GBRCN - AN INFRASTRUCTURE TO PROVIDE THE DRIVE FOR INNOVATION

D. Fritze, Session 11 From Culture Collections to Biological Resource Centres, ICCC-12, Florianopolis, Brazil

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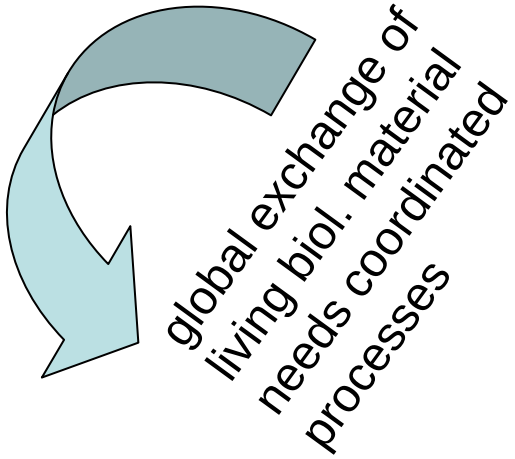
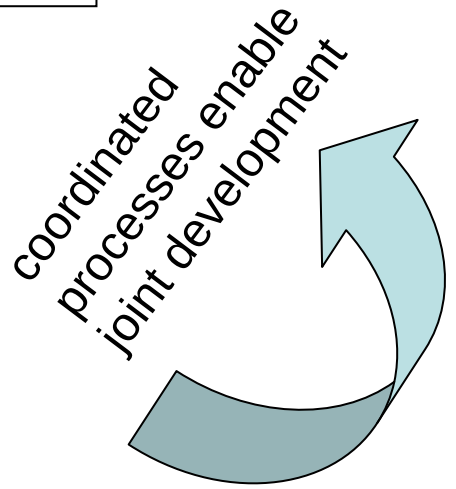
WHY DO WE NEED A GBRCN ?



The necessary **increase in cooperative research and joint development** based on living biological material

triggers and demands

increased global exchange of living biological material



increased coordinated/ harmonised processes for

- **safety** (im-, export, transport, who is entitled to work with which material)
- **security** (unauthorized access to material and data)
- **legitimacy** (meeting the requirements of CBD)
- **quality** of material + data (comparability under QM aspects)
- **stability, purity, authenticity, performance** of the material (comparability under scientific and systematic aspects)

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HARNESSING THE LATENT VALUE OF BIODIVERSITY

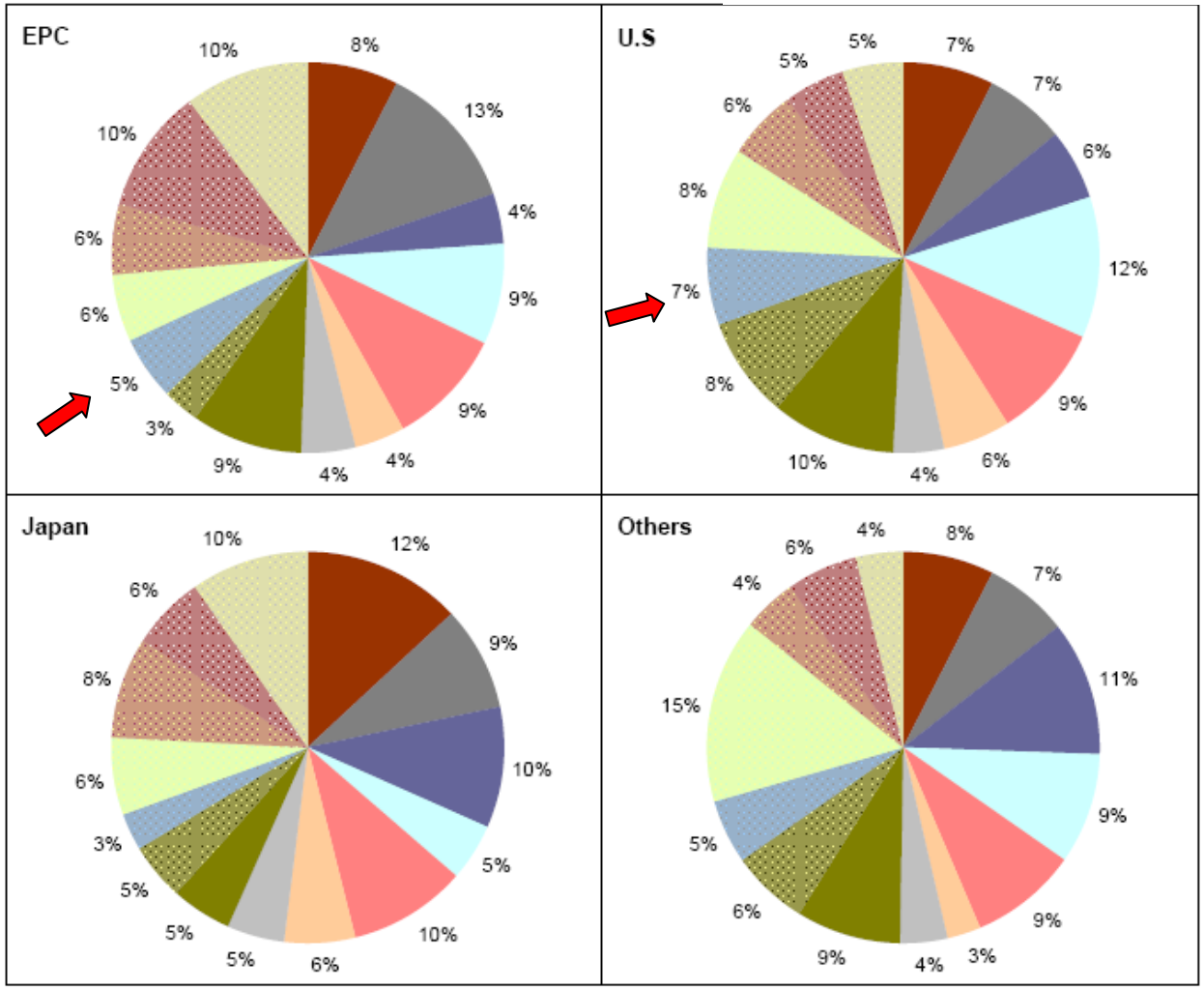
- Biological resources, such as microorganisms and their derivatives, are the essential raw material for the advancement of biotechnology

However, scientific progress and the resulting growth of the knowledge-based bioeconomy will depend from

- the facilitated and safe access to *ex-situ* held living biological material
- adequate and comparable quality world-wide
- and will require coordinated policy actions put in place by governments

2008 patent applications per origin and technologies

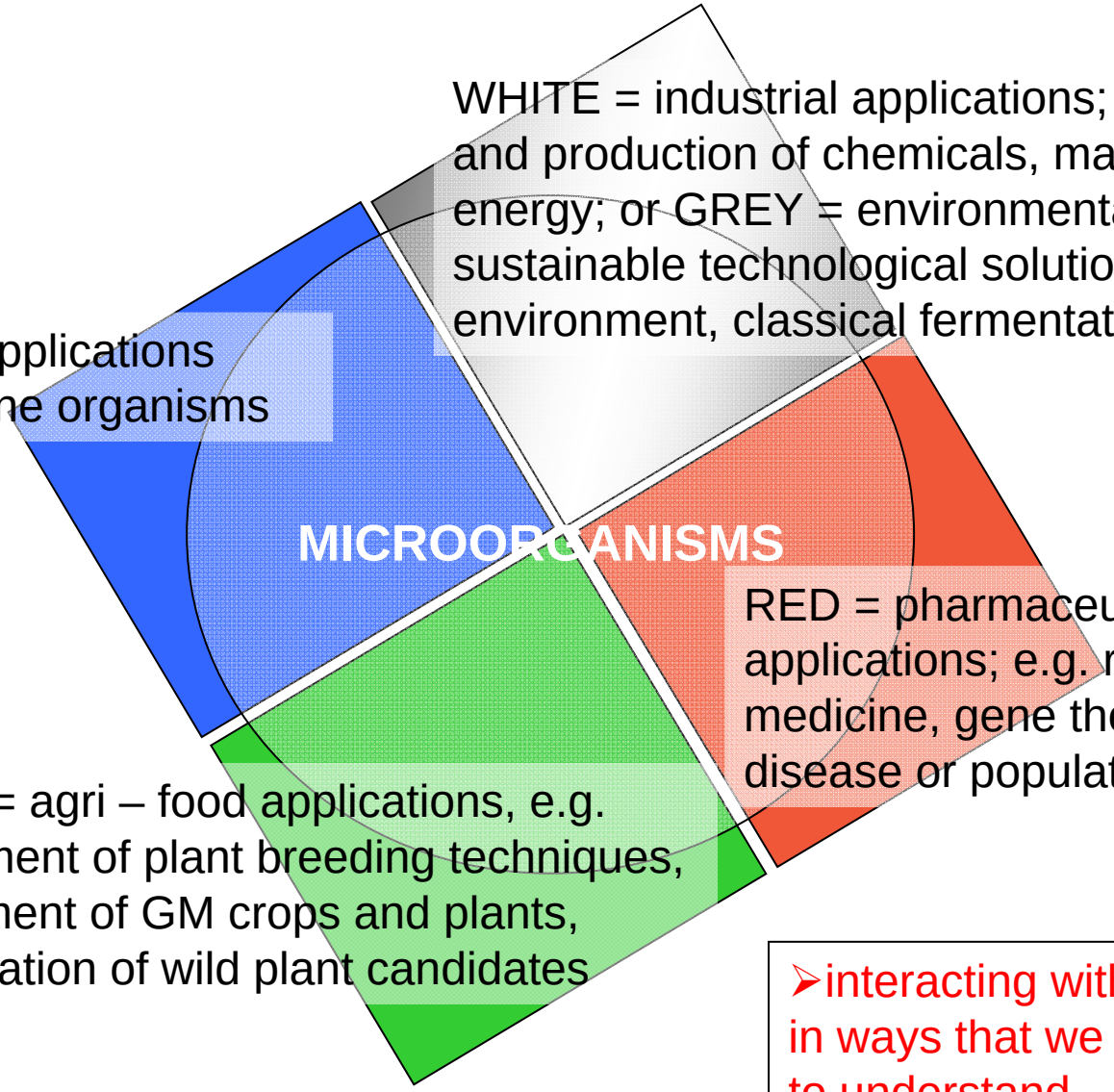
http://www.epo.org/topics/issues/biotechnology.html



- Electricity and semi-conductors
- Handling and processing
- Audio, vdeo, media
- Human necessities
- Industrial chemistry
- Poylmers
- Electronics
- Pure and applied organic chemistry
- Computers
- Biotechnology
- Telecommunications
- Measuring and optics
- Civil engineering and thermodynamics
- Vehicles and general technology

Biotechnology Patents rank among the ten largest technical fields in term of patent applications with the EPO; 8th place in USA

MICROORGANISMS CONSTITUTE A RICH INNOVATIVE SOURCE FOR BIOTECHNOLOGY



WHITE = industrial applications; processing and production of chemicals, materials, energy; or GREY = environmental applications; sustainable technological solutions to protect environment, classical fermentations

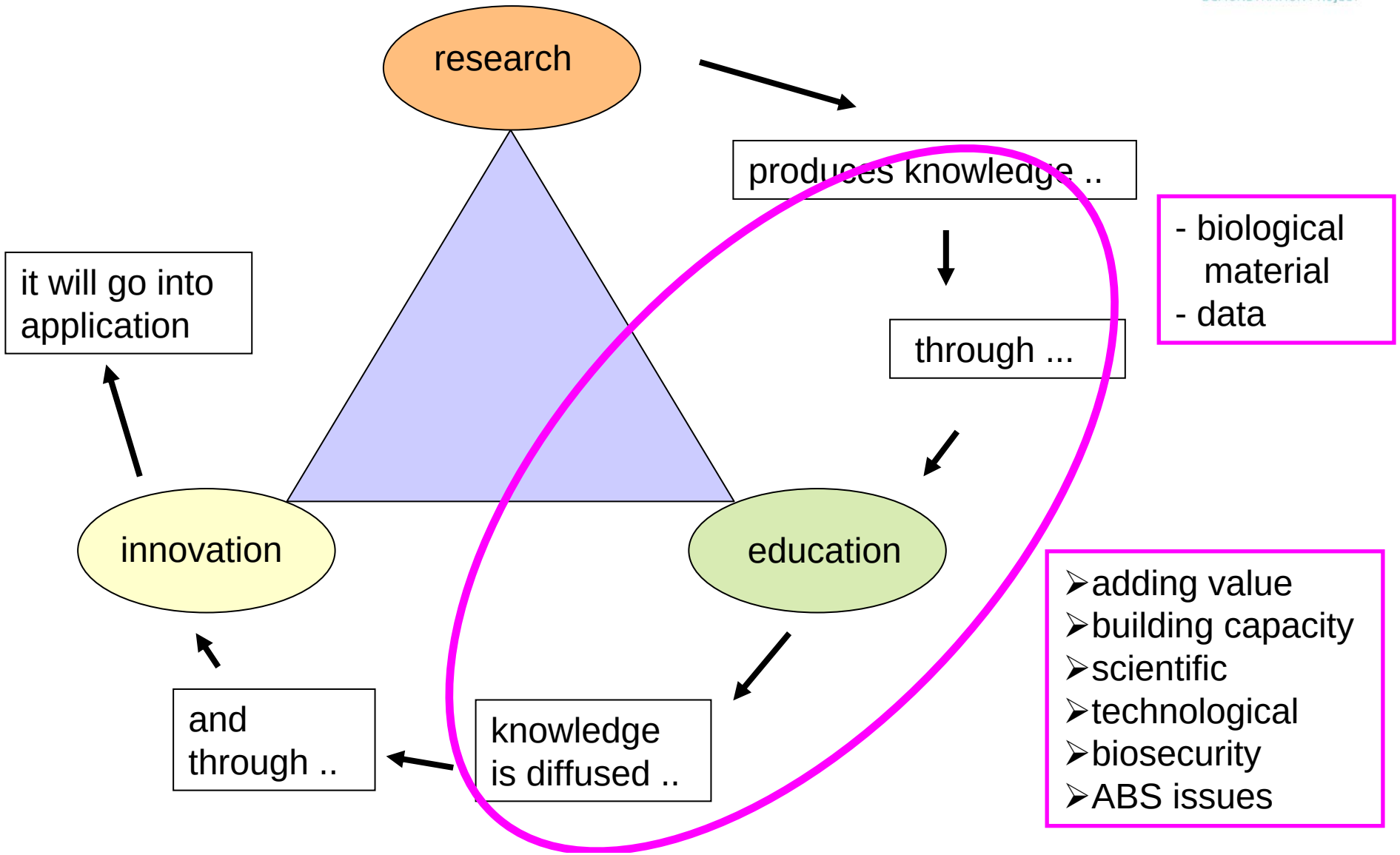
BLUE = applications from marine organisms

RED = pharmaceutical, medical applications; e.g. regenerative medicine, gene therapy, new drugs; disease or population driven

GREEN = agri – food applications, e.g. improvement of plant breeding techniques, development of GM crops and plants, domestication of wild plant candidates

➢interacting with other living forms in ways that we are only beginning to understand

ESFRI ARE DESCRIBING THE **KNOWLEDGE TRIANGLE** OF RESEARCH, EDUCATION AND INNOVATION



PAN-EUROPEAN RESEARCH INFRASTRUCTURES BRING A NEW DIMENSION INTO LIFE SCIENCES RESEARCH

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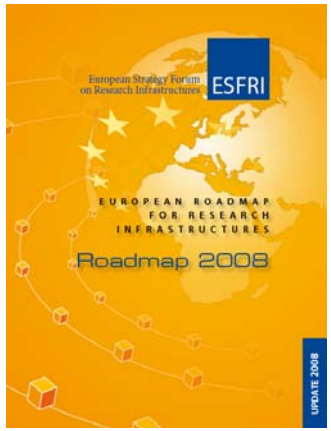
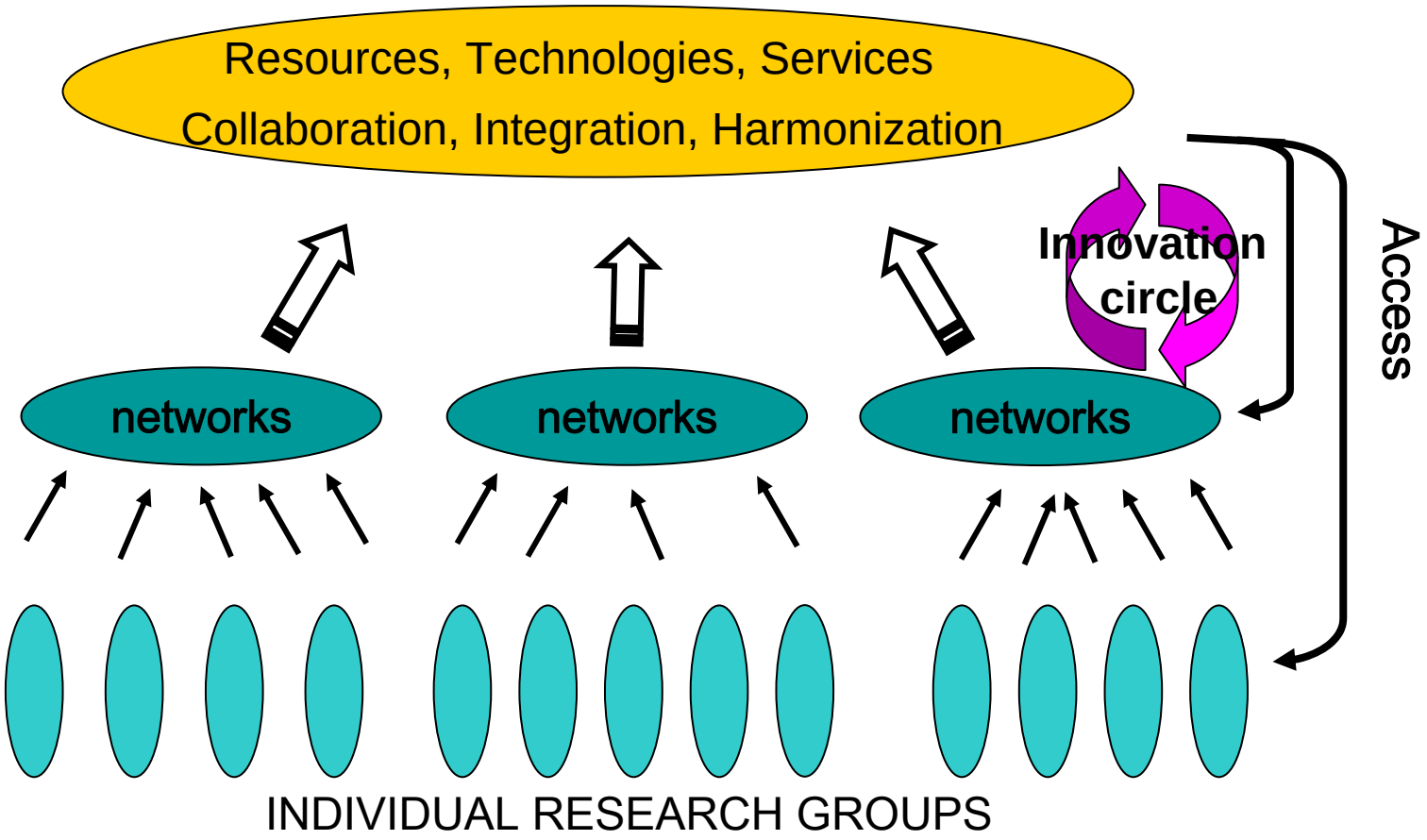
GLOBAL BIOLOGICAL RESOURCE CENTRE NETWORK
DEMONSTRATION PROJECT





INNOVATION IMPETUS OF THE GBRCN PLATFORM

(1) for academic and industrial users

(2) for governments

(3) collections

(1) Through the GBRCN Platform advantages can be harnessed **for academic and industrial users**:

- find solution to replace the one-to-one bilateral agreements to (more) generally applicable agreements
- opening better access to ex-situ material
- gaining better understanding to access in-situ material through innovative isolation and cultivation techniques
- opening better access to biodiversity data through global interoperability

INNOVATION IMPETUS OF THE GBRCN PLATFORM

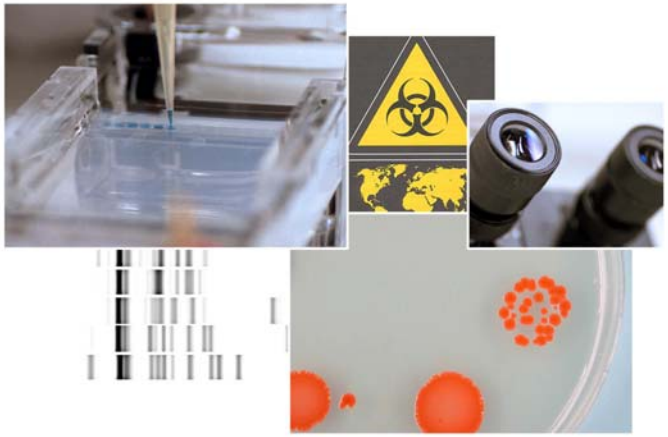
(2) Through the GBRCN platform innovative support can be provided **for governments:**

- to help to fulfil their responsibilities in global challenges such as biosecurity and ABS
- to help to avoid waste of time and resources by building up global cooperation, to enable consultations and joint plannings – helping to avoid unnecessary duplication
- to help them implement the OECD BP Guidelines, which is an expectation of OECD
- as a broker to foster national, regional and global research in biodiversity

INNOVATION IMPETUS OF THE GBRCN PLATFORM

(3) Through the GBRCN Platform an innovation drive can be implemented **for collections** to improve:

- their scientific, taxonomic and technical abilities
- material deposit and material supply
- acquisition and provision of data
- authentication and identification of material
- react to political challenges, e.g. biosecurity
- their ability to add value to the material



INNOVATIVE INFORMATION RESOURCE FOR MINING AND FURTHER INTERPRETATION

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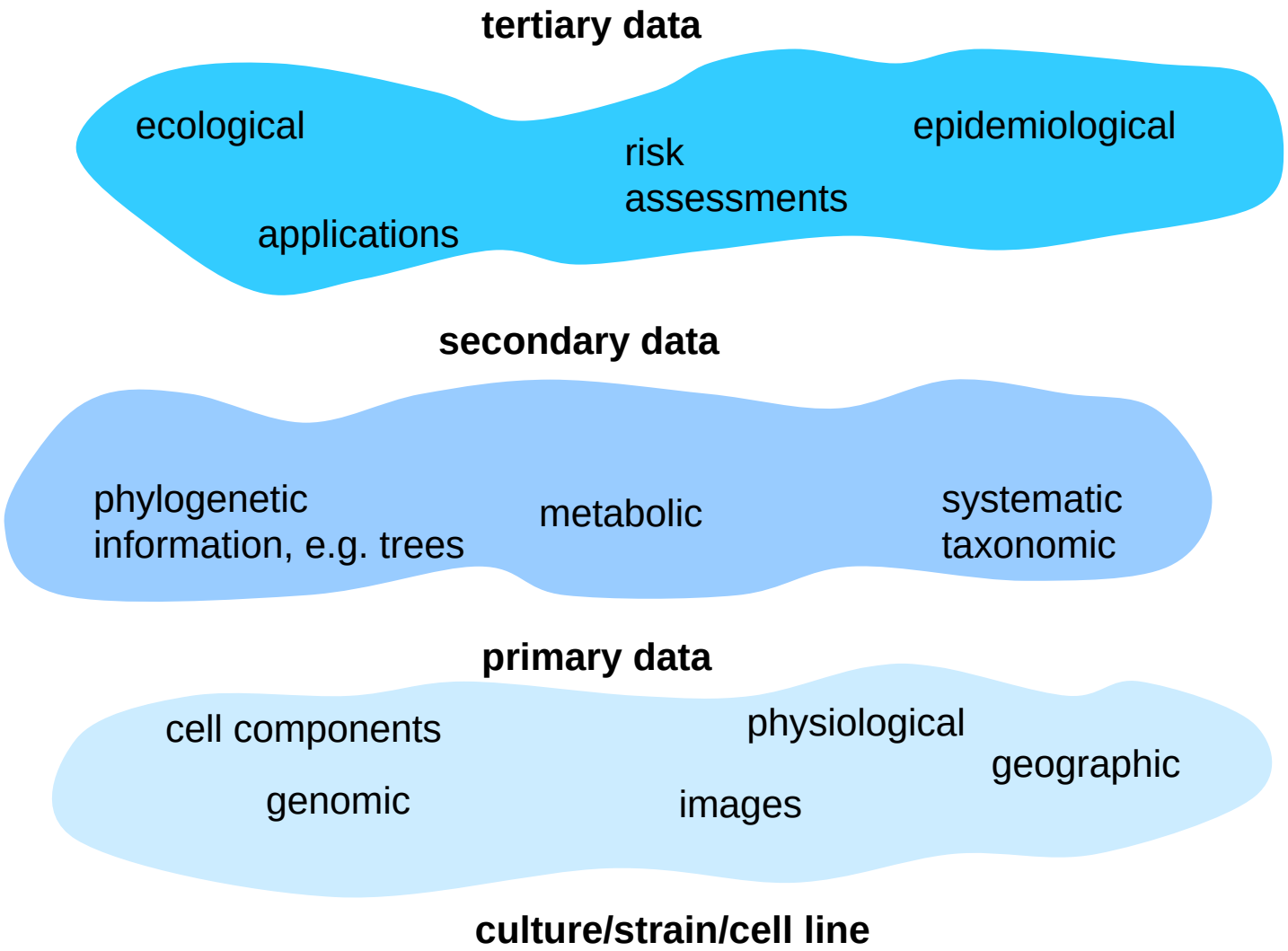

< provide tools for mining and interpretation

< provide curated raw data

DYNAMIC LINKAGE OF DATA AS SCIENCE PROGESSES - MOUNTAINEOUS LANDSCAPES OF INFORMATION

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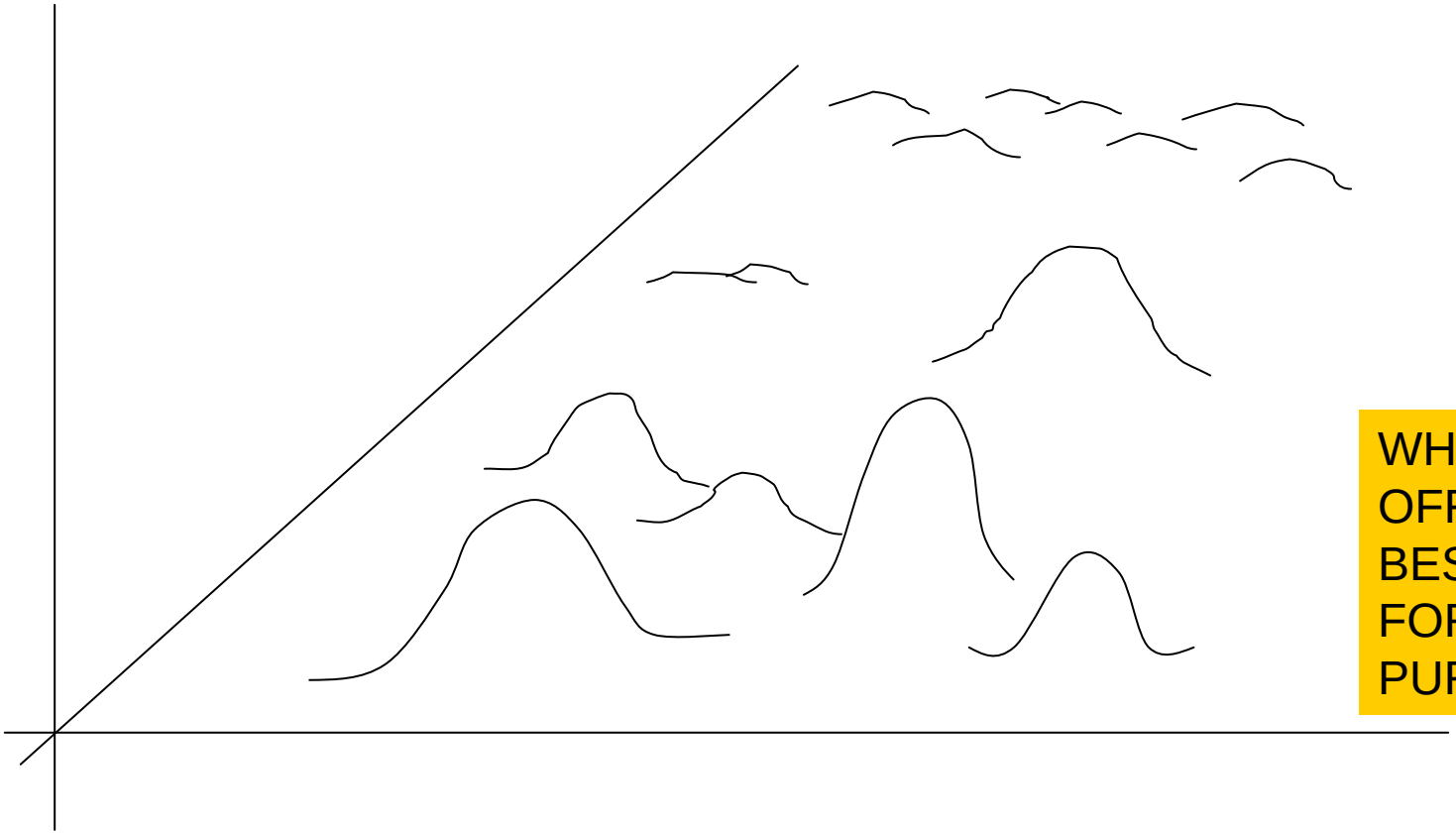

WHICH PEAK OFFERS THE BEST VIEW FOR MY PURPOSE?

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mum
Micoteca da Universidade do Minho

crla

NBRC

MAKERERE
UNIVERSITY

CCFC

THANK YOU !

JKUAT

CBS

IMCAS

VTT

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