



Open and Responsible DSI Data Governance and Addressing IP&LC Concerns: Not If but How

1/22/2024 Sofa



IIFB WGDSI

- ▶ **Why data governance?**
- ▶ **Most CBD discussions focus on beneficial uses: species identification, population management, phylogenetic analysis, etc.**
- ▶ **DSI databases have much wider uses**
 - ▶ **More diverse uses with some potential risks of misuse, exploitation**
 - ▶ **Regulatory oversight, data governance and ethical principles already exist for genetic sequencing**
 - ▶ **EU Horizon 2020: Data should be open as possible and closed as necessary (e.g. to protect privacy and other rights): open access does not mean free and unfettered use**
 - ▶ **Rules not a barrier: Promote trust, provide transparency, reduce conflicts and increase participation**



IIFB WGDSI – Governance issues related to AI

- ▶ DSI increasingly tied to AI
- ▶ Raises issues of participation in data governance issues
- ▶ DSI delinks abstract representation of genetic information from its physical manifestation
- ▶ AI can further delink the genetic information by extracting patterns and rules and generating sequences and products in silico
- ▶ EU, EC and EP: Adopted provisional rules on AI in the EU Artificial Intelligence Act (2023)
Many countries following suit
- ▶ Data governance of biodiversity related DSI therefore fulfills societal interests in providing oversight and safeguards without significant interference with research.



IIFB WGDSI – IP & LC rights

- ▶ IP & LC cultural rights, human rights and other rights
- ▶ UNDRIP Article 31: IPs have the right to maintain, control, protect and develop their traditional knowledge and manifestations of their genetic resources, and states have obligations to address these in conjunction with Indigenous Peoples
- ▶ Nagoya Protocol (NP) Article 6(2): affirms IP & LC rights to GRs when they have recognized rights to grant access.
- ▶ Many states w/ABS laws that must be respected
- ▶ CBD: Article 8(j): IPs and LCs have the right to grant or withhold permission to access TK



IIFB WGDSI – Safeguards prior to DSI database deposit

- ▶ **Minimum standard:**
- ▶ **IPs & LCs must have rights to GRs obtained from their lands**
- ▶ **Access to initial GRs requires PIC/FPIC/AI**
- ▶ **If bilateral contract is silent on DSI deposit in public DB, new PIC/FPIC/AI required**
- ▶ **Traditional knowledge/Indigenous knowledge: Always requires PIC/FPIC/AI**



IIFB WGDSI – Post-deposit DSI governance

- ▶ **GMBSM will be a voluntary(ish) regime, not a binding treaty or protocol**
- ▶ **Potential to go beyond the standards of the CBD and Nagoya Protocol**
- ▶ **For example, could revisit ex situ collections-sourced DSI and contact IPs or LCs even if collected before 1993 or 2014 (CBD and NP entry into force)**
- ▶ **Does not have to take a formal legal territorial approach: can work with IPs and LCs for culturally significant species even if collected off their lands**
- ▶ **IPs, LCs, database operators and users can work together to come up with mutually agreed open and responsible data governance (ORDG)**



IIFB WGDSI – Flexibility in data governance

- ▶ **Challenges with some emerging technologies**
- ▶ **Environmental DNA (eDNA): can be sampled from waters and air flowing from IP & LC lands**
- ▶ **“Henrietta Lacks” problem of waste: e.g. example of toxic waste site from industry operating on tribal lands: removed toxic soils but then started sequencing microorganisms**
- ▶ **Use of TK: CBD and NP model was of companies searching single species genomes**
 - ▶ **Species targeted using detailed TK, sequencing done in-house on single species**
 - ▶ **IndigiFoodDB: not DSI. But analyzed 100+ spp. from lists of Indigenous foods, want to expand to all 50 states in the US**



IIFB WGDSI – Flexibility in data governance

- ▶ **Genetic resources: samples of hereditary material owned/controlled by providers**
- ▶ **DSI drops down to the level of the sequence where ownership, control become complex**
- ▶ **Most genes / sequences are distributed widely geographically with a species and between species due to phylogeny and dispersal**
- ▶ **Local mutations and highly endemic species occur, and there is still significant value in small mutations**



IIFB WGDSI – Flexibility in data governance

- ▶ **Issues of scale: The distribution of novel genes and sequences affected by scale.**
 - ▶ Conservation work often at larger scales (plants, trees, small to large animals) that tend to be mobile or disperse their genes widely
 - ▶ Researchers often use microbes/microbiomes: Though spread widely, much scope for local adaptation (e.g.: soil example above)
 - ▶ IPs and LCs responsible for actively selecting and maintaining, modifying environments (embodied TK) or hosting endemics
- ▶ **Issues of subject matter:**
- ▶ **FAO: novel genes and sequences actively selected and maintained by IPs & LCs**
- ▶ **Dealing with post-hoc discovery of novel genes and sequences traceable to IPs and LCs**



IIFB WGDSI – IP & LC Cosmovisions and Worldviews

- ▶ **CBD distinguishes physical genetic material from representation as symbolic information**
- ▶ **Many Indigenous Peoples do not make this kind of distinction**
 - ▶ **Lineage, genealogy, connection and relation are core concepts for many**
 - ▶ **Data, knowledge, information and the material are not necessarily clearly separated**
 - ▶ **Links may occur through many levels of their cosmos and the sacred seeds of life and kinship of all living beings: genetic sequences can be part of a lineage and considered sacred**
- ▶ **IPs once occupied much larger land bases historically and connected to species more widely**
- ▶ **They still maintain obligations and links to species in their ancestral territories and domains**



IIFB WGDSI – IP & LC Cosmovisions and Worldviews

- ▶ **UNDRIP Article 25 affirms that:**
- ▶ **Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.**
- ▶ **Akwé: Kon Voluntary guidelines for the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities: voluntary guidelines that complement UNDRIP Article 25.**



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- ▶ **Equity, ethical guidelines and moral rights: Can move process beyond minimum legal standards (e.g.: The development of CSR and ESG standards as a voluntary regime)**
- ▶ **FAIR and CARE Principles: In the preamble of decision 15/9**
- ▶ **May need some modification to fit CBD and wild biodiversity context**
 - ▶ **FAIR: Issue of reusable data and binding third parties to and guidelines/protocols/licenses**
- ▶ **CARE: issue of control over data: need to explore a range of contexts in which GRs are accessed and scenarios as outlined above**
 - ▶ **Not easily separated into division of on territory yours / off territory mine**



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- ▶ **Need principles of data stewardship grounded in ethics, engagement, and sustainability**
- ▶ **Biocultural Labels provide cultural metadata that are not proprietary**
- ▶ **Provide information that can be linked through field-level interoperability to existing databases**
- ▶ **Not arguing for fine-level PIC/FPIC/AI or MAT for samples**
- ▶ **Need to be consulted and involved in developing ORDG**
- ▶ **Process time**



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- **59. How the multilateral mechanism will operate in a way that respects the rights of indigenous peoples and local communities over their traditional knowledge, traditional knowledge associated with genetic resources and genetic resources;**
- **Principle of beneficence: Do no harm, ensuring societal, social and cultural safety and security**
- **Principle of respect for rights including the collective rights of Indigenous Peoples**
- **Principle of conflict resolution (remedy for harm or violation of rights)**
- **Principle of consultation, and PIC/FPIC/AI**
- **Principle of equity of relationship**
- **Principle of full and effective participation**
- **Principle of transparency and accountability**
- **Principle of safeguards**
- **Implementation of principles through capacity building – two-way learning, mutual learning**
- **Principle of capacity building – two-way learning, mutual learning**