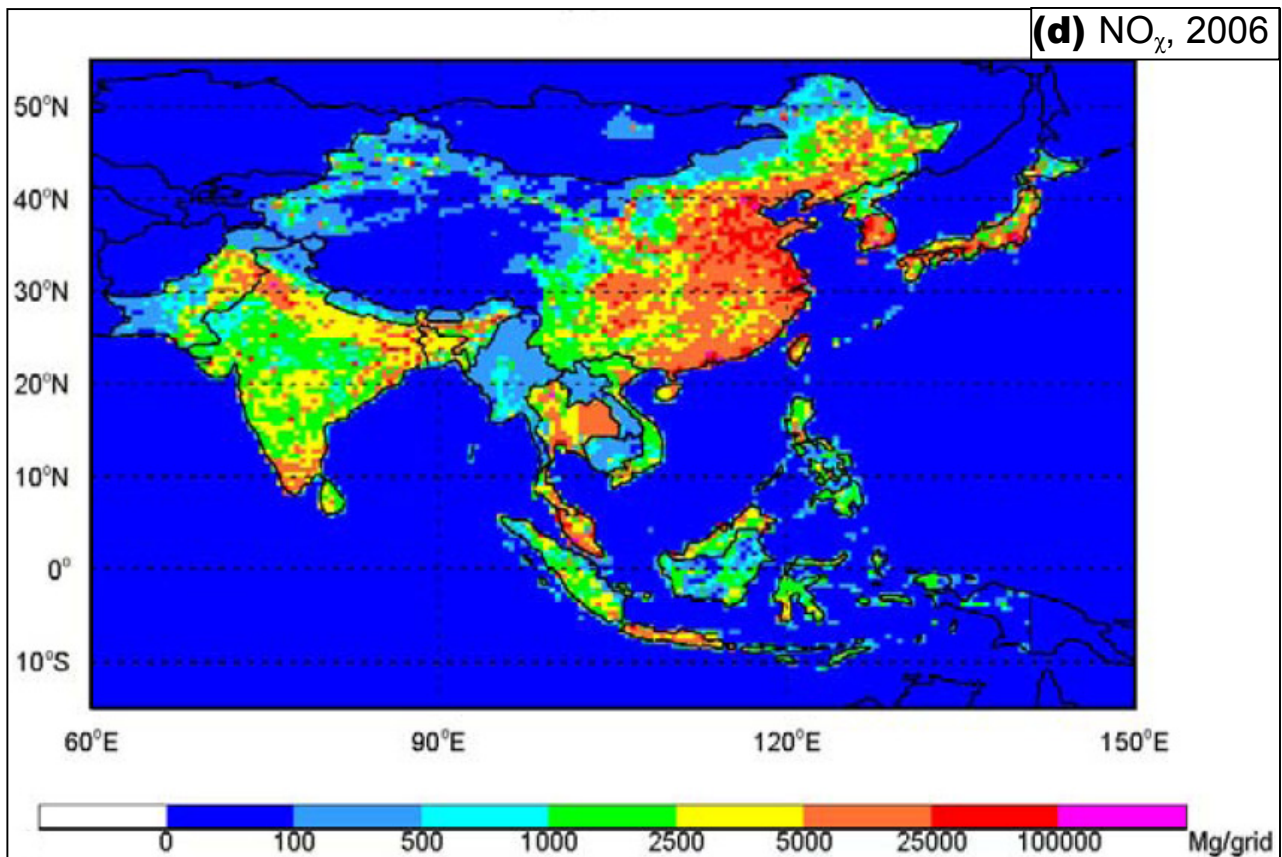
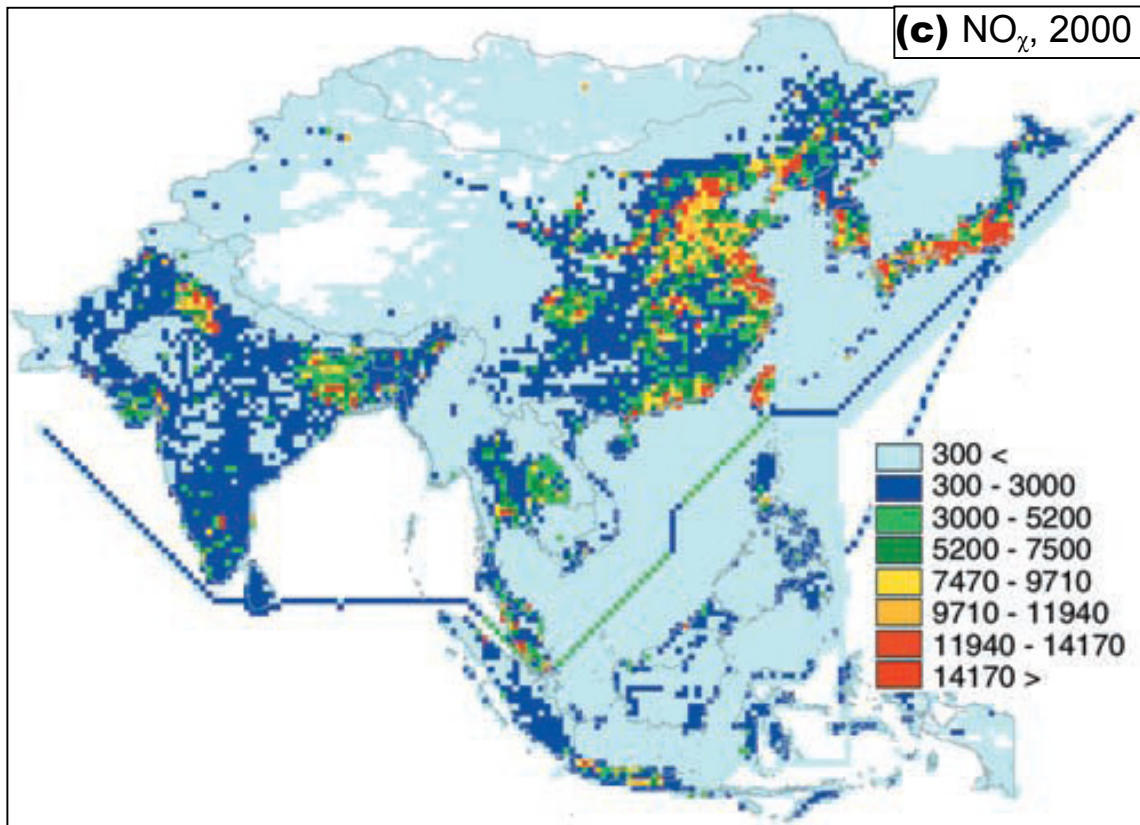


Fig. S5 (c) and (d) A comparison of anthropogenic NO_x emission distributions at 30 min×30 min resolution (units: Mg/year per grid) in year 2000 versus year 2006 (after Streets et al, 2003; Zhang et al., 2009). The areas with emission > 5200 in 2000 (indicated by green-yellow-red) were dispersedly distributed over central-eastern China, while those areas with emission > 5000 (indicated by orange-red-magenta) extended significantly to intense regional sources in eastern China, YRD, PRD, SCB and Guizhou Province.

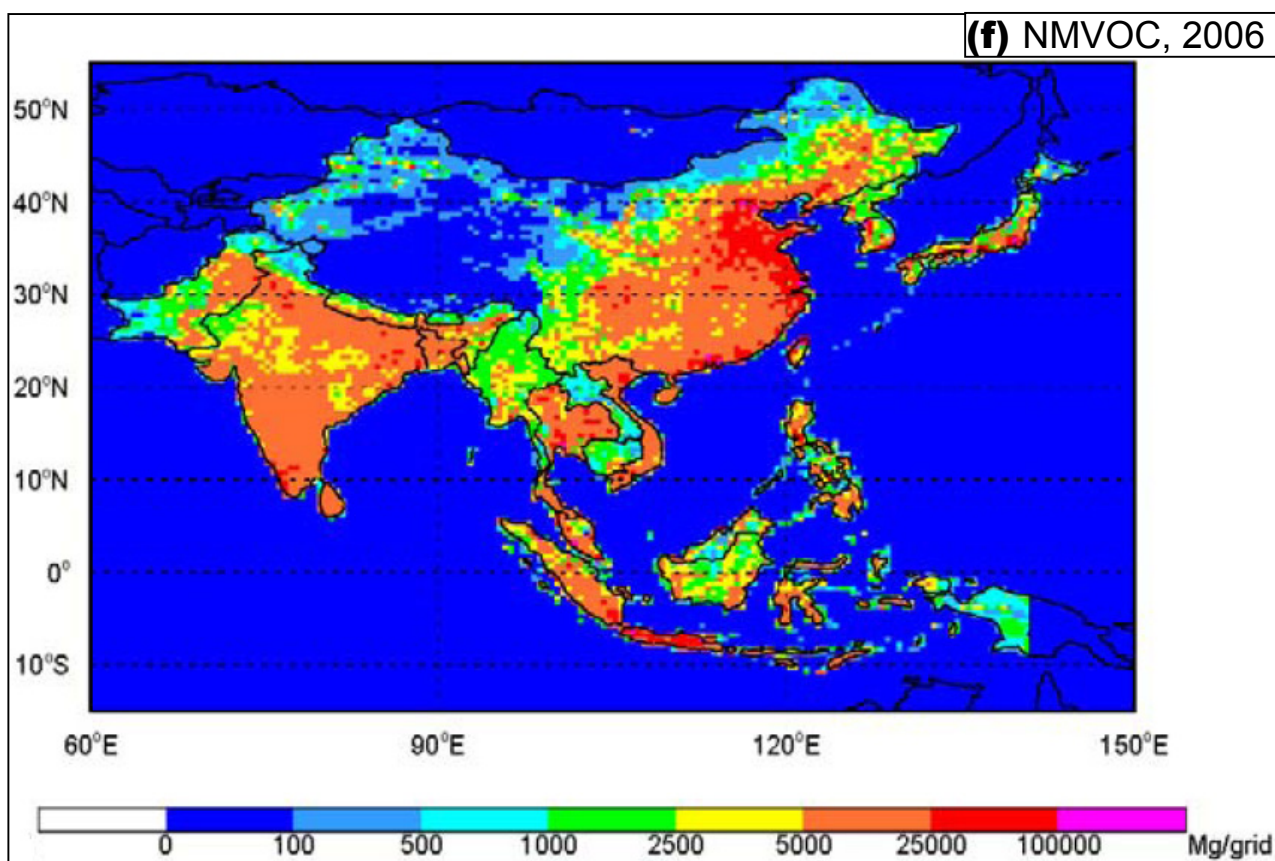
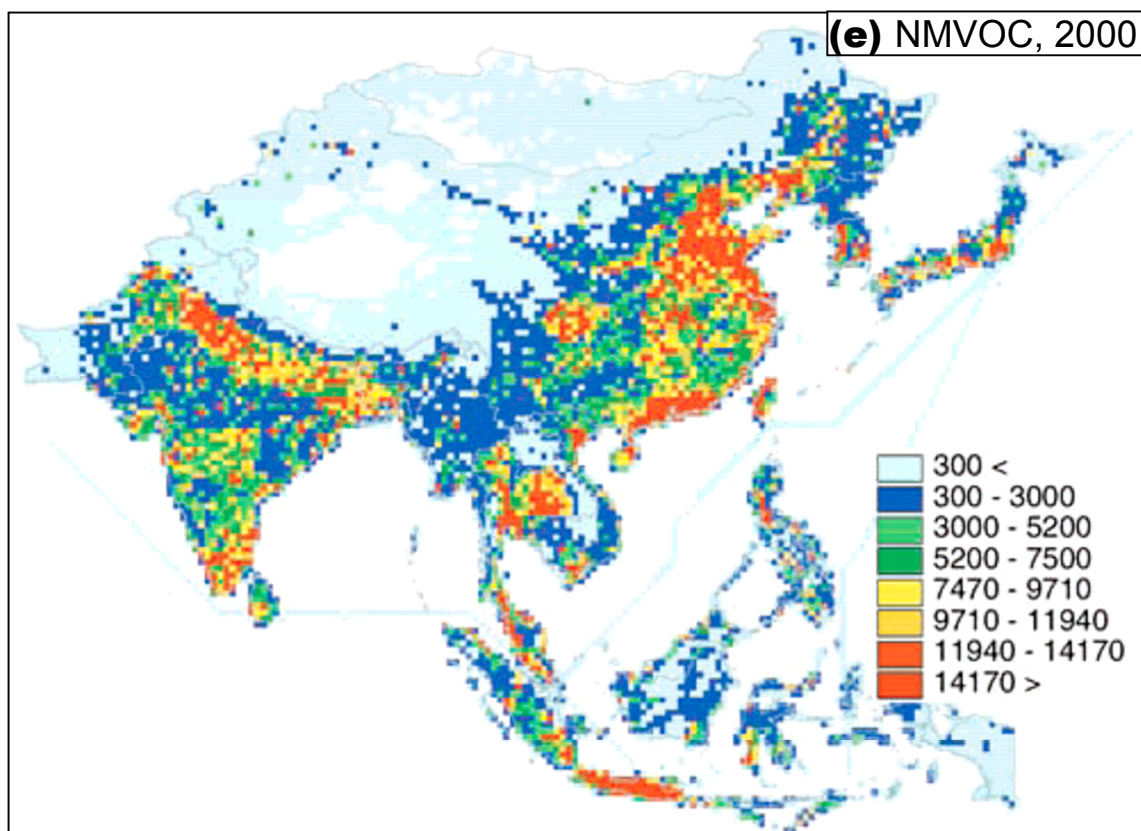


Fig. S5 (e) and (f) A comparison of anthropogenic NMVOC (nonmethane volatile organic compounds) emission distributions at 30 min×30 min resolution (units: Mg/year per grid) in year 2000 versus year 2006 (after Streets et al, 2003; Zhang et al., 2009). The areas with emission > 5200 in 2000 (indicated by green-yellow-red) were distributed in three separated regions including eastern China, central-southern China, SCB and Guizhou Province, while those areas with emission > 5000 (indicated by orange-red-magenta) extended and joined to an entire intense area-source in central-eastern China.

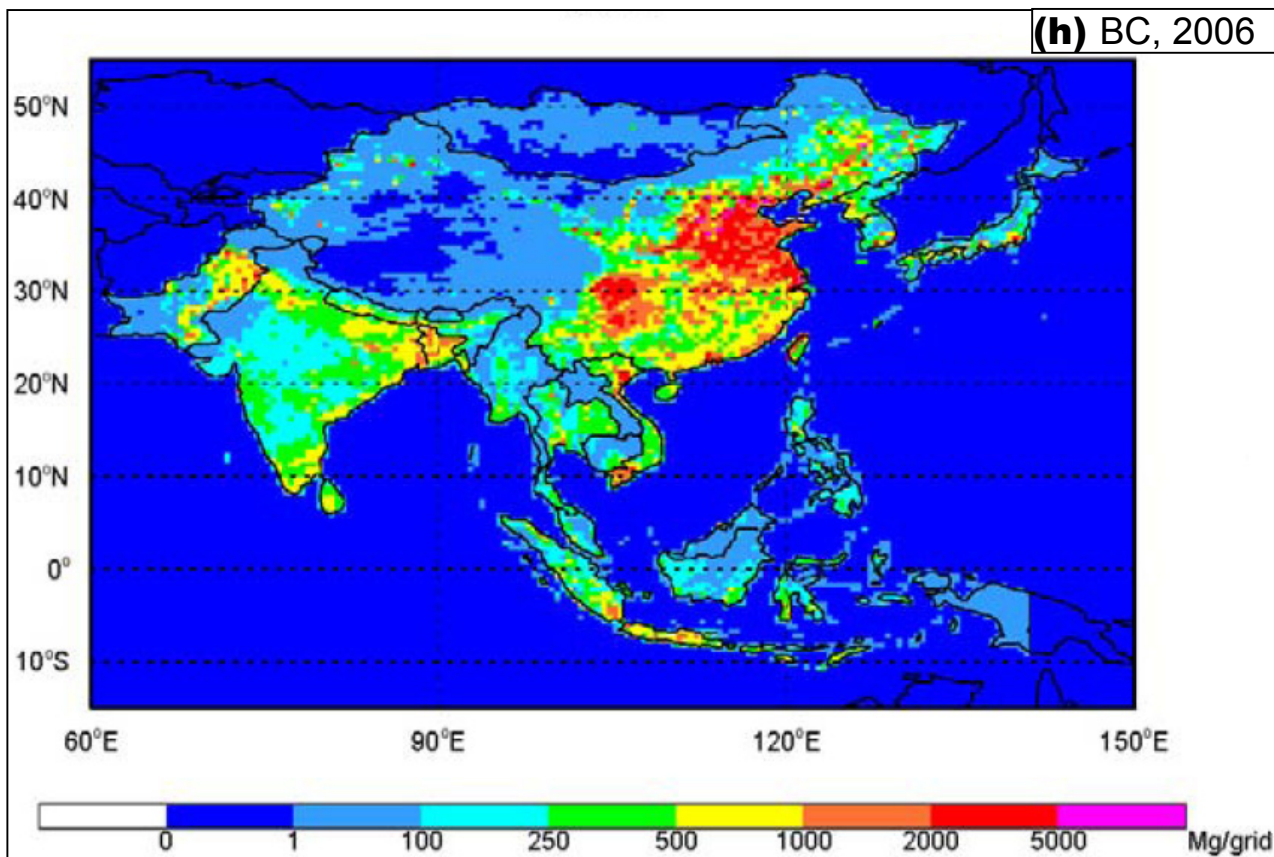
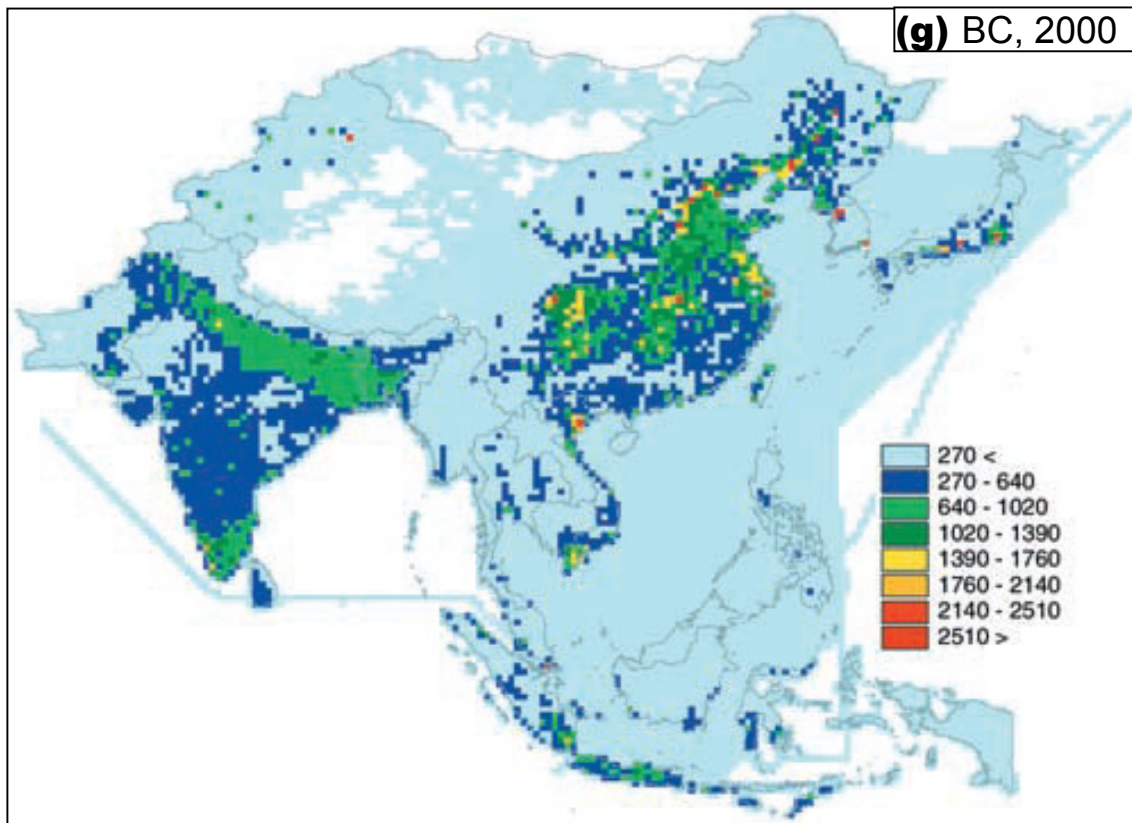


Fig. S5 (g) and (h) A comparison of anthropogenic black carbon (BC) emission distributions at 30 min×30 min resolution (units: Mg/year per grid) in year 2000 versus year 2006 (after Streets et al., 2003; Zhang et al., 2009). The areas with emission > 1020 in 2000 (indicated by green-yellow-red) were sporadically distributed over central-eastern China, while those areas with emission > 1000 (indicated by orange-red-magenta) extended significantly to intense regional sources in eastern China, SCB and Guizhou Province, the northern part of YRD, as well as some areas of PRD.

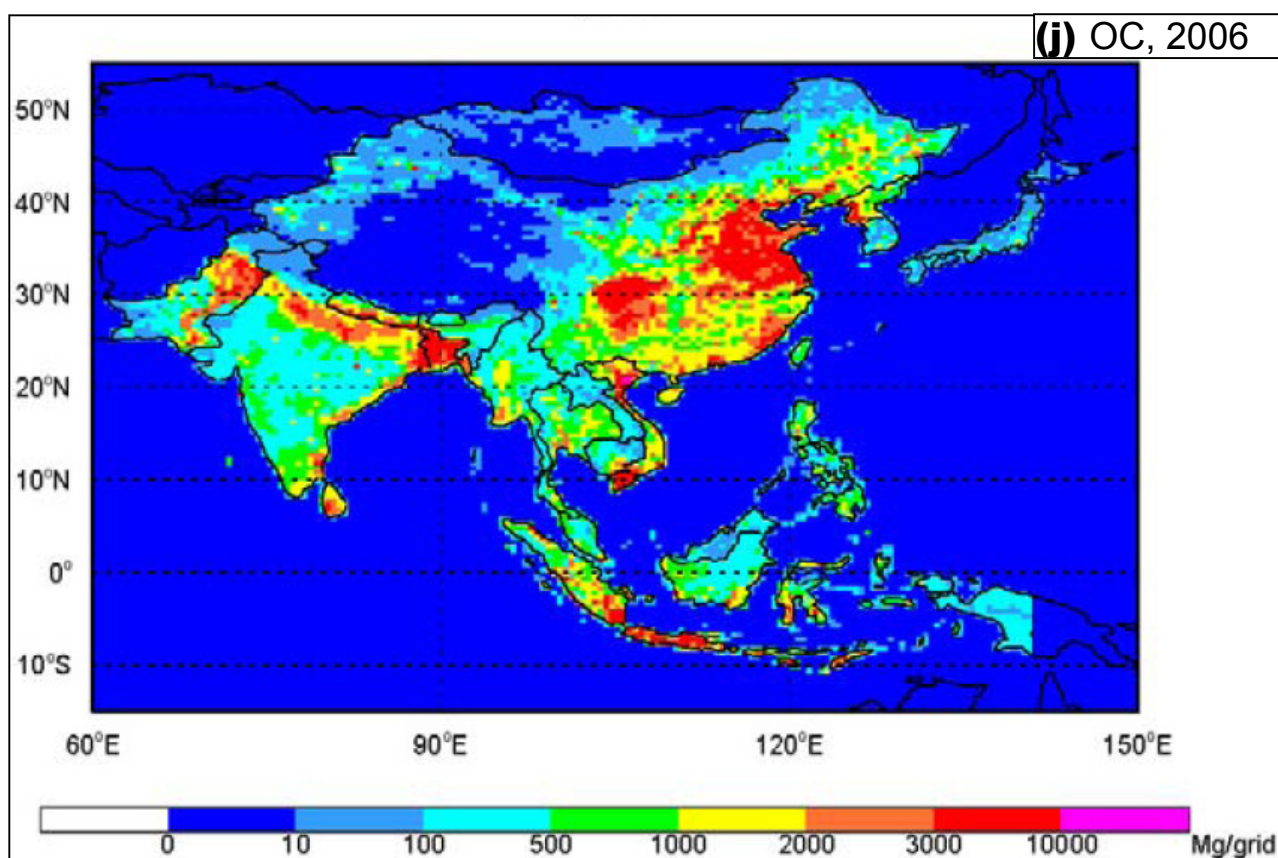
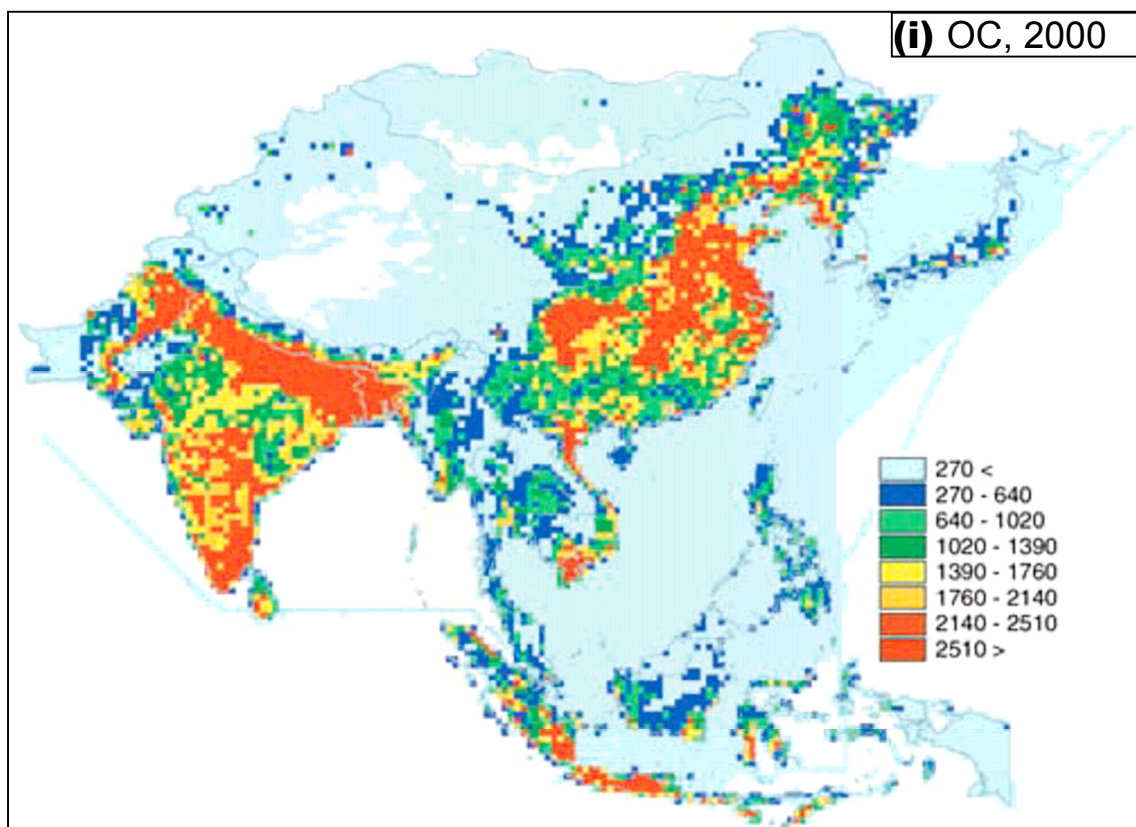


Fig. S5 (i) and (j) A comparison of anthropogenic organic carbon (OC) emission distributions at 30 min×30 min resolution (units: Mg/year per grid) in year 2000 versus year 2006 (after Streets et al, 2003; Zhang et al., 2009). In contrast, OC emission distribution showed no significant extension from 2000 to 2006 (even with a decreasing tendency in areas such as Hubei Providence and Hunan Province); this is consistent with the decrease in OC emission estimation from 3.4 Tg in 2000 to 3.2 Tg in 2006.

References:

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Zhang, Q., Streets, D. G., Carmichael, G. R., He, K. B., Huo, H., Kannari, A., Klimont, Z., Park, I. S., Reddy, S., Fu, J. S., Chen, D., Duan, L., Lei, Y., Wang, L. T., and Yao, Z. L.: Asian emissions in 2006 for the NASA INTEX-B mission, *Atmos. Chem. Phys.*, 9, 5131–5153, 2009, <http://www.atmos-chem-phys.net/9/5131/2009/>.