GGBN – Strategies for standardized exchange of genetic resources on a global scale

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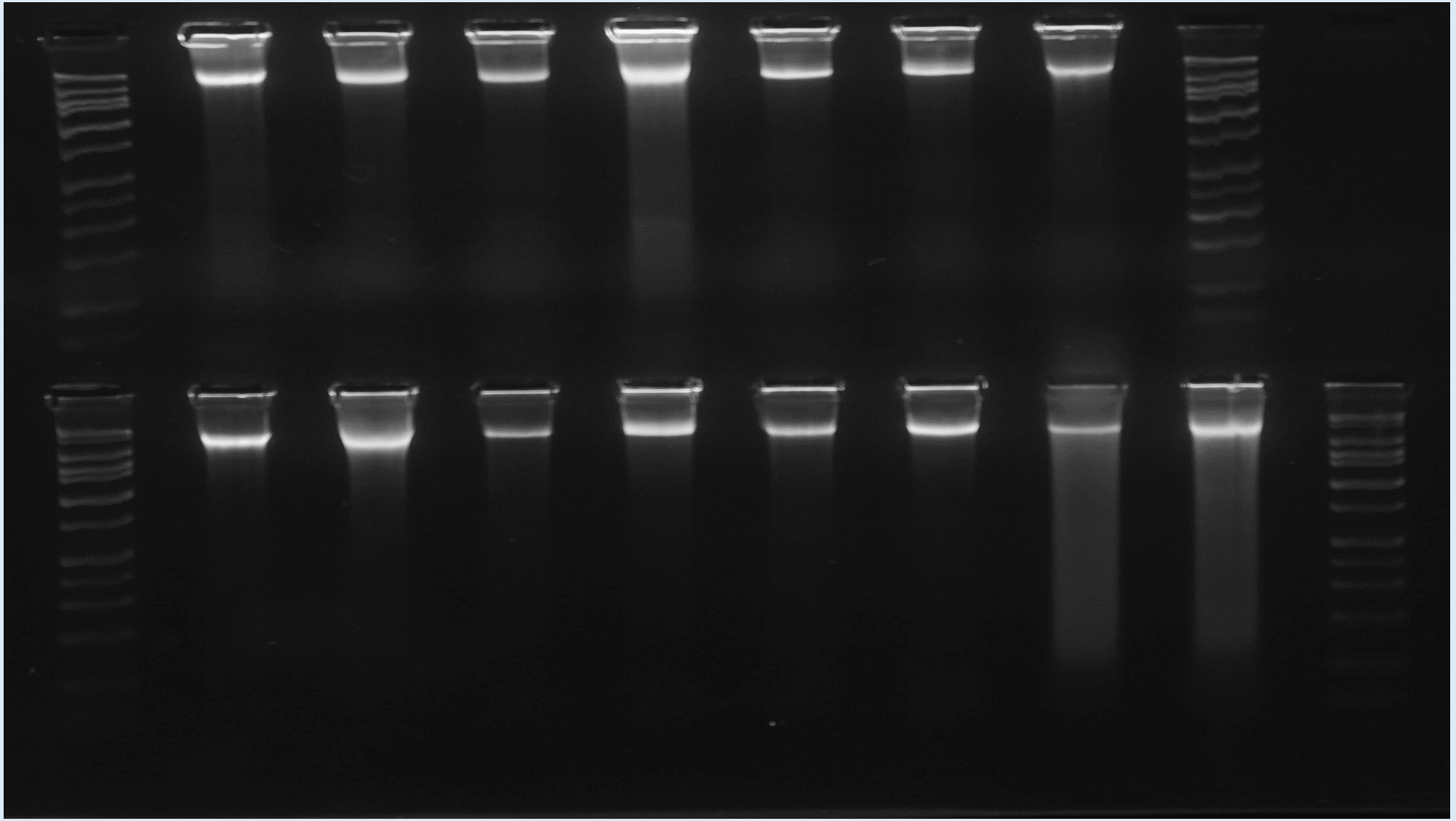
Global Genome Biodiversity Network

- **Network for non-human biobanks** (e.g. DNA, tissue), founded in 2011
- Based onDNA Bank Network, 2007
- General secretariat: Smithsonian Institution
- Technical secretariat: Botanic Garden and Botanical Museum Berlin
- http://www.ggbn.org

High Molecular Weight DNA



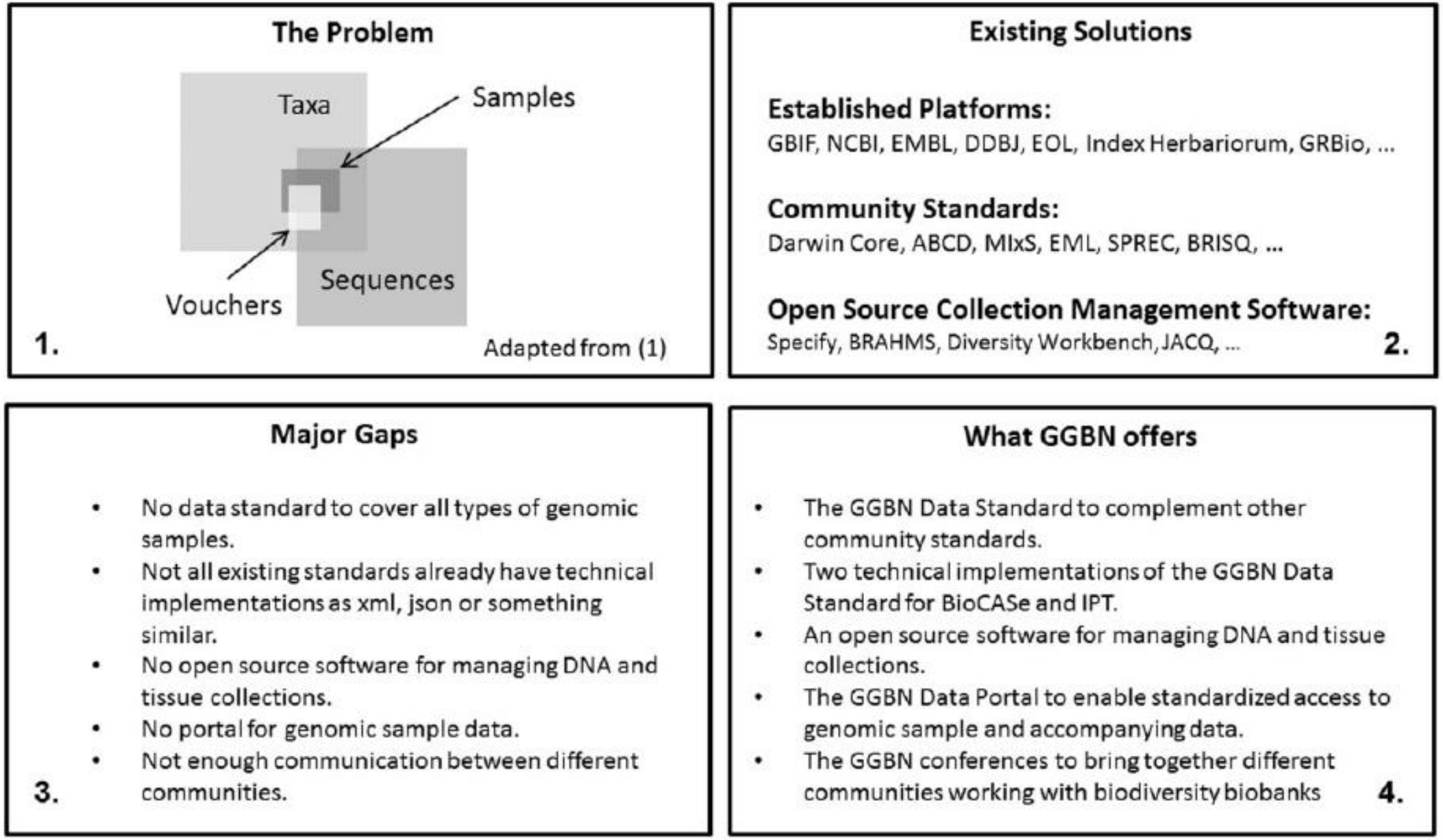


Figure 1. Bridging the gaps. Schematic representation of (1) Low percentage of available sequence data in public repositories with proper information where the voucher and/or sample is deposited. (2) Existing tools and platforms for standardized management and access to biodiversity data. (3) Major gaps identified by GGBN and (4) what GGBN has developed to fill these gaps.

GGBN Data Standard

GGBN Wiki

GGBN Data Standard v1

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This page describes the GGBN Data Standard version 1 (v1), released on 04. October 2016.

Citation: Droege et al. (2016): The Global Genome Biodiversity Network (GGBN) Standard Specification. DATABASE. doi: 10.1093/database/baw125

Note: Ongoing discussions and updates of the GGBN Data Standard will be documented at http://terms.tdwg.org/GGBN_Data_Standard

The GGBN Data Standard is intended to be used with ABCD or Darwin Core and is not a stand-alone solution! Implementations are available for both ABCD and DarwinCore-Archive. For ABCD two implementations have been made. One for single species samples ABCDGGBN and one for environmental samples ABCDGGBN-Enviro. Please check out the TDWG wiki for updates.

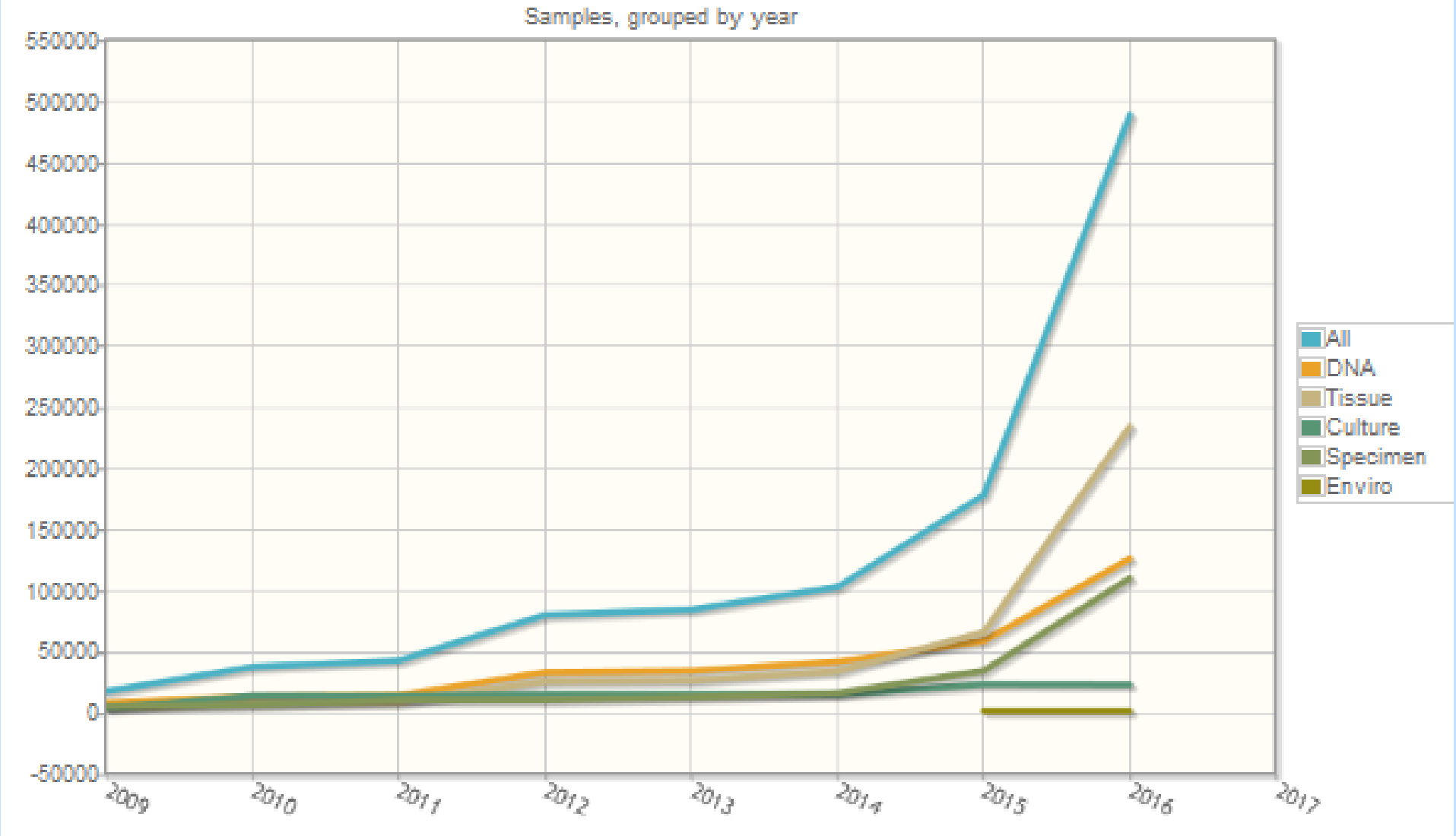
A new stable version of the standard will be released earliest at the end of 2019.

The GGBN Data Standard is a set of terms and controlled vocabularies designed to represent sample facts. It does not cover e.g., scientific name, geography, or physiological facts. This allows combining the GGBN Data Standard with other complementary standards, such as DwC, ABCD or MIxS. Potentially, the standard can be used not only for non-human genomic samples but also human samples. It builds upon existing standards commonly used within the communities extending them with the capability to exchange data on tissue, environmental and DNA sample as well as sequences. The GGBN Data Standard incorporates all molecular terms of MIxS, and

50 members, 22 countries: 518,000 samples, 2200 families, 11,000 genera, 32,000 species

GGBN

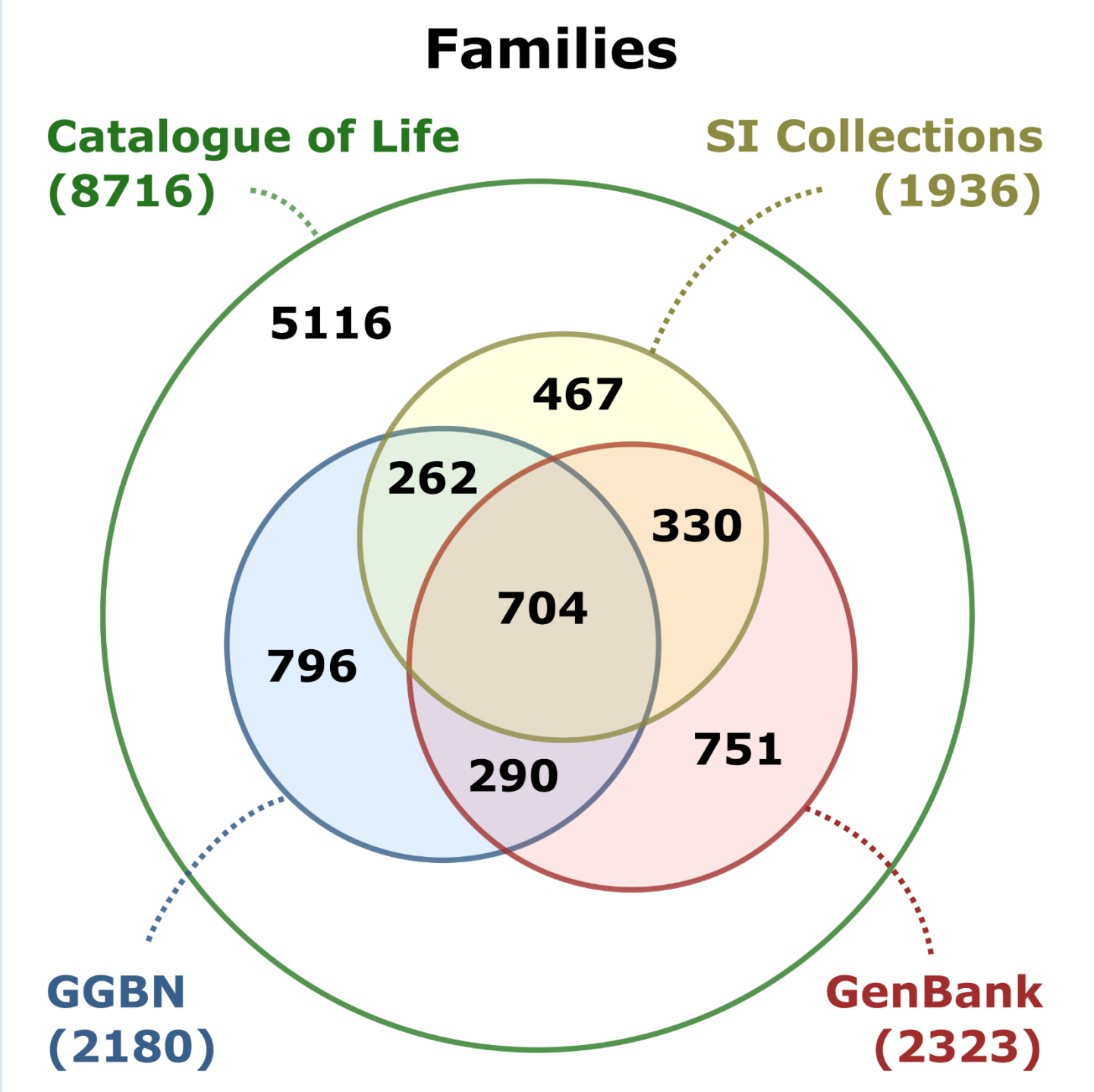
GGBN Growth: 17 Biobanks to date



GGBN Distribution of Families (2329)

N Families	N_BioBanks	Percent
1704	N_BioBanks=1	0.73
442	N_BioBanks=2	0.19
121	N_BioBanks=3	0.05
38	N_BioBanks=4	0.02
20	N_BioBanks=5	0.01
4	N_BioBanks=6	0.00

Gap Analysis Families



Thanks!


GLOBAL GENOME INITIATIVE
Global Genome Biodiversity Network (GGBN)


Australian museum


ASSOCIATION OF AMERICAN UNIVERSITIES
AAU
1900


NATURAL HISTORY MUSEUM OF DENMARK
UNIVERSITY OF COPENHAGEN


AMERICAN MUSEUM & NATURAL HISTORY


Kew
ROYAL BOTANIC GARDENS


RB


NATURAL HISTORY MUSEUM


OCEAN GENOME LEGACY


iDigBio
Integrated Digitized Biocollections


DSMZ


museum für naturkunde berlin


AFRD


国家基因库
CHINA NATIONAL GENEBANK


SENCKENBERG
world of biodiversity


HUMBOLDT

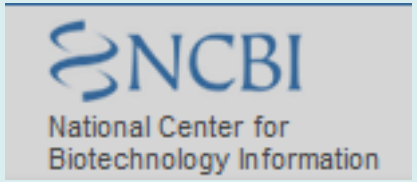

UNICAMP


SAMMLUNG FÜR FORSCHEN ZUM NUTZEN DER WELT
ZSM


HUNGARIAN NATURAL HISTORY MUSEUM


Smithsonian
National Museum of Natural History


CSIRO


NCBI
National Center for Biotechnology Information


NSF


NRF
NZG


MUSEUMVICTORIA


ITIS
Integrated Taxonomic Information System


OPEN
Tree of Life


South Australian Museum


FORSCHUNGS museum KOENIG


Convention on Biological Diversity


BGBM


THE NEW YORK BOTANICAL GARDEN


Barcode of Life
Identifying Species with DNA Barcoding


eol
Encyclopedia of Life


Smithsonian
National Zoological Park


CONSORTIUM FOR THE BARCODE OF LIFE


BIOCODE
moorea

Smithsonian Tropical Research Institute
Center for Tropical Forest Science