



INTRODUCTION

The Periodic Table of Food Initiative (PTFI)® is a global effort to comprehensively characterize the world's food supply by providing standardized tools, data, and training to a global ecosystem of partners. PTFI tools enable detailed assessments of food quality, integrating molecular composition with environmental, agricultural, cultural, and health-related contexts. The initiative aims to empower stakeholders, from farmers to policymakers, to make more informed decisions that support healthy diets from sustainable food systems.

The Gap: Food is one of the greatest determinants of human and planetary health, yet we lack comprehensive knowledge of what is in food.

The Goal: Enable a global ecosystem of food systems leaders to map the world's edible biodiversity in a standardized format, ensuring that the information is accessible and valuable for decision-makers from diverse domains. When data derived

from Indigenous Peoples and Traditional Knowledge Holders is identified as culturally sensitive or not to be disclosed, the PTFI® follows an “open as possible, closed as necessary” approach by engaging communities to implement appropriate non-disclosure provisions, ensuring compliance with the FAIR Principles and recognizing data provenance and permissions across the entire data lifecycle.

Promoting Ethical and Legal Data Stewardship through Access and Benefit Sharing (ABS): Central to the PTFI's mission is a commitment to support ethical and legal data stewardship, in addition to the equitable sharing of benefits from the utilization of Digital Sequence Information (DSI) derived from genetic resources and associated traditional knowledge. This commitment aligns with international agreements such as the Nagoya Protocol¹ and DSI instruments under the Convention on Biological Diversity (CBD)².

BACKGROUND ON ABS AND ITS IMPORTANCE

The concept of ABS emerged from the recognition that countries, Indigenous Peoples, and Local Communities possess sovereign rights over their genetic resources and associated traditional knowledge. Historically, these resources were often utilized without consent or compensation, leading to unconsented and unbalanced use, extraction, and exploitation. The Nagoya Protocol and other international access and benefit-sharing instruments (i.e., International Treaty on Plant Genetic Resources for Food and Agriculture)³ were established under the framework of the CBD to address these challenges by providing a transparent legal framework that ensures:

- **Access Obligations:** Establishing clear, fair, and non-arbitrary rules and procedures for accessing genetic resources, including requirements for Free Prior Informed Consent (FPIC)⁴ from provider countries and communities.
- **Benefit-sharing Obligations:** Ensuring that benefits – monetary or non-monetary – arising from the utilization of genetic resources are shared in a fair and equitable manner with the providers, based on mutually agreed terms (MAT). For example, MAT could specify that a local community providing access to a plant used in pharmaceutical research will receive a share of profits or co-authorship in publications.
- **Compliance Obligations:** Mandating Parties to take measures to monitor and enforce compliance with ABS requirements, ensuring that genetic resources are utilized legally and ethically.
- **Multilateral Mechanism for DSI:** Recognizing that any benefits from DSI use should be shared fairly and equitably through a multilateral mechanism that is currently under development. In the meantime, the PTFI[®] has been constantly monitoring outcomes from COP16 and aims to align with and support emerging benefit-sharing mechanisms.

ABS for Digital Sequence Information (DSI): DSI can refer to data derived from the sequencing and digital analysis of genetic resources, including DNA, RNA, amino acid sequences, other small molecules or metabolites, and associated metadata.⁴ It accelerates research and innovation for food and agriculture, human health, and biodiversity conservation. However, since digital data can be easily shared across borders and is often used in the aggregate, users may bypass the traditional ABS agreements used for physical genetic resources. The PTFI[®] reinforces ethical and diligent data use, ensuring that the collection, storage, and dissemination of DSI adhere to ABS principles. This includes obtaining appropriate prior informed consent from genetic resource providers when foods originate in communities, establishing clear terms for data use, and ensuring that benefits derived from the use of DSI are equitably shared with the originating countries and communities.



KEY OBJECTIVES OF ABS IN THE PTFI[®]

By integrating ABS principles into its operations, the PTFI[®] supports scientific innovation with ethical standards and data governance based on FAIR (Findable, Accessible, Interoperable, and Reusable) data principles. The PTFI[®] ensures that DSI and associated traditional knowledge are handled according to the owner's rights and provisions and that the benefits derived from the use of food composition data are shared fairly and equitably.



PROMOTE EQUITY

Ensure fair and equitable distribution of benefits derived from the use of DSI from genetic resources for food and agriculture.



ENCOURAGE COMPLIANCE

Support compliance with national and international ABS laws and standards.



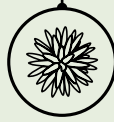
CAPACITY STRENGTHENING

Guarantee appropriate involvement of Indigenous Peoples and Local Communities in research, development, knowledge sharing, and capabilities transfer – in particular, to allow for enhanced understanding of their food systems. Acknowledge their sovereignty and crucial role in biodiversity management.



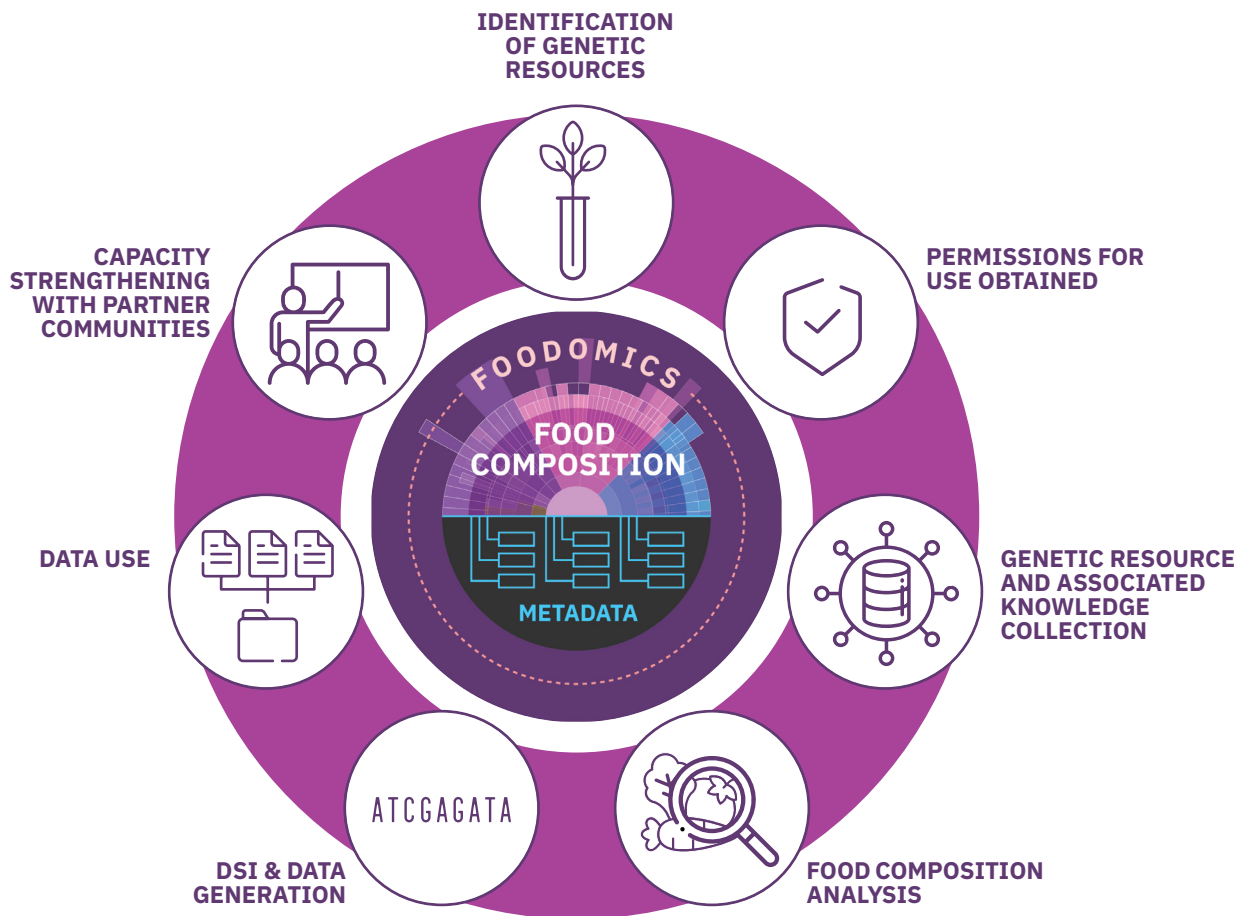
FOSTER COLLABORATION

Enhance transparency and trust among researchers, governments, and Indigenous Peoples and Local Communities.



PROVIDE MODELS FOR ADVANCING COP16 OUTCOMES

Integrate the resolution on DSI adopted at COP16 into how the PTFI[®] communicates ABS obligations to data contributors and users, given that the PTFI[®] is a database that provides public and free access to data.



ETHICAL & LEGAL REQUIREMENTS FOR PARTNER LABS

To ensure the responsible and lawful contribution of data and materials to the PTFI®, partner laboratories must comply with a set of ethical and legal requirements. These obligations are designed to uphold international and national regulations, protect the rights of individuals and communities involved, and ensure transparency in benefit-sharing when relevant. The forms listed below support compliance by offering templates, guidance, and documentation protocols at each step of the pipeline.

- **PTFI principles for compliance with ethical and legal permissions for data contributions:** Provides guidance for data contributors to the PTFI database on regulatory compliance, food procurement principles, required agreements, and ABS data sharing levels.
- **ABS compliance form:** Explains the PTFI® and includes a Data Contributor Declaration to ensure that all data uploaded complies with ABS and FPIC.
- **Metadata collection notice:** Describes the comprehensive PTFI Core metadata associated with food specimens and biospecimens.

- **Free Informed Prior Consent (FPIC) for sample contribution:** Form for researchers working with communities who may contribute food samples to the PTFI®, outlining research purposes, data sharing options, voluntary participation, and potential benefits. This template is project-specific and doesn't necessarily fulfill the requirements to obtain FPIC with the respective ABS authorities.
- **Material Transfer Agreement – MAT:** Template agreement that governs the exchange of food samples between research organizations in the PTFI®, ensuring compliance with ABS frameworks and international treaties. This template is project-specific and doesn't necessarily fulfill the requirements to obtain MAT with the respective ABS authorities.

With this legal and ethical bundle, the PTFI collaborators contributing data enable an internal data curation process whereby an ABS status is assigned to each food sample based on metadata such as species, country of production, country of origin, and compliance with international frameworks and treaties.



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SECRETARIAT



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www.rockefellerfoundation.org

Visit the PTFI website:

www.foodperiodictable.org

The Alliance of Bioversity International and CIAT is part of CGIAR, a global research partnership for a food-secure future.

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