Why intellectual property can be a barrier to TT

- Intellectual property grant exclusive rights (‘legal monopoly)

- Patents 20 years minimum
- Copyright 50 years minimum
- Trade secrets indefinite

North-South asymmetry in R&D

- OECD countries 78 %
- Asia (excl. Japan) 19 % (China=11,8 %, 53% of researchers in developing countries)
- Latin America 2.4 % (Brazil: 1,3%)
- Near and Middle East 1.2 %
- Africa 0.7 %

- JACQUES GAILLARD, 'Measuring Research and Development in Developing Countries: Main Characteristics and Implications for the Frascati Manual', *Science, Technology & Society* 15:1 (2010)

R&D in developing countries

- Governments are the main suppliers of funding, largely concentrated in few institutions
- The business sector performs much less R&D than the public sector
- R&D is focused on basic and applied research
- Minor or incremental changes is the main type of innovation

Global R&D for ESTs

- 90% of technology development concentrated in USA, EU, Japan and China

Ownership of ESTs

- Companies from Japan, USA, Germany, Korea, France and the UK own around 80% of all patented innovations in:
- solar PV, geothermal, wind, and carbon capture

Patents and clean energy technologies in Africa

- The fact that only 1% of CET patent applications have also been filed in Africa prove that claims… that patent rights provide a barrier to use of CETs, are very largely unfounded for Africa.

- UNEP-EPO www.epo.org/clean-energy-africa, p. 13

ESTs in Africa

- Low filing of foreign patents
- African patents: 0,24% of world patents on CC Mitigation Technologies, 0,26% on CC Adaptation Technologies
- No manufacturing capacity, no threat to technology owners
- Patents granted elsewhere (e.g. India, China) create barriers for access to low cost equipment and technologies in Africa

Transfer of technology

- Reluctance to transfer most effcient technologies
- High licensing fees
- Restrictive practices (grant-back, exports, tying-clauses)

Refusal to deal/restrictive terms & conditions

- HFC-227ea fire protection chemical: Indian firms unable to get license
- Firms from India, Brazil, China, Korea, Mexico unable to gain access to ozone-friendly technology on affordable terms
- Malaysian firm (Solartif) accessed advanced solar PV technology on condition of buying solely from patent holder

Wind turbine technologies

- Chinese companies could only get access to second-tier, often untested technologies

- Proliferation of patents

Ritonavir

- Over 800 patents filed to protect different aspects of the drug and its methods of use

- 400 patents (krill)

- Over 400 worldwide patents related to **krill** (pink gold)

Mobile technology patents

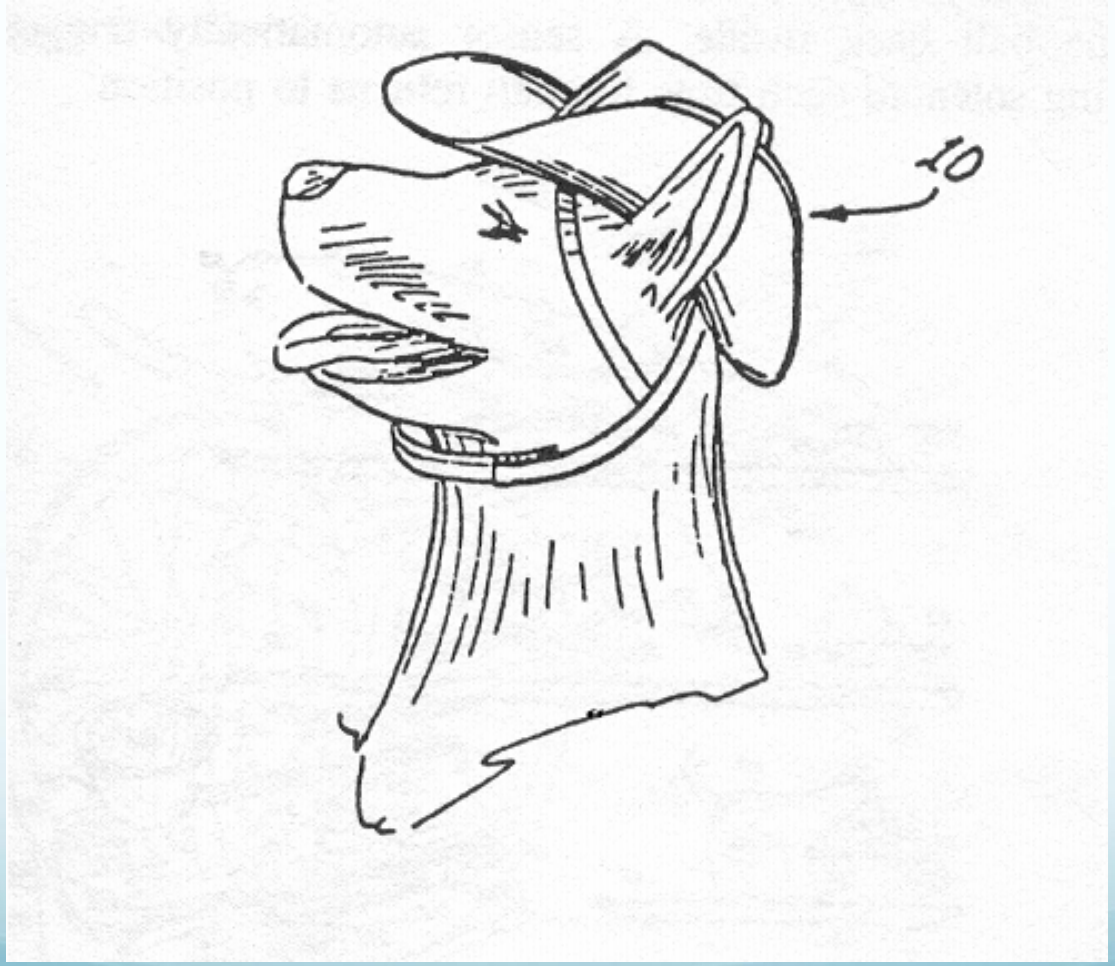
- Nokia: 30.000
- Google take over of Motorola Mobile: 17.000

Animal Hat Apparatus and Metbod

Patent Number: 4,969,317

Date of Patent: Nov. 13, 1990

Inventor: April Ode, Lake Havasu City, AZ



British Patent of Sam Houghton

U.S. Patent 6,239,919 (IBM, 2001)

- Claim 1: A method of providing reservations for restroom use comprising receiving a reservation request from a user; and notifying the user when the restroom is available for his or her use.

Proliferation of ESTs patents

- 400,000 patent documents regarding solar photovoltaic, geothermal, wind, and carbon capture
- 215,000 patents with a main focus on renewable energy applications.

Trade secrets: a barrier for technology transfer in Africa

- …the main factors impeding technology transfer are access to the real know-how from the source companies (including access to trade secrets),

- UNEP-EPO www.epo.org/clean-energy-africa

ADMINISTRATION STRATEGY ON MITIGATING THE THEFT OF U.S. TRADE SECRETS- Executive Office of the President (2013)

- ‘We will continue to act vigorously to combat the theft of U.S. trade secrets that could be used by foreign companies or foreign governments to gain an unfair economic edge’.

Litigation: trade secrets

- AMSC v. Sinovel Wind Group Co., former customer and China's biggest wind turbine manufacturer

Breach of contract, copyright infringement, and theft of trade secrets: about US $1.2 billion in damages,

Conclusions

There is a need for ‘the development, diffusion and transfer of climate technologies on a massive scale’.

UNFCCC Executive Secretary, First meeting of the Technology Executive Committee, UNFCCC, Bonn, 1st September, 2011

- North-South asymmetry in R&D capacity and technology ownership
- IPRs, by its very nature, can be a barrier to technology transfer
- Absence of patent does not mean access to technology
- Obstacles generated by IPRs need to be addressed in climate change negotiations