

Diretti / Indiretti

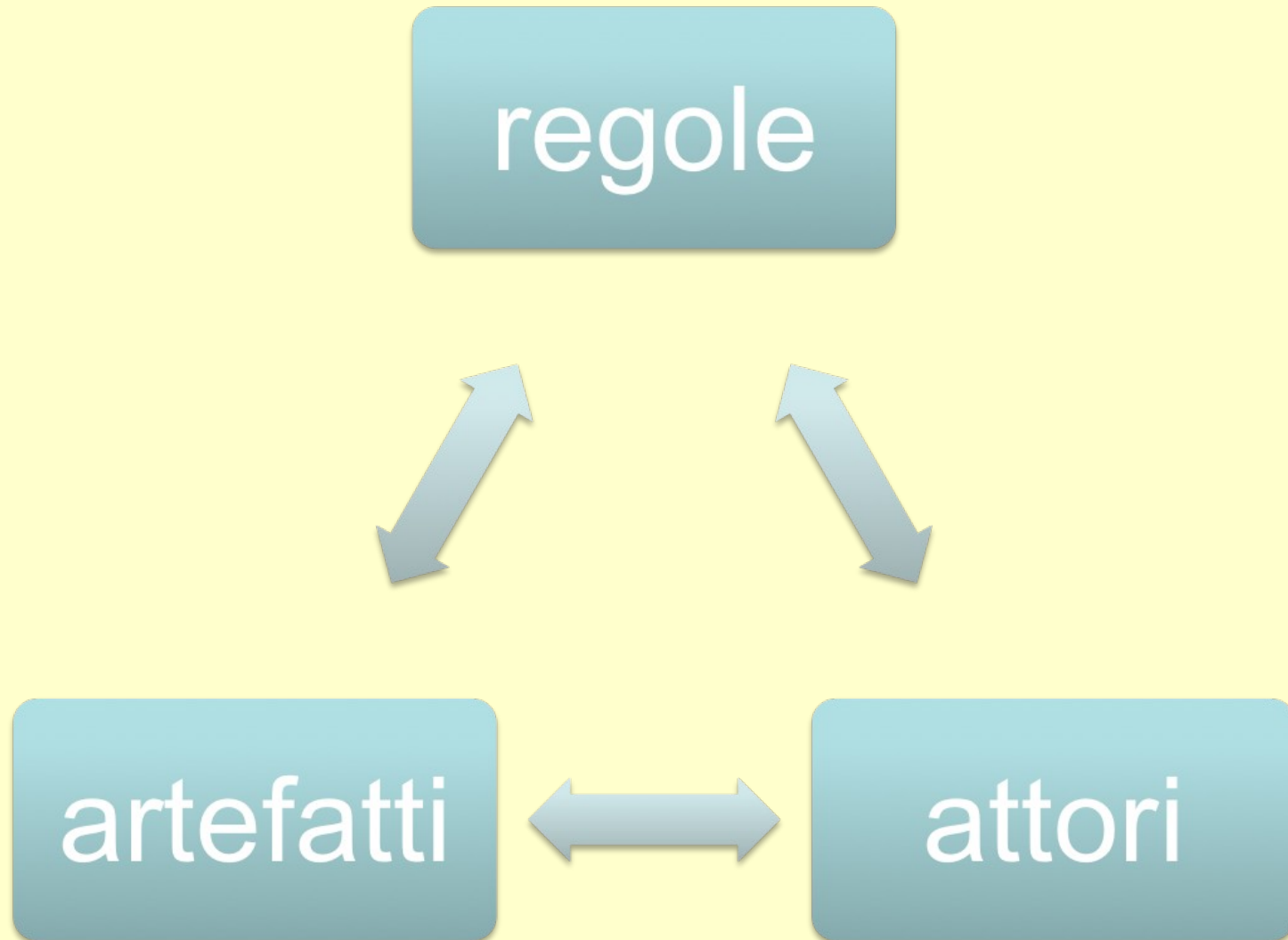
Diretti

- Rese
- Costi
- Redditi
- Occupazione
- Qualità del lavoro
- Danni da responsabilità

Indiretti

- Danni commerciali
- Danni etici (identità del prodotto)
- Ansia dei consumatori
- Effetti economici dei danni ambientali

Gli effetti sistemici



Esempi

- Le regole per prevenire la resistenza
- Le regole per la coesistenza
- Le regole di proprietà intellettuale
- Il bilanciamento dei poteri, la presenza di un solido spazio pubblico
- L'ecologia dell'informazione e della conoscenza



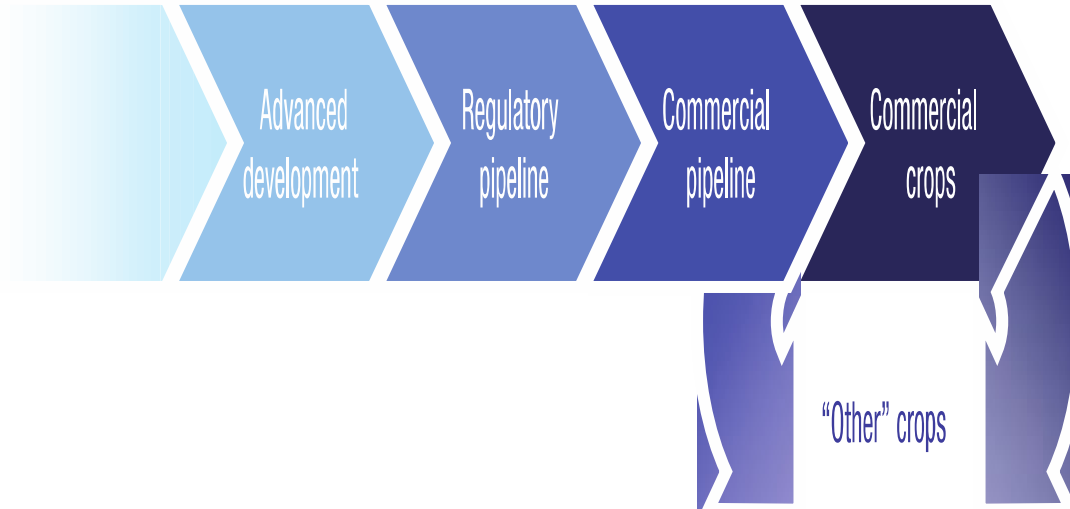


L'impatto sulla concentrazione economica

- Forti investimenti per produrre una varietà OGM: circa 100 milioni di \$ →
Necessità di recuperare gli investimenti con 'semi globali'
- Gli IP favoriscono la concentrazione
 - Costi pubblici, benefici privati
 - Alti costi legati alla regolamentazione



Figure 6: Categorisation of GM crops depending on their proximity to market





1) Time estimates are based on our experience; they can overlap. Total development time for any particular product may be shorter or longer than the time estimated here.

2) This is the estimated average probability that the traits will ultimately become commercial products, based on our experience. These probabilities may change over time. Copyright 2009 Monsanto Company.

Table 17: Events in commercial GM crops and in pipelines worldwide, by crop

| Crop | Commercial in 2008 | Commercial pipeline | Regulatory pipeline | Advanced development | Total by 2015* |
|------------------|---------------------------|----------------------------|----------------------------|-----------------------------|-----------------------|
| Soybeans | 1 | 2 | 4 | 10 | 17 |
| Maize | 9 | 3 | 5 | 7 | 24 |
| Rapeseed | 4 | 0 | 1 | 5 | 10 |
| Cotton | 12 | 1 | 5 | 9 | 27 |
| Rice | 0 | 1 | 4 | 10 | 15 |
| Potatoes | 0 | 0 | 3 | 5 | 8 |
| Other crops | 7 | 0 | 2 | 14 | 23 |
| All crops | 33 | 7 | 24 | 61 | 124 |

Notes: * The total number of GM crops by 2015 represents an upper limit, given that by then some of the current GM crops may have been phased out commercially or legally. However, traces of the events could still be found in commercial samples – and therefore represent a problem of LLP if they are not authorised. Source: Based on the overview tables in the Appendix.

World's Largest Seed Corporations

| Company | Seed Sales 2006 US\$ Millions | % Market Share |
|--|----------------------------------|-------------------|
| 1 Monsanto (USA) includes Delta & Pine Land | \$4446 | 19% |
| 2 DuPont (USA) | \$2781 | 12% |
| 3 Syngenta (Switzerland) | \$1743 | 8% |
| 4 Groupe Limagrain (France) | \$1035 | 5% |
| 5 Land O' Lakes (US) | \$756 | 3% |
| 6 KWS AG (Germany) | \$615 | 3% |
| 7 Bayer Crop Science (Germany) | \$430 | 2% |

Source: ETC Group. According to estimates provided by Context Network, the value of the global commercial seed market was \$22,900 million in 2006 (includes seeds purchased from public breeding programs). Note: Dow also holds interests in seeds, but is not ranked in the top 10.

MONSANTO



**NO FOOD
SHALL BE
GROWN
THAT WE
DON'T OWN**



Gli OGM nel presente sistema

- Accelerano la separazione tra produzione della conoscenza e utilizzo della conoscenza
- Favoriscono la concentrazione nel settore degli input
- Favoriscono l'agricoltura di larga scala
- Restringono i farmers' rights
- Incrementano i costi pubblici di monitoraggio e controllo



Assessment for Africa

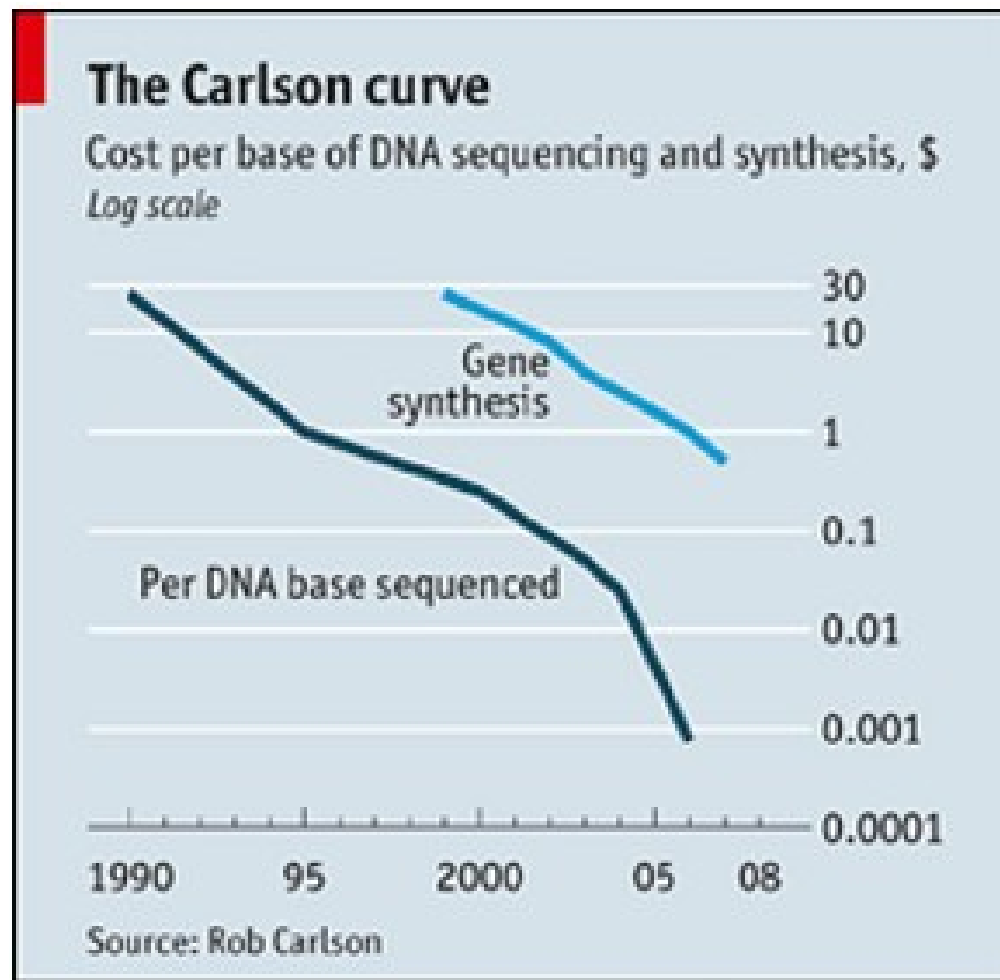
| | <i>Sweet Potatoes</i> | <i>Bt Cotton</i> | <i>Bt Corn</i> |
|------------------------------------|--|---|---|
| Demand-led | Low – driven by Monsanto, KARI & USAID | Low – commercial product for large farmers | Low – driven by KARI, CIMMYT & Syngenta Foundation |
| Site-specific | Low – one unpopular variety | Moderate | Not currently available |
| Poverty-focused | Low | Low – limited gains; harmful indirect affects | Low |
| Cost-effective | Low – unproven effectiveness; high opportunity costs | Ambiguous – costs borne by company; gains for poor farmers unclear; negative for rural poor | Low – limited effectiveness; high opportunity costs |
| Environmentally-sustainable | Low to moderate | Ambiguous – reduces pesticides, but avoids IPM | Low, possibly higher if gene stacking works, depending on adoption and refuge |
| Institutionally sustainable | Low – high-donor funding; some institutional capacity building | Low – little to no local capacity building; foreign control | Low – high donor funding; some capacity building |



Quali scenari?



La caduta dei costi delle biotecnologie





La biologia molecolare

- Drastica diminuzione dei costi della ricerca
- Possibilità di integrare tra loro discipline un tempo separate
- Molteplicità di applicazioni
 - Marker assisted selection
 - OGM
 - Biologia dei sistemi
 - Synthetic biology





La convergenza tra discipline

- Piattaforme fenotipiche: diagnostica per immagini + mappe cromosomiche + precisa definizione dell'ambiente
- Analisi in parallelo di piccole molecole
- Modelli di simulazione

