

**ESA School Atlas**  
**The New Way of**  
**Teaching**  
**Geography...**  
**EGU Conference**  
**Vienna, April 2009**

**Lothar Beckel**  
**GEOSPACE International, Salzburg**







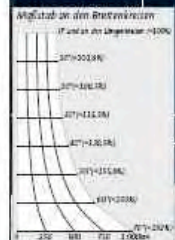
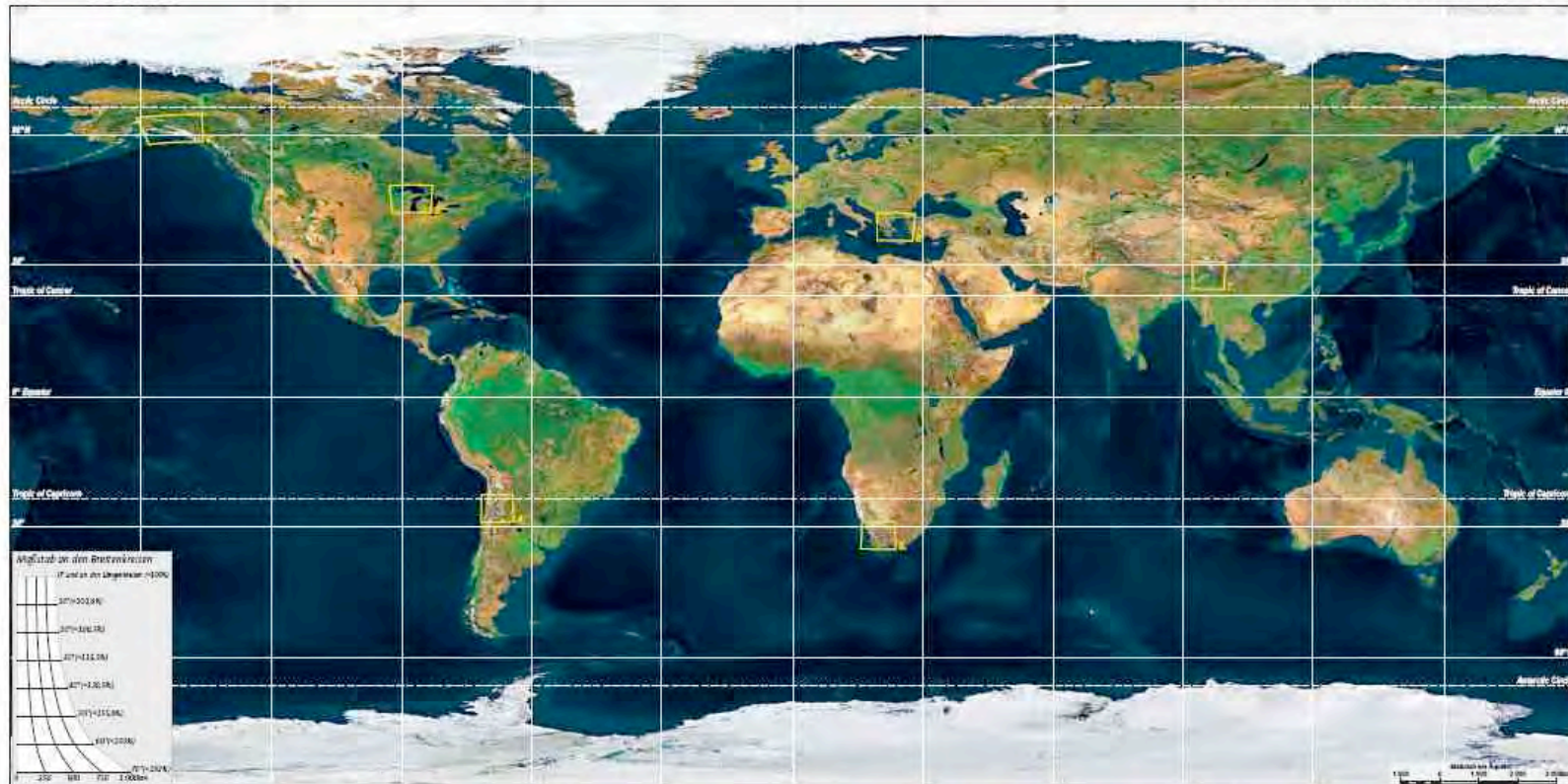
# Global Satellite Image Map

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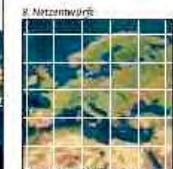
Die Erde

Satellitenbild Mosaik, Landschaftstypen, Netzentwürfe

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1. Globale Überlokalkarte



3a. Quadratische Plankarte



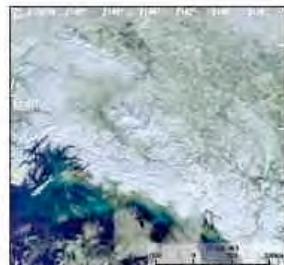
3b. Lambert konforme Kegelkarte



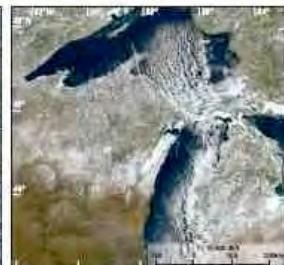
3c. Lambert (Mathematische Kegelkarte)



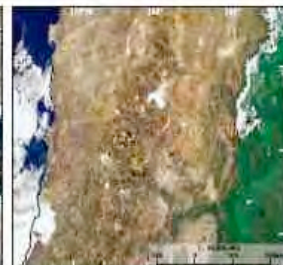
3d. Wilkes Zylinderprojektion



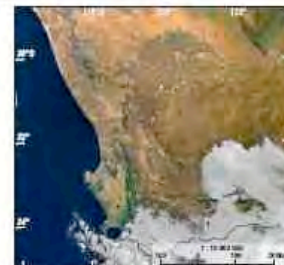
2. Satellitenkarte von Alaska, USA - Kamada, Februar (2004)



3. Große Seen, USA - Kanada, März (2005)



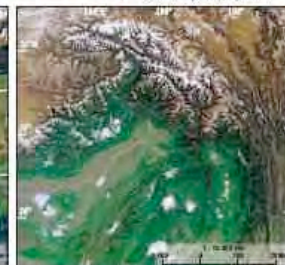
4. Westküste Südamerikas, Chile - Argentinien, Februar (2005)



5. Südküste von Südafrika, März (2005)



6. Balkanhalbinsel und Ägäis, Griechenland - Türkei, März (2005)

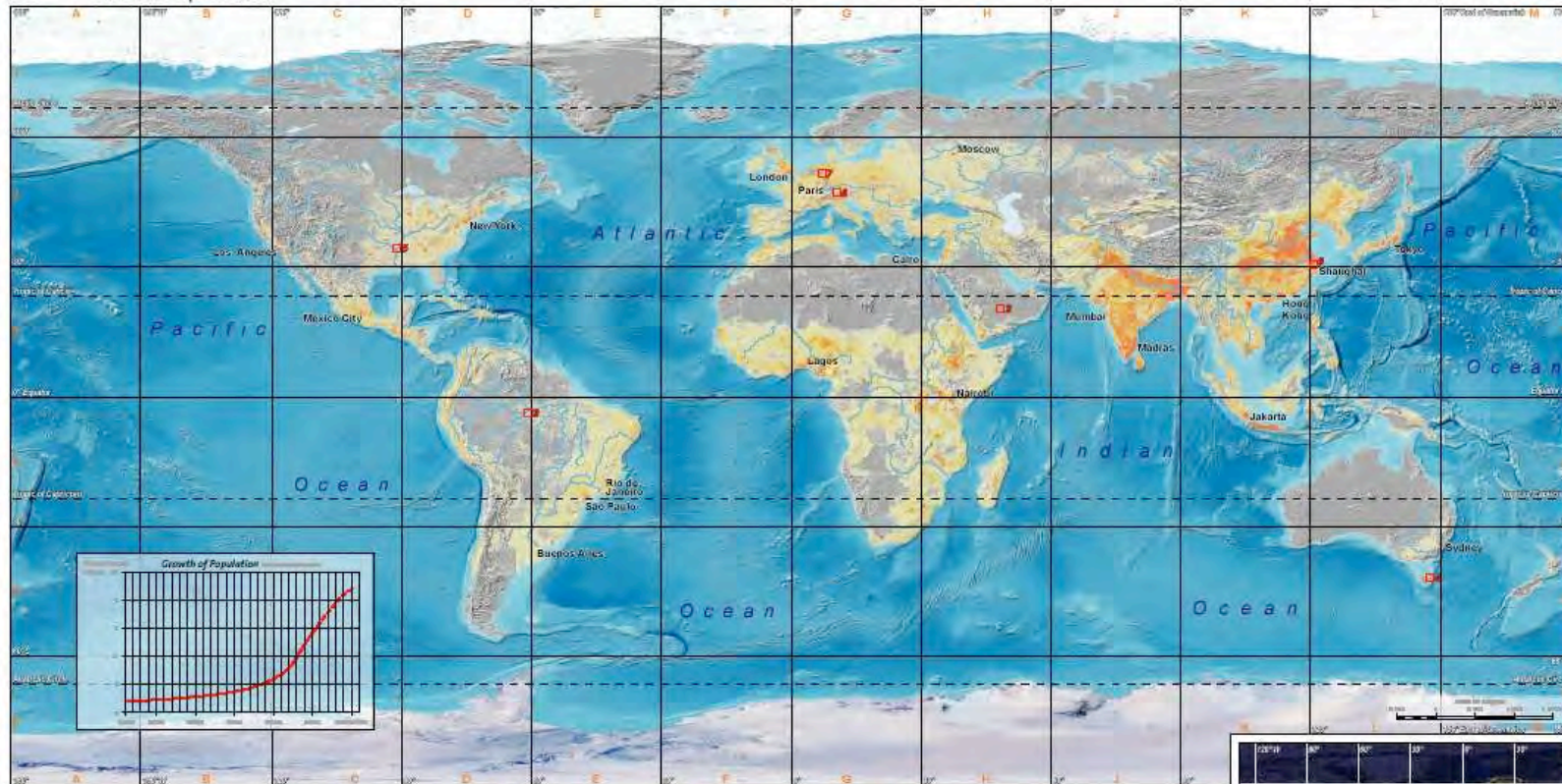


7. Brahmaputra und Meghnaungab, Indien - China, Nov. (2005)

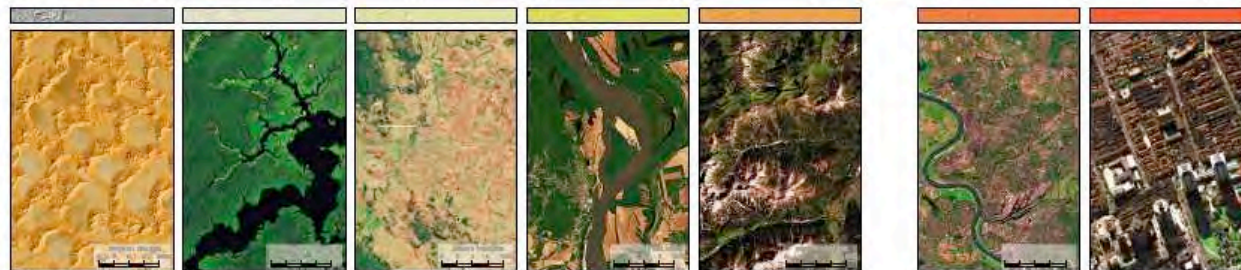
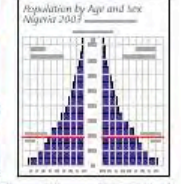
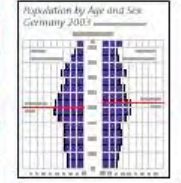
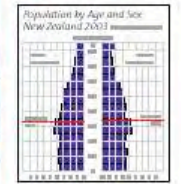


# Global Population

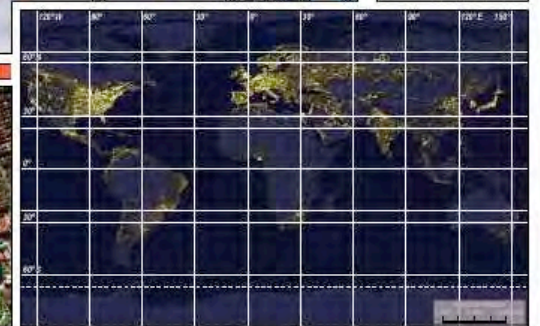
38 Global Population



Distribution of World Population 39



1. Ruh-Al-Rah, Saudi Arabia. 2. Amazonia, Brazil. 3. Tasmania, Australia. 4. Mississippi, Arkansas, USA. 5. The Alps, Austria. 6. Rhine Basin, Germany. 7. Shanghai, China.



8. The world at night - light scores as seen by DMSP-Operational Linescan System.

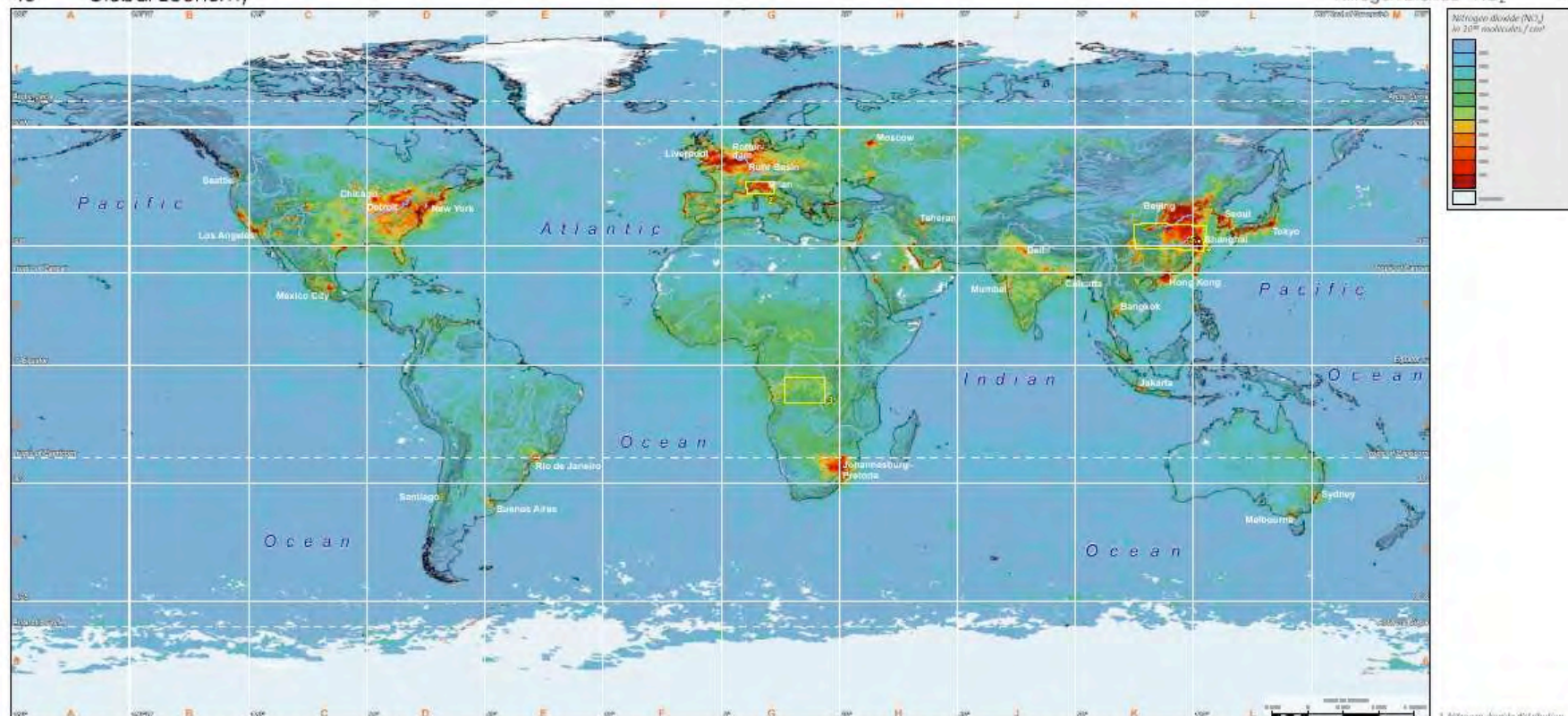


# Global Economy

40 Global Economy

Nitrogen Dioxide - NO<sub>2</sub>

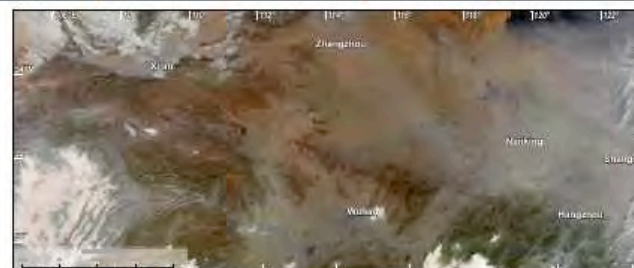
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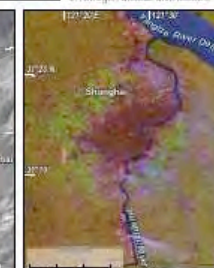
1. Po basin, Italy



2. Democratic Republic of Congo



3. Sichuan basin



4. Shanghai, China

2. Nitrogen dioxide distribution

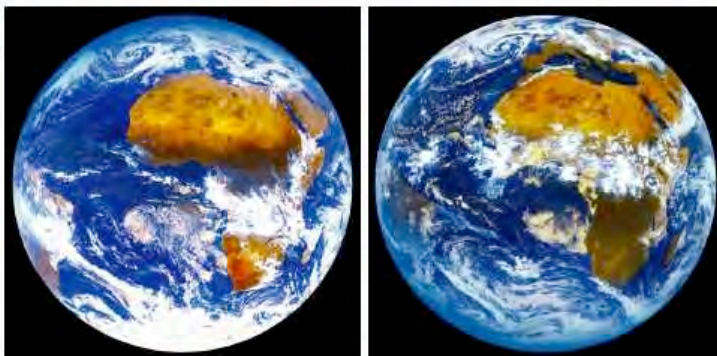


# Africa - Climate, Precipitation, Sahel

96 Africa

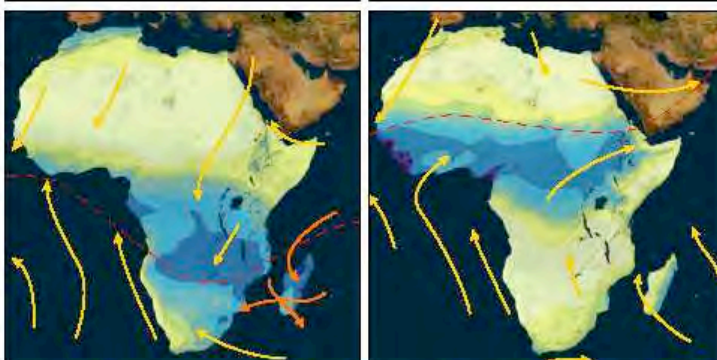
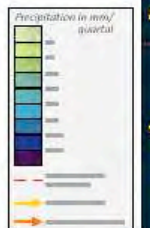
1a. METEOSAT - 12 December 2002

1b. METEOSAT - 18 July 2003



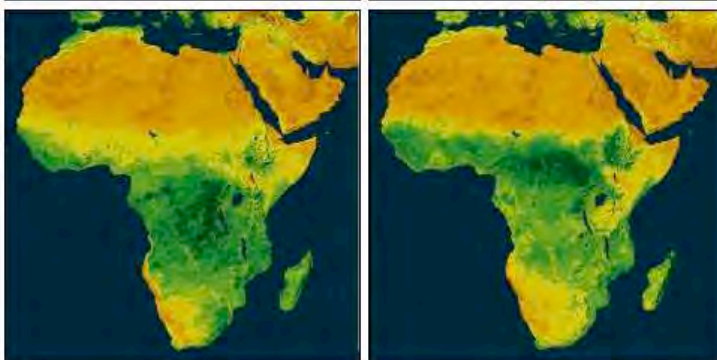
2a. Average precipitation in quarter - December to February

2b. Average precipitation in quarter - June to August

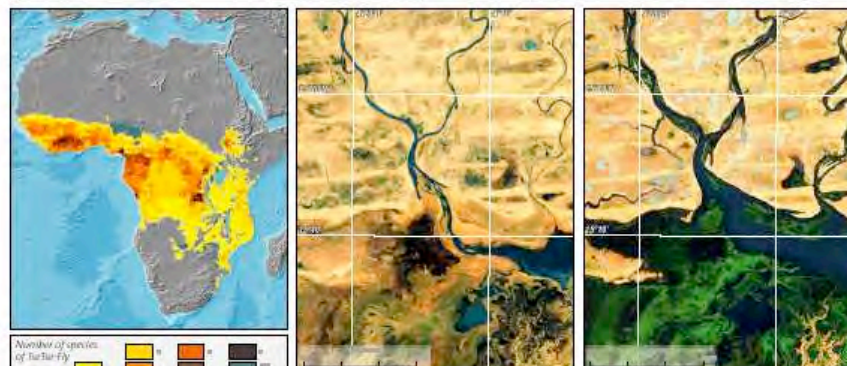
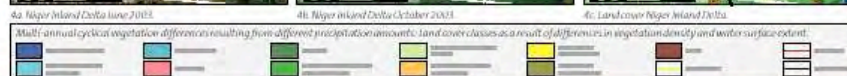
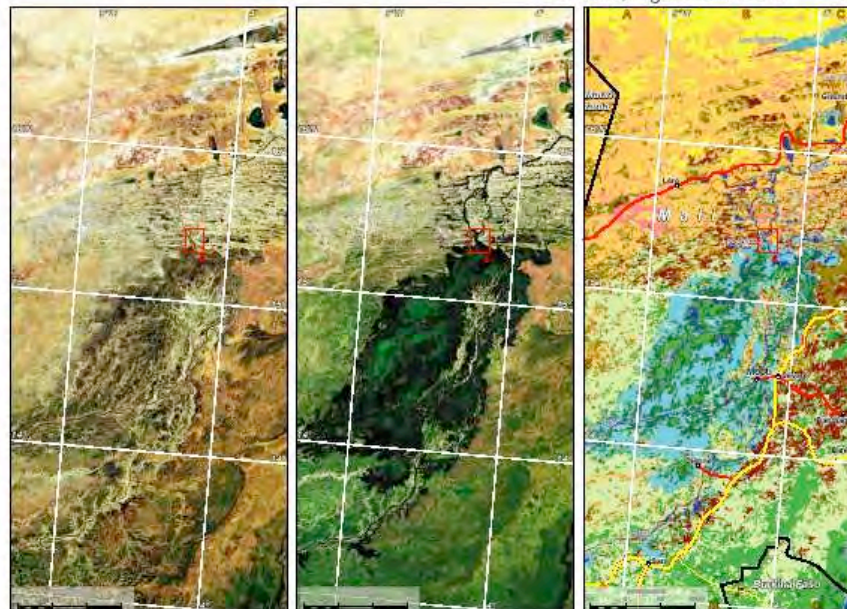


3a. Vegetation - January 2004

3b. Vegetation - July 2004



Climate, Niger Inland Delta 97

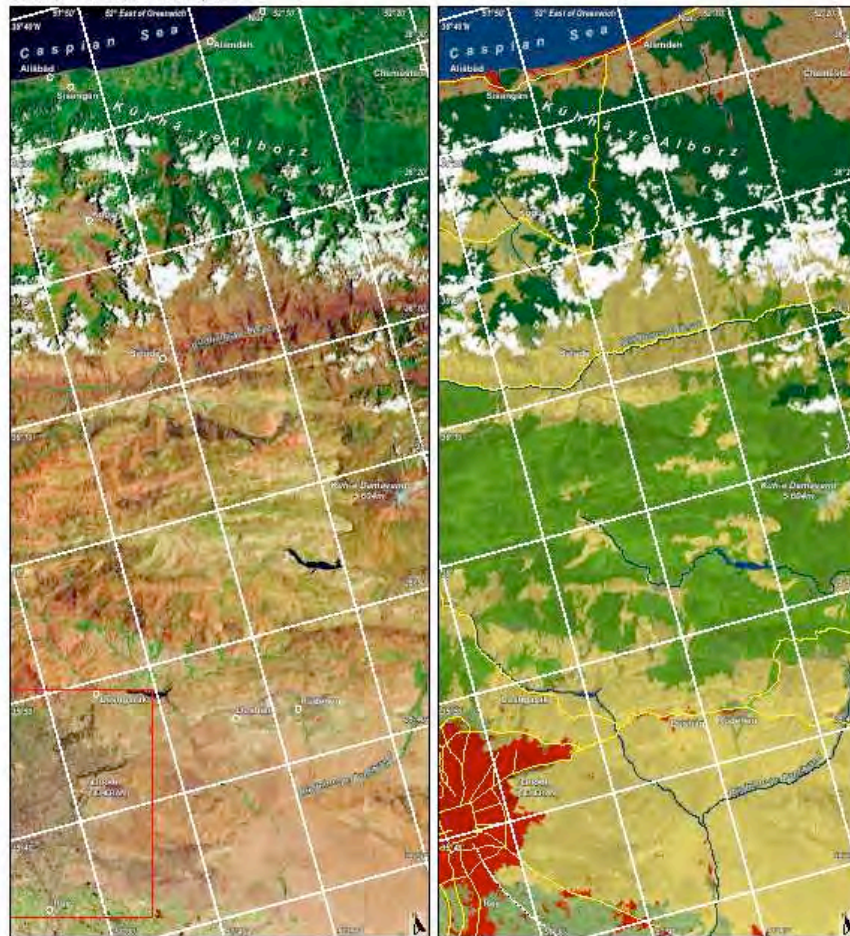


5. Butterfly species spread over humid regions. 6a. Niger inland Delta, outflow of the Niger from Lake Debs, June 2001. 6b. Niger inland Delta, outflow of the Niger from Lake Debs, October 2001.

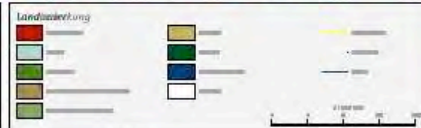


# Nature and Culture

136a Asia Minor, Iran



1a. Land cover of Iran

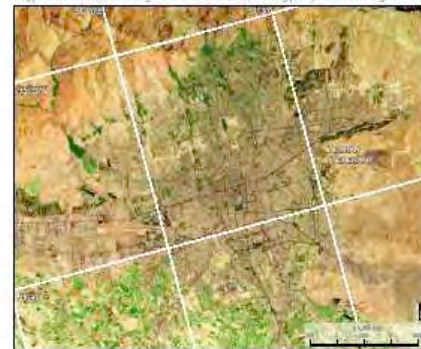


1b. Land cover classification of Iran

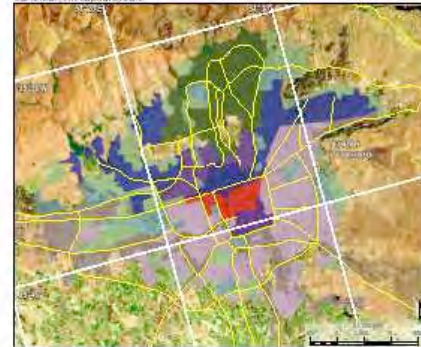
Land Cover, Climate, City Structure 136b



2. Typical cloud situation along the Alborz Mountain range causing precipitation and vegetation growth.



3a. Tehran, the capital of Iran



3b. City structure and district functions superimposed on the satellite image.



4. The Caspian Sea



# Rural Settlement Patterns

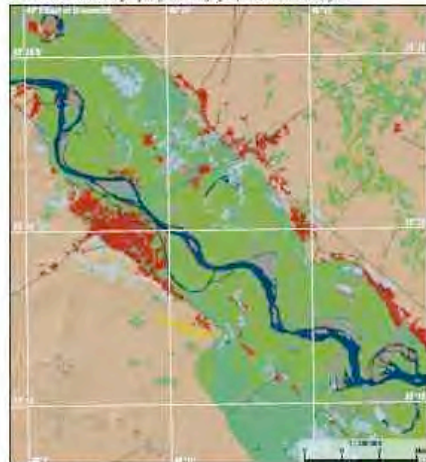
220 Settlement Patterns



2a. Settlement on the edge of irrigated valley of Euphrat, Dar az-Zaur, Syria



2c. Ribbon-bull villages along channel, Donglin, China



2b. Land use Dar az-Zaur, Syria



2d. Land use Donglin, China



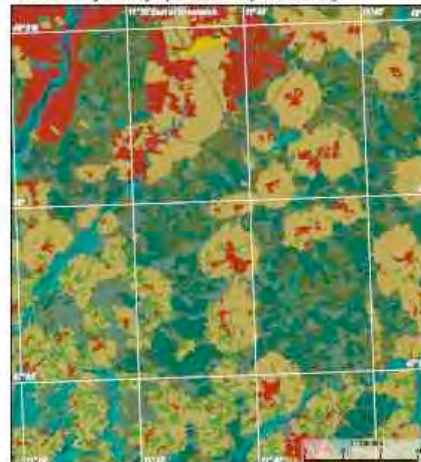
Land Use and Settlement in Rural Regions 221



3a. Ribbon-bull villages and long lot farms, south east of Munich, Germany



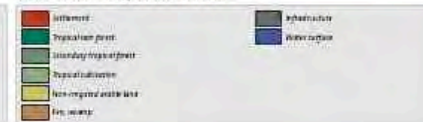
4a. Street villages and round villages with long lot farms, north east of Jaru, Rondonia, Brazil



3b. Land use south east of Munich, Germany



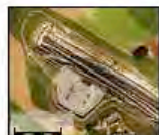
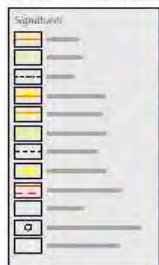
4b. Land use north east of Jaru, Rondonia, Brazil



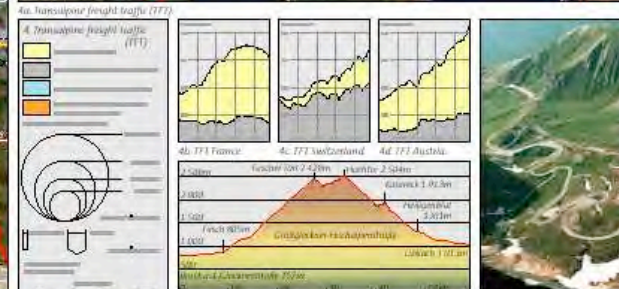
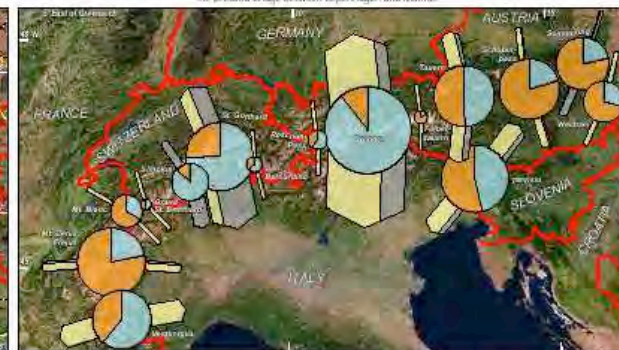
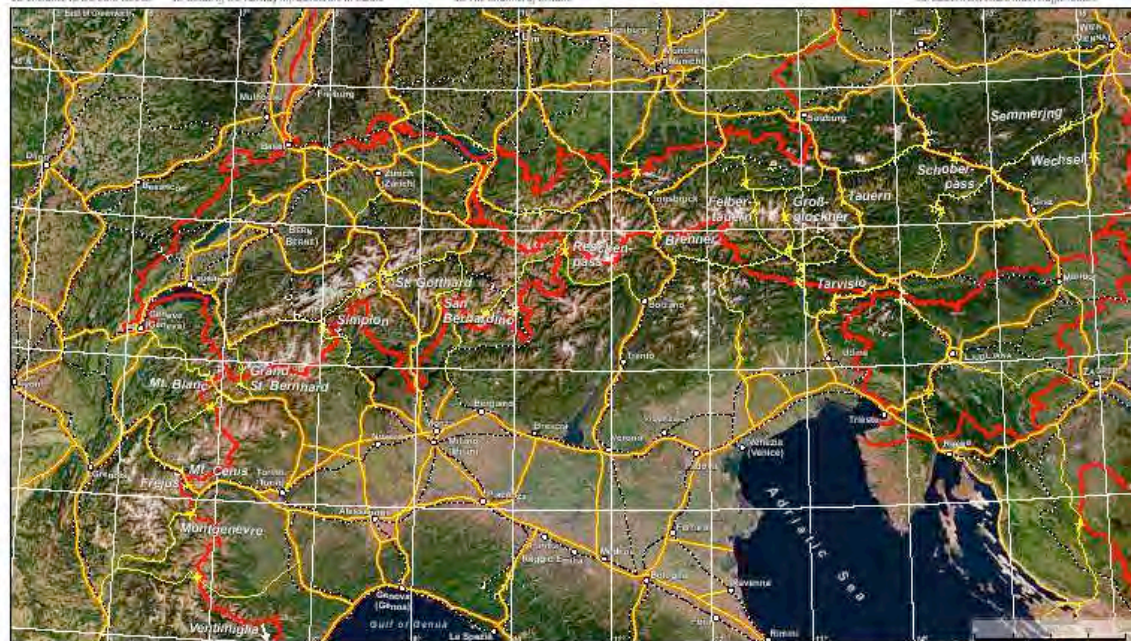


# Infrastructure - Land Traffic

246 Infrastructure



Bridges, Tunnels, Mountain Passes 247



2. Overview of the passes over the Alps

4. Transalpine freight traffic (TFT)

5a. Profile of the pass over Großglockner

5b. Großglockner pass

5c. Profile of the pass over Großglockner

5d. Profile of the pass over Großglockner

5e. Profile of the pass over Großglockner

5f. Profile of the pass over Großglockner

5g. Profile of the pass over Großglockner

5h. Profile of the pass over Großglockner

5i. Profile of the pass over Großglockner

5j. Profile of the pass over Großglockner

5k. Profile of the pass over Großglockner

5l. Profile of the pass over Großglockner

5m. Profile of the pass over Großglockner

5n. Profile of the pass over Großglockner

5o. Profile of the pass over Großglockner

5p. Profile of the pass over Großglockner

5q. Profile of the pass over Großglockner

5r. Profile of the pass over Großglockner

5s. Profile of the pass over Großglockner

5t. Profile of the pass over Großglockner

5u. Profile of the pass over Großglockner

5v. Profile of the pass over Großglockner

5w. Profile of the pass over Großglockner

5x. Profile of the pass over Großglockner

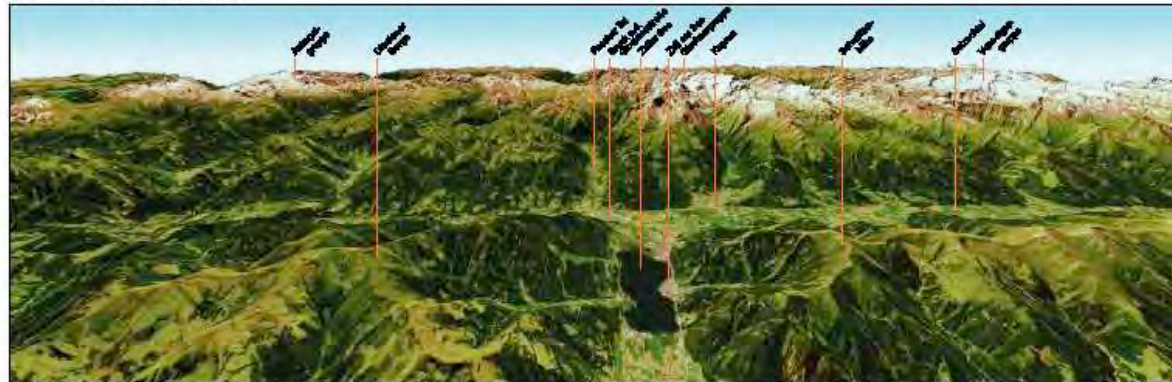
5y. Profile of the pass over Großglockner

5z. Profile of the pass over Großglockner

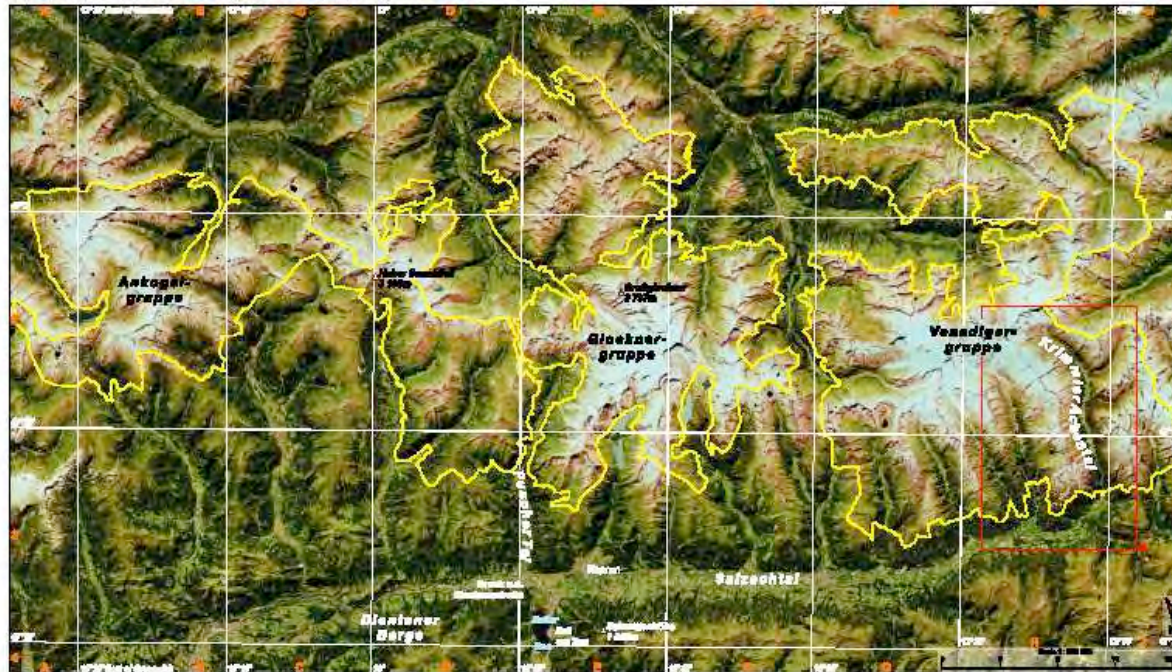


# National Parks (2) - Hohe Tauern

260 National Parks



1. A 3-D view of national park Hohe Tauern created from satellite image maps and digital elevation models.

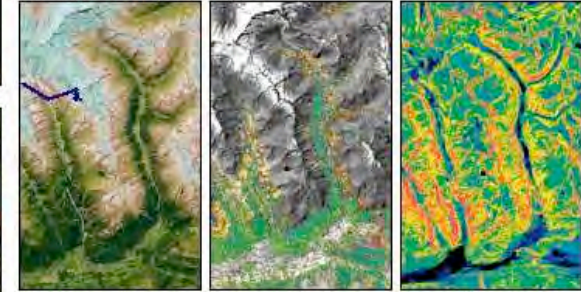


2. National park Hohe Tauern, because of the sun's position in the south-east the satellite image map is south-oriented to obtain a natural relief impression.

Hohe Tauern 261



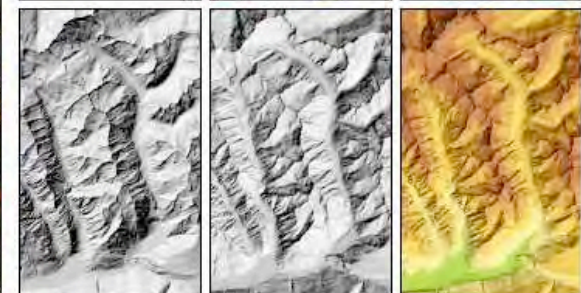
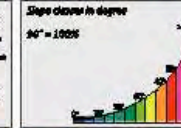
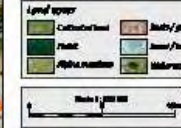
3. The Venadiger mountain range with skidding glaciers.



4a. True colour image (Landsat-TM and SPOT-NV datasets).

4b. Forest classification with main tree species.

4c. Slope model computed from a digital elevation model.



4d. Shaded relief - illumination equivalent to sun position in south-east.

4e. Shaded relief - illumination becomes opposite if observation from opposite position applied.

4f. Coloured digital elevation model.