Global Virome Project (GVP)

Steering Committee and Working Group Meeting

Beijing, China

6-7 February, 2017

Executive Summary

Drafted by (b)(6) *with input from:* (b)(6) *Peter Daszak* (b)(6) *and* (b)(6) (b)(6)

Executive Summary

The Inaugural Global Virome Project Steering Committee and Working Group Meeting was held on 6-7th February 2017 in Beijing, China. This was the first global in-person meeting on the Global Virome Project (GVP) since the Bellagio Forum in August 2016. Since Bellagio, where 18 transitional steering committee (SC) members identified the goals and vision of the GVP, eleven working groups (WGs) have been formed in three thematic areas: Governance, Science & Technology, and Implementation.

The objectives of this meeting were three-fold: 1.) to report on working group, core group, and steering committee progress made since Bellagio, 2.) to discuss and seek feedback on evolving strategies related to governance, outreach, communication, resource mobilization, and stakeholder engagement, and 3.) to establish and strengthen relationships among working group chairs and the steering committee, identifying issues shared by different groups and planning further collaboration.

1. Progress made since Bellagio

Since May 2016, members of the GVP core group have met with 13 high-level individuals and 20 (philanthropic, academic, multilateral or governmental) organizations. They presented the GVP at 14 conferences or public fora. The Bellagio Initiative statement and briefing documents were published on a new website (globalviromeproject.org) and a newsletter was created for regular distribution. A policy forum paper is under review in an academic journal, and members of the core group have been interviewed in the lay press. The GVP has also been discussed in the popular press.

Working group co-chairs were identified and invited, and each working group compiled and presented the key activities, challenges, and opportunities facing its group.

Several countries have shown significant interest in the GVP, and certain of those countries have been discussed as “countries of opportunity” for launching a first wave of the GVP. These countries include China, which hosted a meeting following this convening on the “China National Virome Project.”

2. Governance, outreach, and communication strategies

The Global Virome Project is coordinated by a core group with representation from USAID, UC Davis, EcoHealth Alliance, and Metabiota. The core group, steering committee, and working group meetings have been partially funded by USAID, while participating working group co-chairs and steering committee members from a host of additional organizations currently participate on a voluntary basis. As this structure is transitional, the long-term organizational structure of the GVP was discussed during the meeting, including the role of a possible Senior Advisory Board. Additionally, the group discussed possible efforts to augment input into the

Page 122 of 767

core group, including tapping into the steering committee on a periodic basis (while taking into account practicalities around time zones, workloads, etc.), following the Beijing meeting. The creation of a freestanding NGO, with an international search for president, was discussed as a plausible governance framework for the long term functioning of the GVP. It was agreed that the GVP should not be a for-profit venture, and that the long-term composition of the overall effort should have diverse global representation.

The team discussed the need to break down the $3.5 billion total price tag of the GVP into a "menu" of smaller projects. Different ways to break this down – by region, country, species, viral group, or category as well as specific technology contributions – each present their own challenge. Part of the modeling team's role will be to economically optimize a field sampling strategy based on biodiversity and accessibility, but local capacity and country-specific laws and protocols must be factored into the costs. Beginning in a "first wave" of countries may increase interest in the project and allow other countries to join and jointly fund the project after value has been demonstrated.

The GVP's scope and goals – particularly, how to communicate the boundaries and scope of such a broad-reaching project and how to ensure the GVP has public health impact beyond academic research – were discussed at length, and this feedback is being incorporated into the mission and vision statements.

3. **Working group intersections and collaboration**

During the session when each of the working groups had short meetings each of the other working groups, areas of overlap were identified. "Sister" working groups – (*e.g.* metadata platform and data management) – committed to working together to achieve the most scientifically sound and feasible strategies for delivering on the GVP's goals were also identified.

(b)(6) established a May 1 goal for the first working group deliverables. It was agreed that generally, the strategic planning of the Science & Technology working groups should precede the tactical delivery of the Governance and Implementation working groups.

The way forward

All participants were called upon to present to their networks in upcoming conferences, meetings, and public fora, and the pitch deck and other explanatory materials will be shared with all participants. Many members of the steering committee expressed intereste in increasing their involvement, and were invited to reach out to the co-leads of working groups that interested them to join the budding working groups.

There was additionally a commitment to establishing an online hub where working group participants could communicate, upload files, jointly work on documents, and otherwise interact. Thematic leads were tasked with setting up a call schedule for their working groups and working with their groups to develop roadmaps.

Page 123 of 767
Page 3 of 13

Appendix: Meeting Agenda

Beijing Global Virome Project (GVP) Steering Committee Meeting

Overarching Meeting Objectives:

To provide an update on progress since Bellagio, as well as forge a consensus on the next steps for the GVP to achieve the goals of building a world safe from emerging viral threats and to lay out a clear roadmap for the launch of the GVP that will provide the best possible outcomes for protecting global health.

Sunday Objective:
Arrival and Greetings

Sunday, February 5th, 2017 Location: China National Convention Center Grand Hotel Beijing, China	
All day	**Arrival and check-in to Conference Hotel**
6:30 - 8:30 p.m.	**Welcome Dinner** (Chinese Restaurant at the hotel, 1st Floor) - *Welcoming Remarks,* (b)(6)

Page 124 of 767

Beijing Global Virome Project (GVP) Steering Committee Meeting

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Monday Objective:

To provide updates and refocus on the "way forward" agreed upon at Bellagio.

Monday, February 6th, 2017 Location: Zun Yan, 2nd Floor, China National Convention Center Grand Hotel Beijing, China		
8:00 – 9:00 a.m.	**Breakfast (2nd Floor)**	All Participants Welcome
9:00 - 9:30 a.m.	**Welcoming Remarks and Introductions**	(b)(6) Participants (Introductions)
9:30 - 9:40 a.m.	**Review of Meeting Agenda & Objectives** *Brief Remarks*	(b)(6)
GVP Status Report Since Bellagio: This session will provide updates on the progress with the GVP since the initial Bellagio meeting in August 2016.		
9:40 - 10:00 a.m.	**Updates and Review of Post-Bellagio Planned "Deliverables to Impact"** ● **Developing Structure** ● **Outreach; Major Lessons and Issues** *Presentation and Q&A*	(b)(6)
10:00 - 10:45	**Governance Thematic Area**	Thematic & Working Group co-leads

a.m.	• Legal, Equity, Social Issues • Advisory/Partnerships *Brief presentations, Q&A, & discussion*	
10:45 - 11:00 a.m.	**Break**	All Participants
11:00 - 12:00 p.m.	**Science & Technology Thematic Area** • Lab Platform • Modeling & Risk Analytics • Metadata Platform • Behavioral Risk *Brief presentations, Q&A, & discussion*	Thematic & Working Group co-leads
12:00 - 1:00 p.m.	**Implementation Thematic Area** • General Management & Partner Engagement • Communications & Outreach • Data Management • Field Operations • Lab & Biosafety Implementation *Brief presentations, Q&A, & discussion*	Thematic & Working Group co-leads
1:00 - 2:00 p.m.	**Lunch (2nd Floor)** • Group Photo before dispersing for lunch	All Participants
Strategic Vision: This session will discuss evolving strategies related to outreach, communication, resource mobilization, and stakeholder engagement.		
2:00 - 2:30 p.m.	**Establishing Senior Advisory Board** • Roles and Responsibilities • Suggested Members *Facilitated discussion*	(b)(6) All Participants
2:30 - 3:15 p.m.	**Outreach Update + Discussions** • Individuals/Organizations/Countries • GVP Documents • Paper status • Website • Newsletter *Presentation, discussion, and Q&A*	(b)(6)
3:15 - 5:00 p.m.	**Evolving Strategy**	(b)(6)

(Inclusive of break)	• Honing our strategic thinking for GVP roll out
	  ○ Feedback thus far and evolution of messaging
	  ○ Strategic roll-out
	  ■ Funding prioritization strategy
	  ● Sampling strategy (eco-zones, taxa, etc.)
	  ○ GVP Pitch Deck
	  ■ Customizing for the target audience
	  ● Resource mobilization
	  ● Engaging technical constituents (ie virologists, conservationists)
	Presentation and facilitated discussion	

5:00 - 5:15 p.m.	**Summary & Closing Remarks** *Brief Remarks*	(b)(6)
7:00 – 8:30 p.m.	**Dinner**	All Participants

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Tuesday Objectives:

Create an opportunity for working group leads to lay the groundwork for areas of shared interest and overlap.

Tuesday, February 7th, 2017 Location: Zun Yan, 2nd Floor, China National Convention Center Grand Hotel Beijing, China		
8:00 - 9:00 a.m.	**Breakfast (2nd Floor)**	All Participants Welcome
9:00 - 9:15 a.m.	**Review of Agenda & Plans for Today** *Brief Remarks*	Peter Daszak
Working Groups: This session will focus on "cross-walking" issues/topics that are shared among the working groups; establish lines of communications and identify areas of further shared action.		
9:15 - 9:45 a.m.	**Summary of issues and actions discussed on Monday and parking lot issues** • **Senior Advisory Group** • **Future outreach strategies** *Summary remarks & Discussion*	(b)(6)
9:45 - 11:00 a.m.	**Working Groups: Interactive Sessions** • "Speed Dating" *Interactive session* *Note: Steering Committee to float or join specific WG of their choice*	(b)(6) All Participants
11:00 - 11:15 a.m.	**Break**	All Participants

Page 128 of 767

11:15 - 12:15 p.m.	**Report out from Working Group sessions and Summary of next steps** • **What topics identified** • **Next steps post-Beijing** *Report out & Discussion*	Working Group Co-Leads
12:15 - 1:15 pm.	**Lunch (2nd Floor)**	All Participants
Parallel Sessions: **GVP Working Group Sessions** Zun Yan, 2nd Floor, China National Convention Center Grand Hotel **China National Virome Project Initiative Meeting** Institute of Microbiology, Chinese Academy of Sciences, E301		
1:15 - 4:00 p.m.	**Working Group Meeting**	Cross-Working Group co-leads meetings
1:30 - 5:00 p.m.	**CNVP Initiative Meeting**	Steering Committee + Core Team + Other Interested Parties
5:00 - 7:00 p.m.	**Participant Free Time**	All Participants
7:00 – 8:30 p.m.	**Dinner**	Participants + CNVP Meeting Attendees

Page 129 of 767

China National Virome Project (CNVP) Initiative Meeting

7 February 2017 2:00 PM
E301 Institute of Microbiology, Chinese Academy of Sciences

Tentative Agenda

1:30-2:00 p.m.	Registration	
2:00-2:20 p.m.	Welcome & Opening Address	(b)(6)
2:20-2:50 p.m.	Introduction of Global Virome Project (GVP)	
2:50-3:10 p.m.	Q & A	
3:10-3:25 p.m.	Presentation	
3:25-3:40 p.m.	Presentation	
3:40-3:55 p.m.	Presentation	
3:55-4:10 p.m.	Presentation	
4:10-4:25 p.m.	Collaborative Viral Discovery Research in China	Peter Daszak
4:25-4:35 p.m.	Brief Summary	(b)(6)
4:35-5:00 p.m.	Discussion-How to initiate the CNVP & Closure	Moderated by (b)(6) & Peter
5:00-7:00 p.m.	Participants free meetings and discussion	

Organization Attending (Tentative)

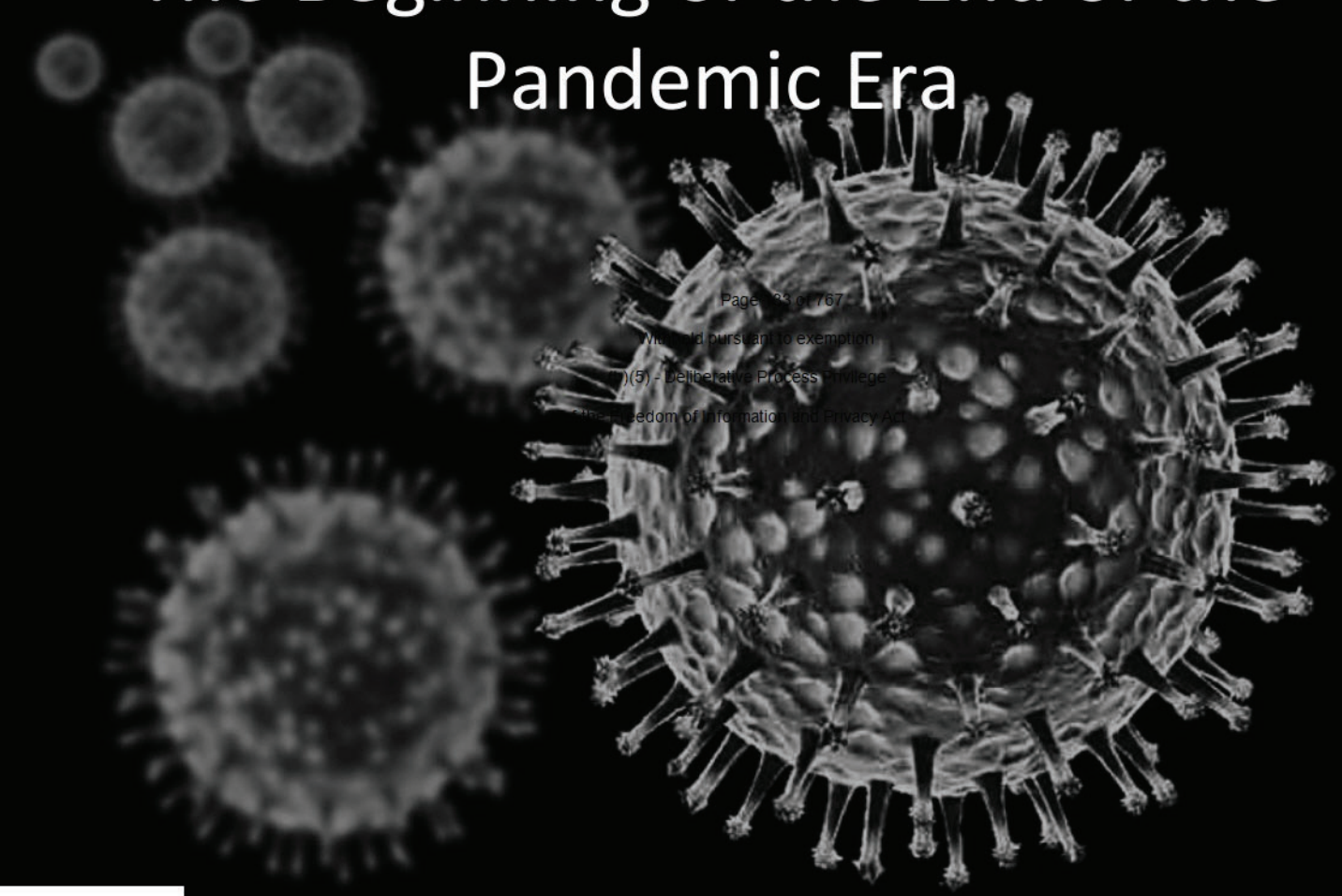
Ministry of Science and Technology 国家科技部
Veterinary Bureau, Ministry of Agriculture 国家农业部兽医局
National Health and Family Planning Commission 国家卫生与计划生育委员会
Chinese CDC 中国国家疾病预防与控制中心
National Natural Science Foundation of China 国家自然科学基金委员会

Beijing Genomics Institute, BGI 华大基因
Harbin Veterinary Research Institute of Chinese Academy of Agricultural Sciences 中国农科院兽医研究所
Wuhan Institute of Virology, Chinese Academy of Sciences 中国科学院武汉病毒所
National Institute for Viral Disease Control and Prevention, China CDC 中国疾控中心病毒病预防控制所
CAS Key Laboratory of Pathogenic Microbiology and Immunology 中科院病原微生物与免疫学重点实验室
Medical School of Zhejiang University, State Key Laboratory of Infectious Diseases Diagnosis and Treatment 浙江大学医学部，浙江大学附属第一医院、传染病诊治国家重点实验室
National Institute for Communicable Disease Control and Prevention, Chinese CDC 中国疾病预防控制中心传染病预防控制所
National Research Center for Exotic Animal Diseases, Chinese Animal Health and Epidemiology Center 中国动物卫生与流行病学中心，国家外来动物疫病研究中心
Institute of Microbiology and epidemiology, Academy of Military Medical Sciences 军事医学科学院微生物流行病研究所
National Institute of Infectious Disease Control and Prevention of Chinese CDC, Zoonosis Office 中国疾控中心传染病预防控制所，人兽共患病室
National Research Center of Wildlife Borne Diseases, Institute of Zoology of Chinese Academy Science 中国科学院动物研究所野生动物疫病研究中心
Institute of Veterinary Science, Academy of Military Medical Sciences 人畜共患病研究教育部重点实验室，军事医学科学院军事兽医研究所
China Animal Disease Control Center 中国动物疫病防控中心

Institute of Ecology, Beijing Normal University 北京师范大学
MOH Key Laboratory of Systems Biology of Pathogens, Institute of Pathogen Biology, Chinese Academy of Medical Sciences & Peking Union Medical College 中国科学医学院 / 北京协和医学院．病原生物学研究所
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences 中国科学院深圳先进技术研究所
CAS Center for Influenza Research and Early-Warning (CASCIRE), Chinese Academy of Sciences 中国科学院流感研究与预警中心
East China Normal University 华东师范大学
Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences 中科院上海生物科学研究所
Department of Epidemic Diseases Monitoring of Wild Animal, State Forestry Administration 国家林业局保护司野生动物疫源疫病防控处
China Animal Health and Epidemiology Center 中国动物卫生与流行病学中心
Nanjing Institute of Environmental Sciences (NIES), Ministry of Environmental Protection of China 环境保护部南京环境科学研究
Food & Agriculture Organization of the United Nations, China Office 国际粮农组织
China-US Collaborative Program on Emerging and Re-emerging Infectious Diseases, US Embassy
NIAID Office in China
National Science Foundation (NSF) Beijing Office
WHO China Office
World Bank China Office
USAID Beijing

The Global Virome Project

The Beginning of the End of the Pandemic Era



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Bellagio and Beyond

Boldly going where no project has gone before

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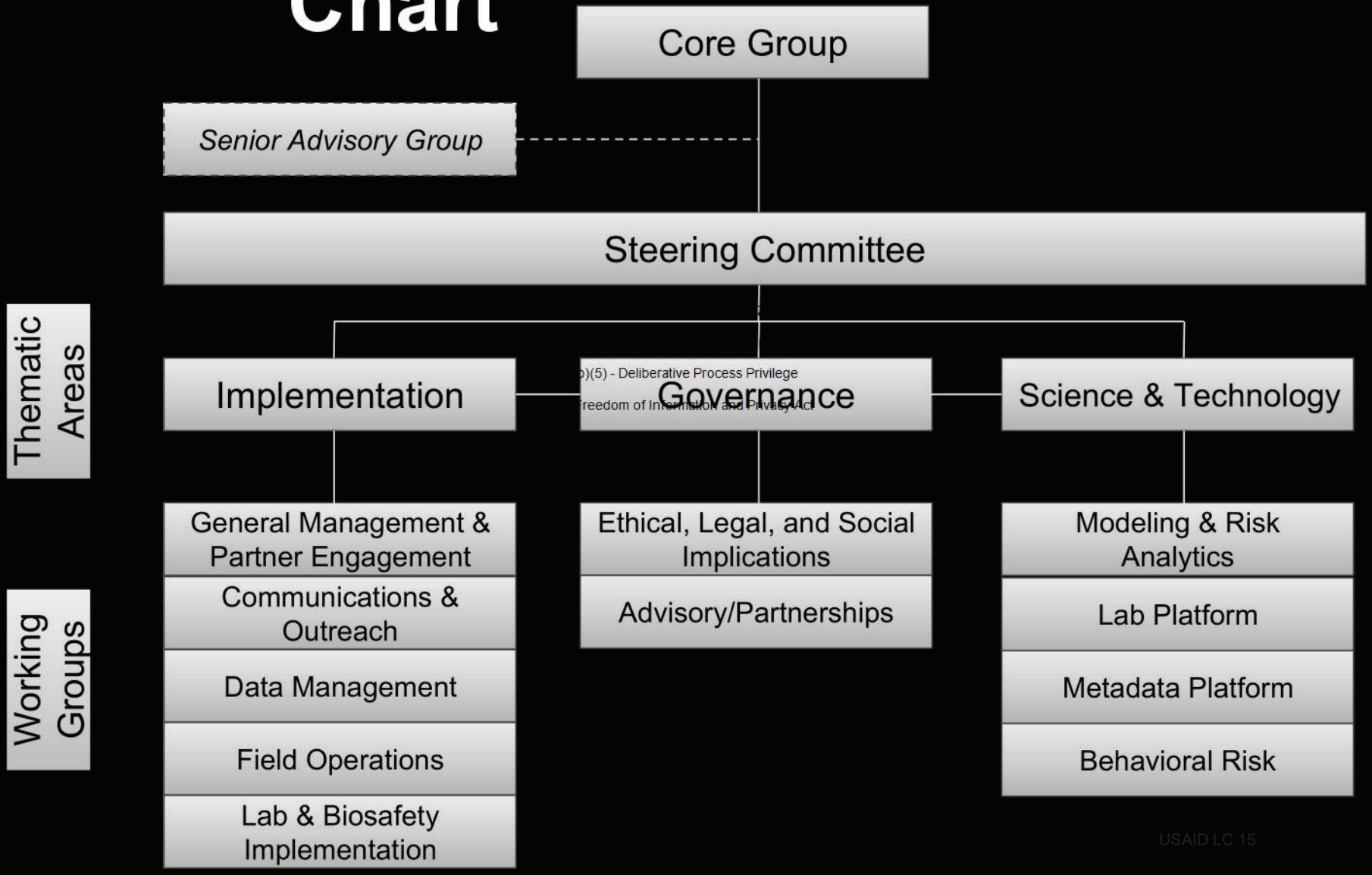
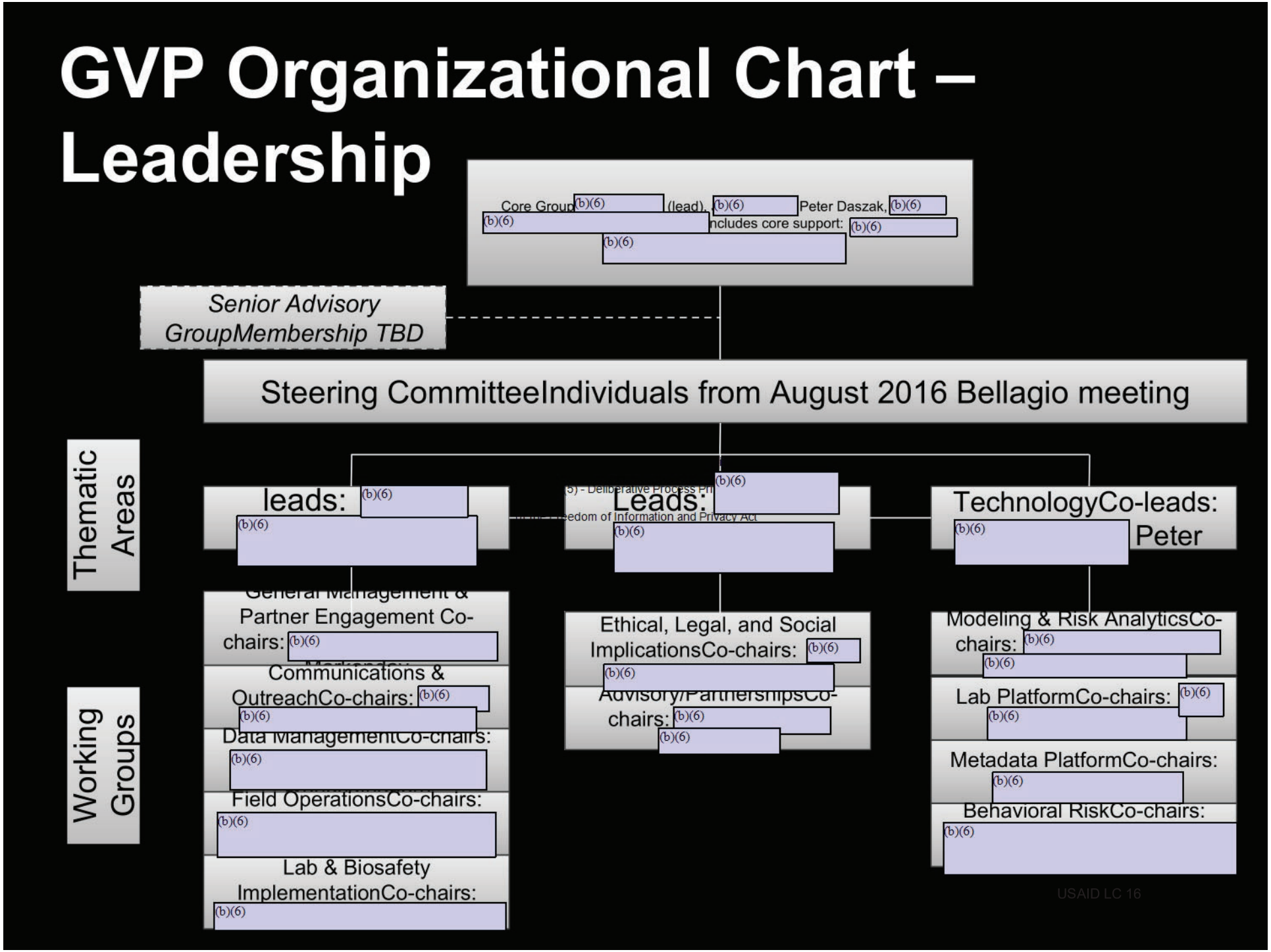
GVP Organizational Chart



GVP Organizational Chart – Leadership



GVP Timeline

- Public presentations for feedback
- 1-on-1 meetings with stakeholders
- Development of tentative budget
- Formation of Core Group
- Identification of transitional Steering Committee

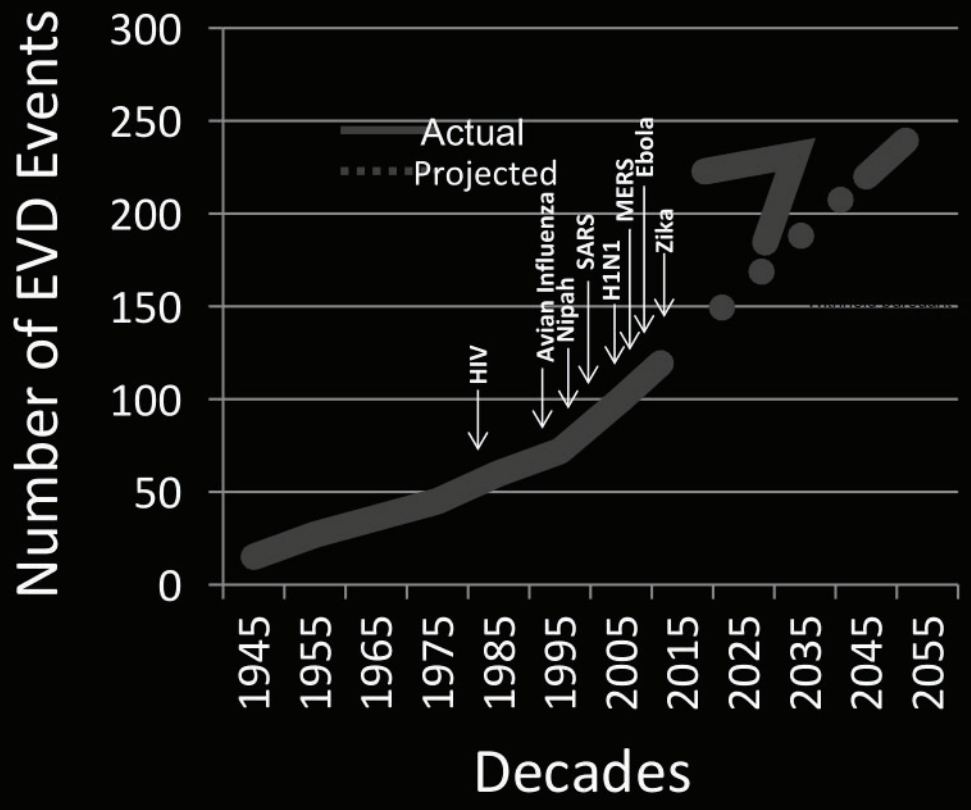
- Identification of Thematic Area co-leads
- Identification of working group co-chairs and membership
- Identification of Advisory Board members
- Identification of governance structure and funding strategy
- Continued outreach and refinement of messaging

- Formal coordination structure in place
- Final agreement on overall GVP strategies
- All implementation protocols finalized
- Begin work in First Wave Countries

GVP Yesterday, Today & Tomorrow

Boldly going where no project has gone before

The threat from novel viruses is increasing



Source: Jones *et al*. (2008) Nature

- ~ 3 new Emerging Viral Diseases (EVD) annually Driven by population expansion (1.6 billion in 1900 to 11.5 billion people in 2100) Increased encroachment into wildlife habitat is accelerating the "spillover" of novel viral threats from wildlife to humans

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We are not prepared

- HIV, SARS, H1N1 Influenza, MERS, Ebola, Zika = examples of the futility of developing countermeasures AFTER emergenceTheir emergence and spread have outpaced our ability to develop new countermeasuresUrgent need to develop countermeasures in ADVANCE of emergence

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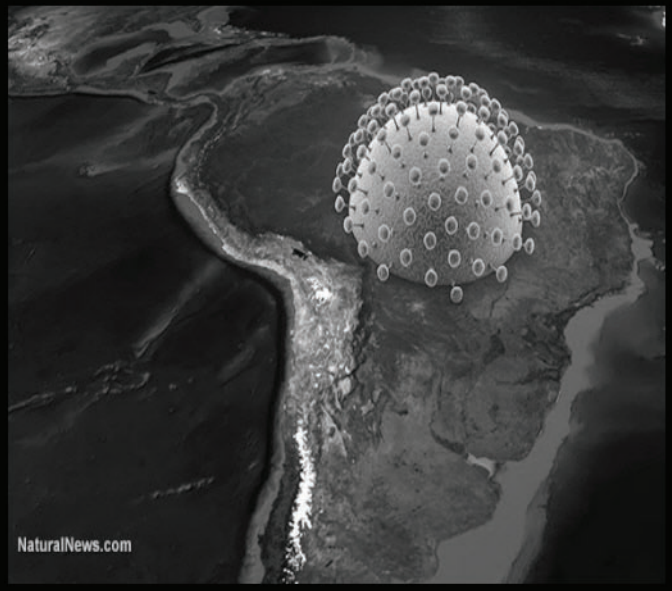
The Global Virome Project



- The Global Virome Project (GVP) is a global venture to characterize within ten years virtually all of the planet's threatening viruses The GVP will create a data rich field - enabling preventive development of countermeasures The GVP will transform the culture – from being Reactive (and ineffective) to one that is Proactive (and effective)

The Global Virome Projects presents a path to the identification of all viruses that can infect humans - *so we can prepare for them before they jump to us*

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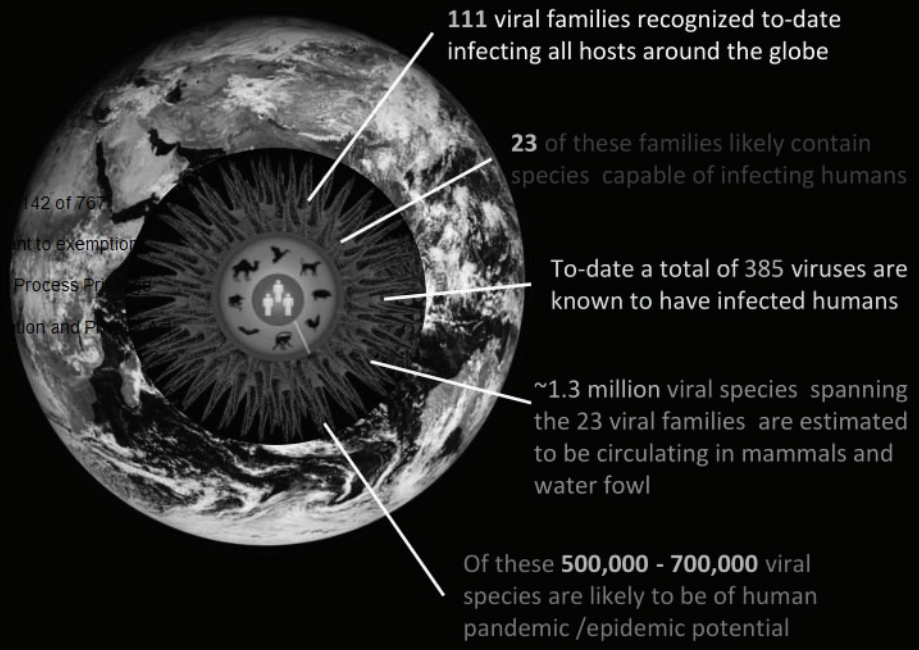
Making the unknown known

- There are ~500,000 viruses spanning 23 viral families in wildlife that have the potential to cause human infectionThis means, for every “known” corona virus there are likely 20,000 distinct “unknown” viruses of the same coronavirus family circulating among an “unknown” pool of wild animalsThe same holds for HIV and retroviruses, filoviruses, etc.



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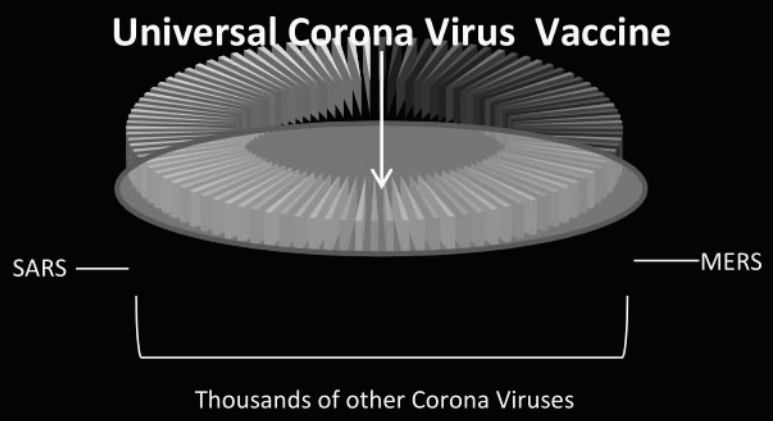
Impact (I): Pandemic prevention



GVP's Data Will Drive:

The Next-Gen of Broad Spectrum Countermeasures

GVP will enable the comparative analysis of thousands of members of each viral family and development of countermeasures that are broadly effective – rather than against individual viruses (e.g. MERS, SARS, etc.)

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Impact (II): Pandemic prevention

Minimizing the Risk of Spillover

GVP's Data Will Drive:

Targeted, High Impact Risk Mitigation GVP's detailed characterization of every virus's ecologic profile – spanning host range, geographic distribution, and epidemiology – will enable the identification of viruses that pose the greatest potential threat – and the targeting of measures to prevent spillover

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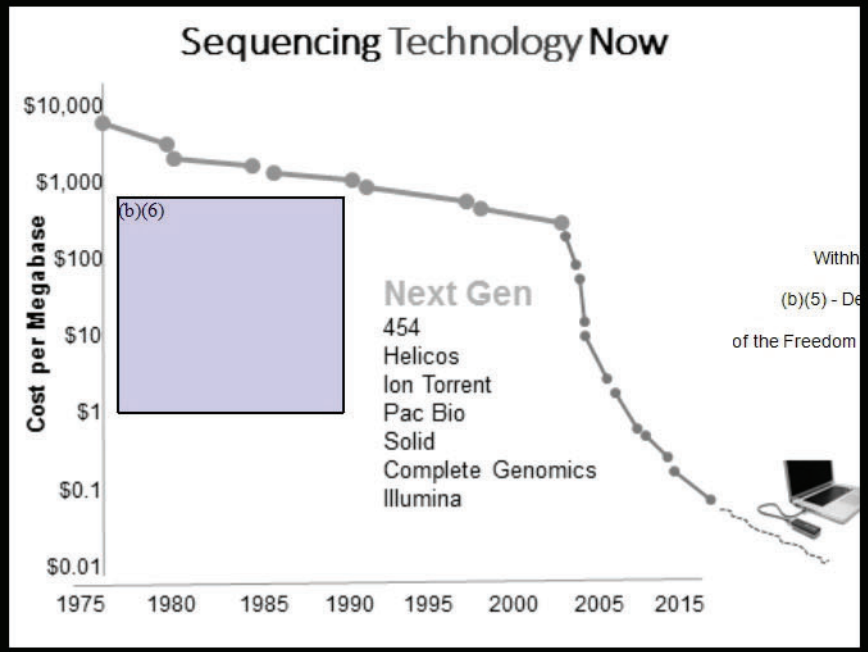
Impact (III): The "Halo Effect"



- As in the Human Genome Project, data generated by the GVP will dramatically accelerate the development of new diagnostic & analytic toolsGVP's surveillance and lab platforms will remain after GVP is completed as a long term system for monitoring evolving viral threats Data generated will have unanticipated impact – for example, the potential identification of unknown viral causes of chronic diseases like cancer

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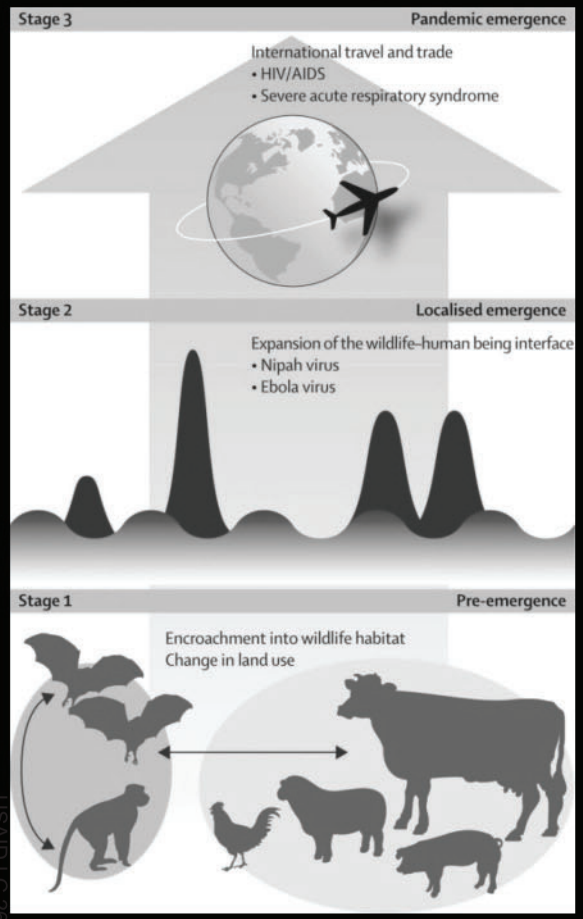
The "Halo Effect" – Building a Long-Term Global Surveillance Network for Emerging Viral Threats

Stages of "Emergence"



- Investing in a global GVP database will serve as a critically important "snap shot in time" on viral ecology, epidemiology, and geneticsHowever, an inherent characteristic of the most dangerous EVDs is that their host range, epidemiology, and genetic profiles will evolve over time – elevating their threat to human populationsGVP's surveillance and laboratory platforms have the potential to remain beyond the GVP as a long term system for monitoring evolving viral threats – ensuring early and effective deployment of biomedical and preventive countermeasures

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Feasibility (I): Large scale "Proof of Concept"

The feasibility of GVP was validated through USAID's PREDICT Project

Spanning >30 countriesOver $120 million invested to date Seven years +Another approx. $90 million obligated for activities over next 3 years

Systems and Capacities Built

Trained

field & lab staff

Optimized

labs

Sampled

wild animals

Viruses detected

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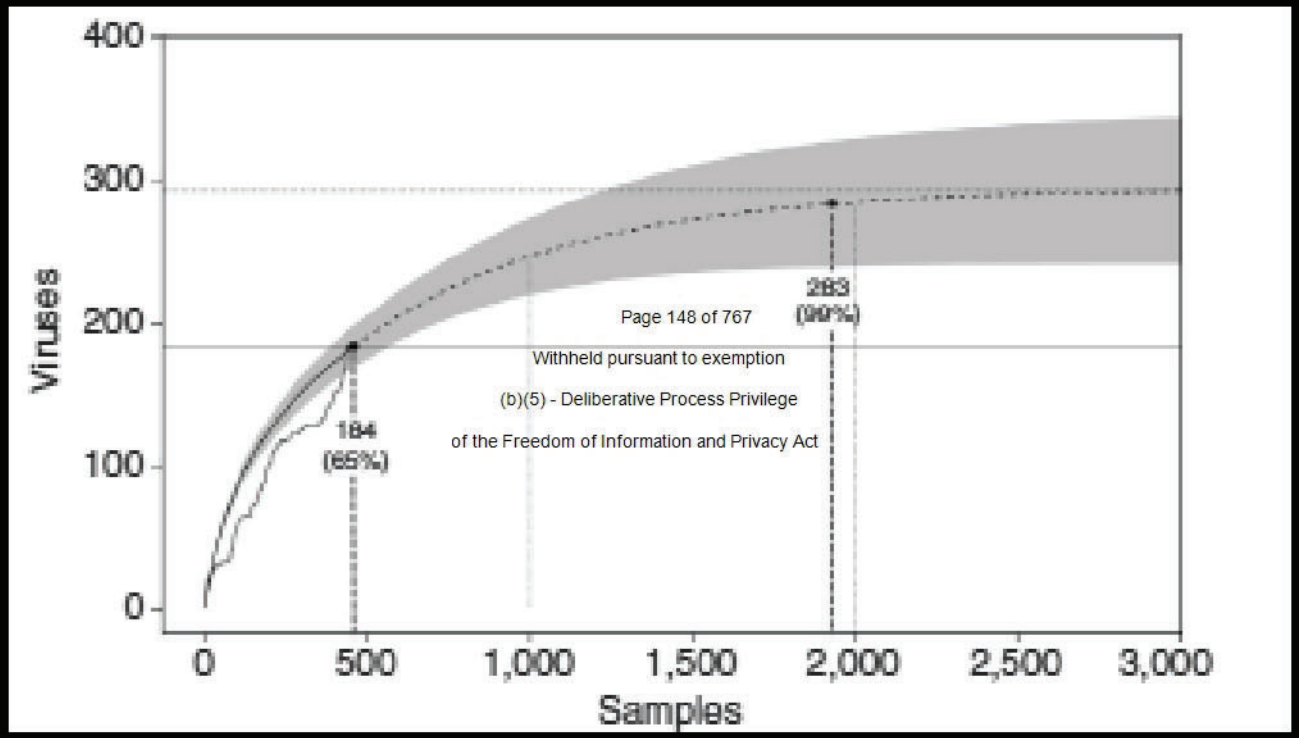
Feasibility (II): Extrapolating from PREDICT

Discovery Curves Show the Number of Samples Required



- PREDICT research has demonstrated that far fewer samples than previously expected are required to identify most threatening virusesThese viral discovery curve studies provide a roadmap to sampling needs for GVP

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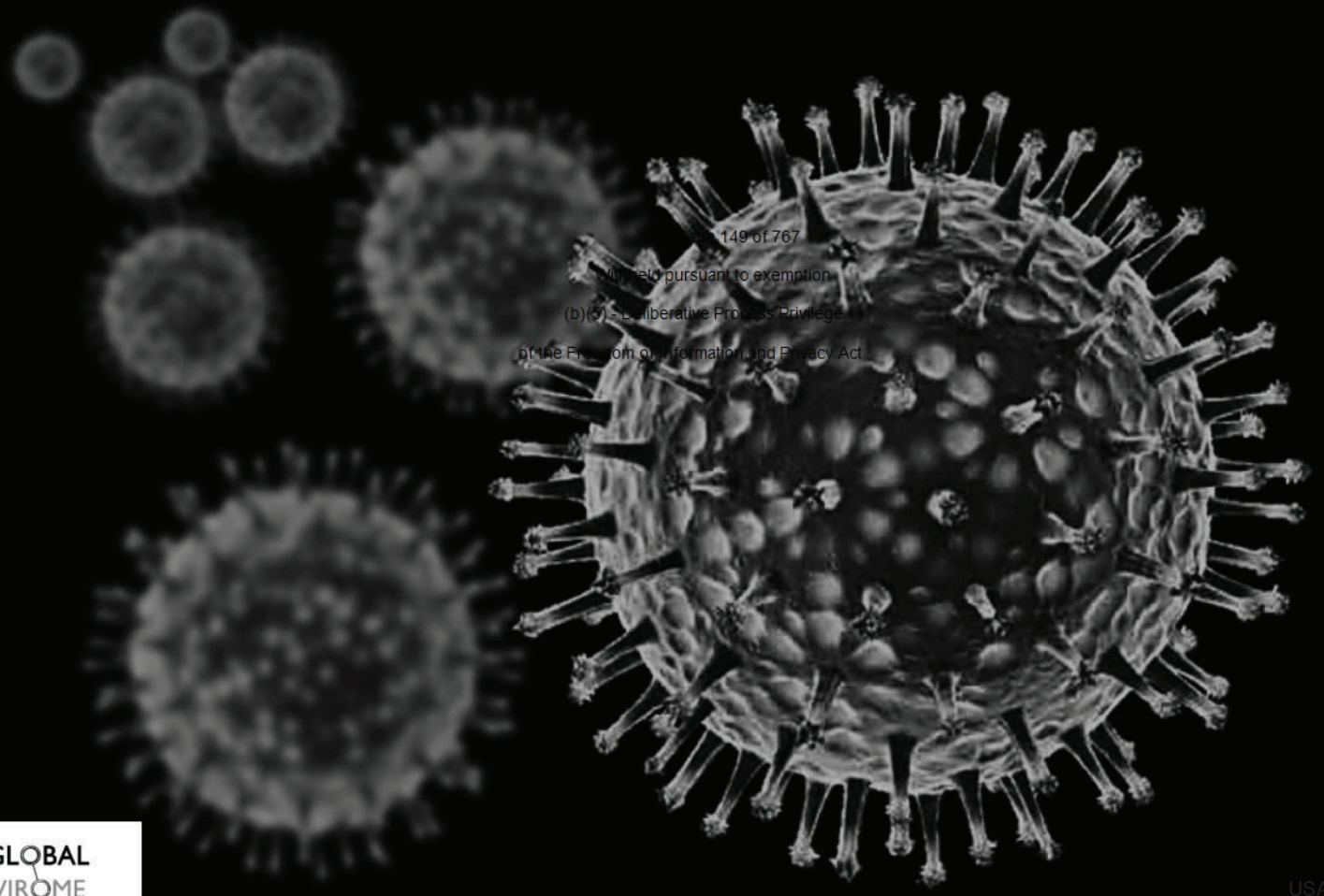
GVP underpinnings



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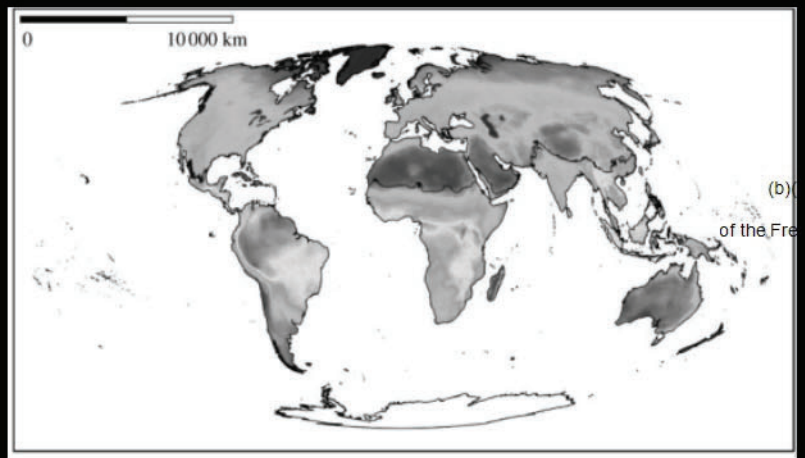
GVP: The Approach – Get to the Source

Mammals and water fowl are viral reservoirs



Mammalian Habitat ranges

Waterfowl breeding hotspots

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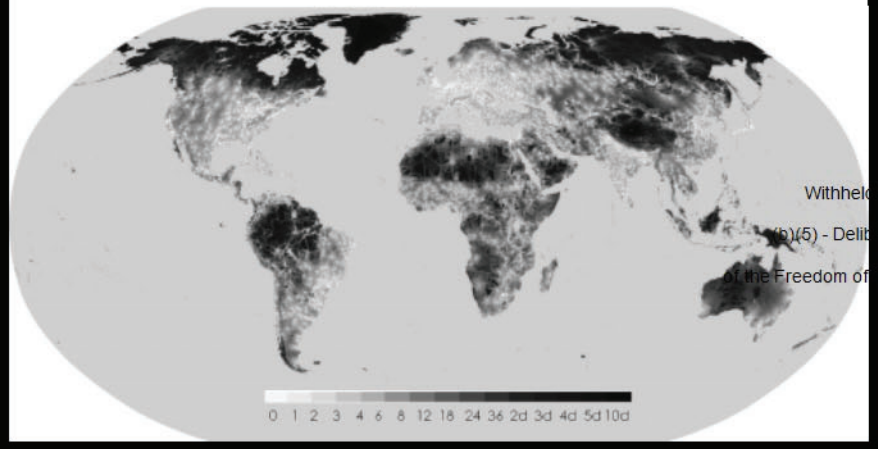
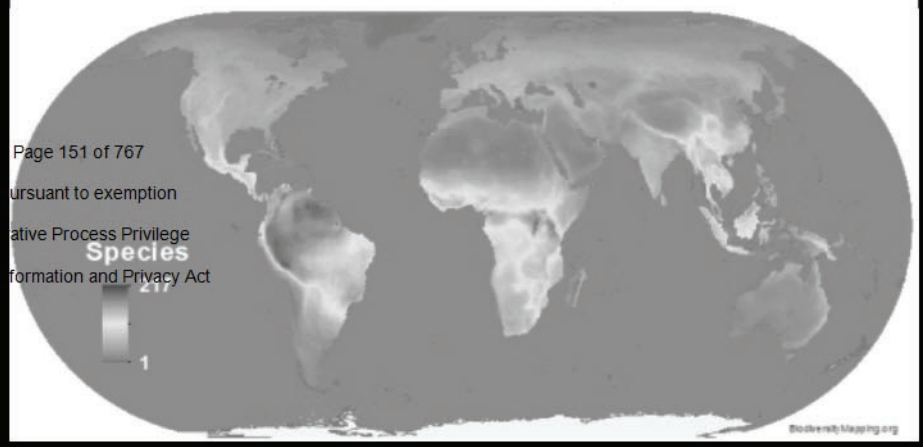
Optimizing the targeting strategy

Minimize cost

Access costs (days to location)



Global mammalian biodiversity



…while maximizing biodiversity

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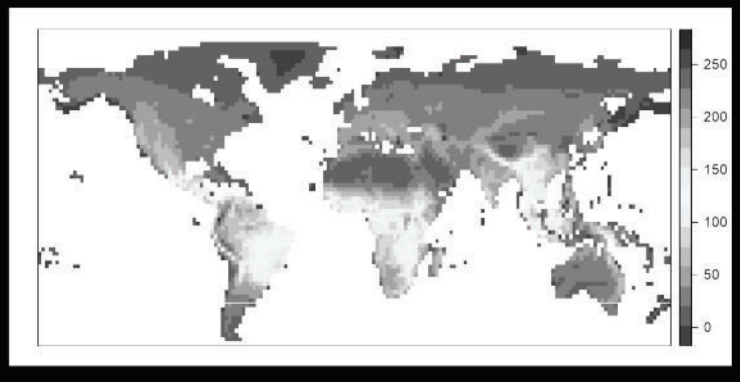
Initial targeting:Selecting planning units from a global grid



Maximize:

- Mammalian biodiversity Uniqueness of diversity in field sites

While Minimizing:

- Access costs of field workOverlap between sample sites

To select:

A minimal number of **efficient, high- diversity** sample sites

Sampling strategy: Eco-zone Approach

Site selection algorithm is:
Complementary
Cost-responsive
Adaptive Flexible

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Targeting complementary biodiversity hotspots

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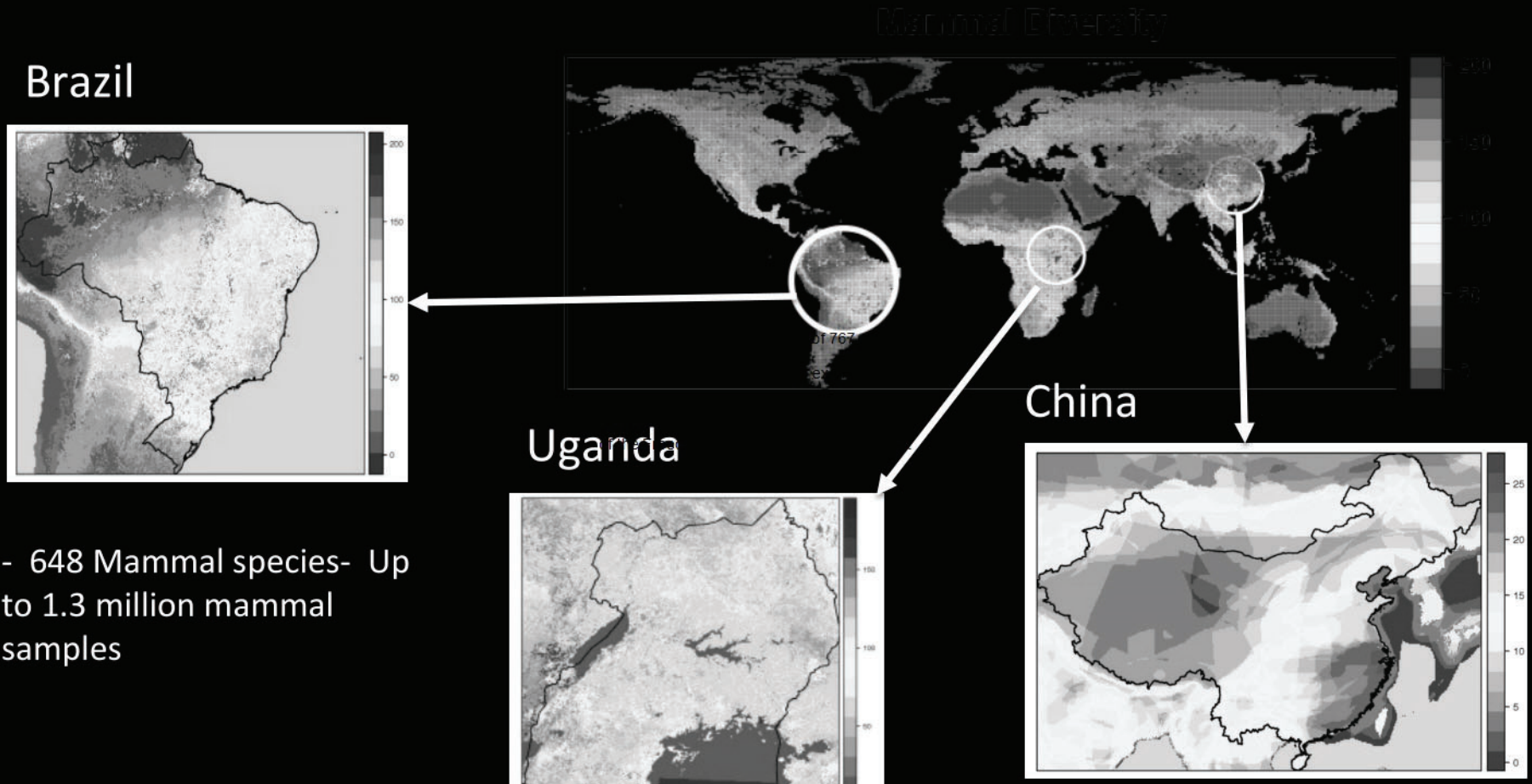
Targeting Rich Mammalian Diversity



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Evolving GVP Modules and Funding Strategies

PHASE 1

"Hub"

Working GroupsHQ (Mgt, Adv…)Secretariat (outreach, communications) Convening & travelStrategic/technical consult

PHASE 2

Global Implementation	**OR**	***High yield countries***	***Countries of opportunity***	***Taxonomic or interface prioritization***	***Specific technical needs***
Requires substantial upfront investment now		*"Hot Zone"Regions with Rich Biodiversity (EcoZones)*	*National Virome Projects*	*High-profile species Virome Projects*	*Data generation & storage, lab, modeling, epidemiology, etc.*

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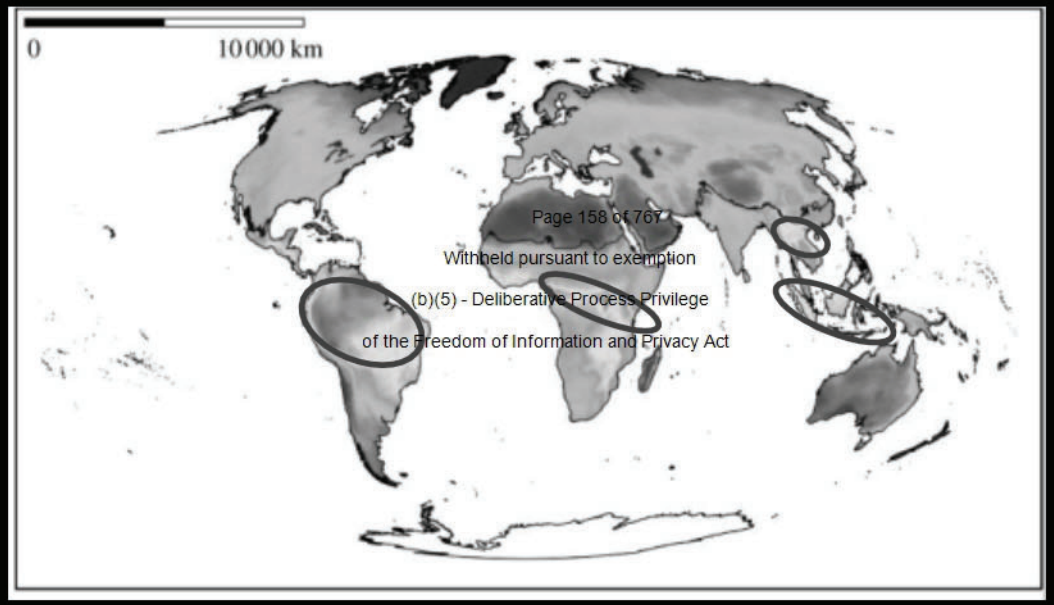
Strategic Targeting

Funding Strategies

Targeted funding for High Yield Countries/Regions



Mammalian Habitat ranges - Ecozone approach

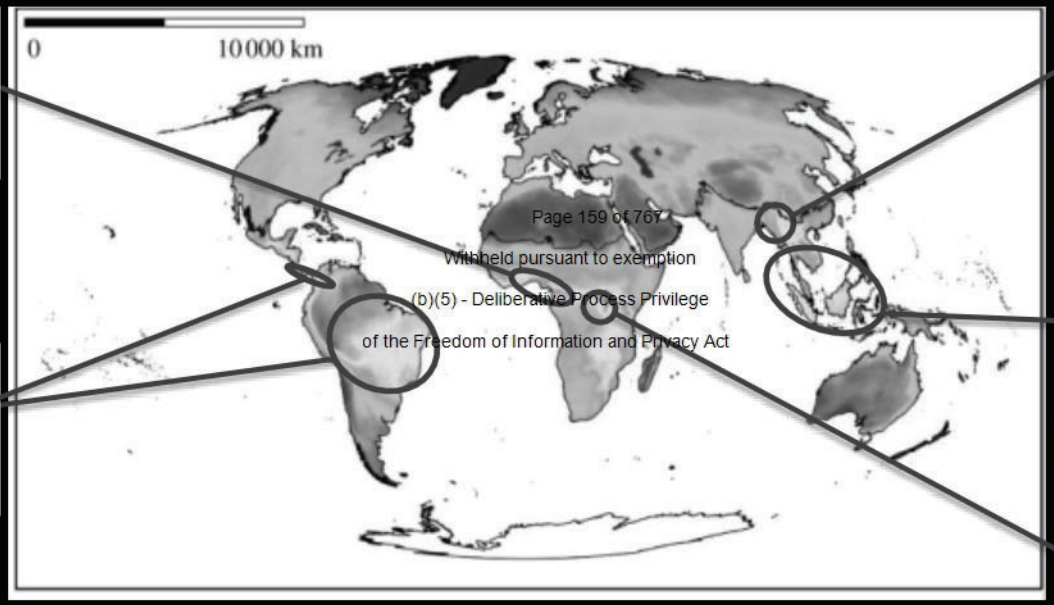
GLOBAL VIROME PROJECT

Funding Strategies

Potential First Wave of High-Yield Targets

West/Central AfricaGhana: $39MCameroon: $35M

Latin AmericaBrazil: $80MCosta Rica: $29M



South AsiaBangladesh: $18M

Southeast AsiaThailand: $38MCambodia: $26MIndonesia: $90M

East/Central AfricaDR Congo $57MCameroon: $43M

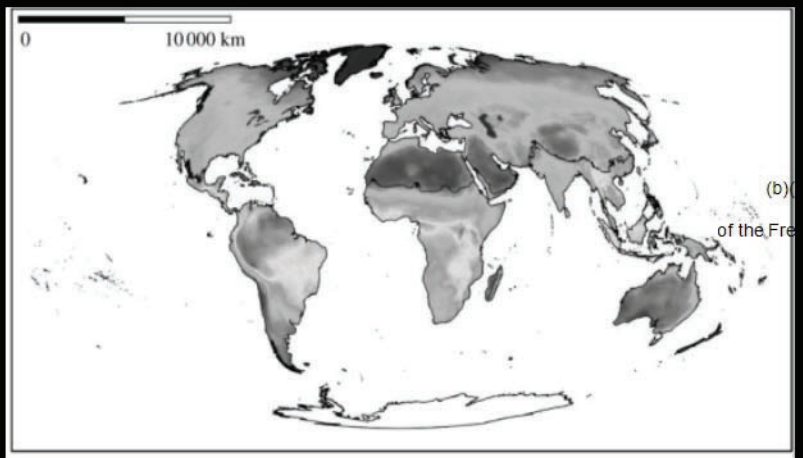
Could capture a huge amount of viral diversity and associated benefits with less than $500M in approximately 5

GLOBAL VIROME PROJECT

Funding Strategies

Potential Countries of Opportunity

China, Costa Rica, Australia



Mammalian Habitat ranges

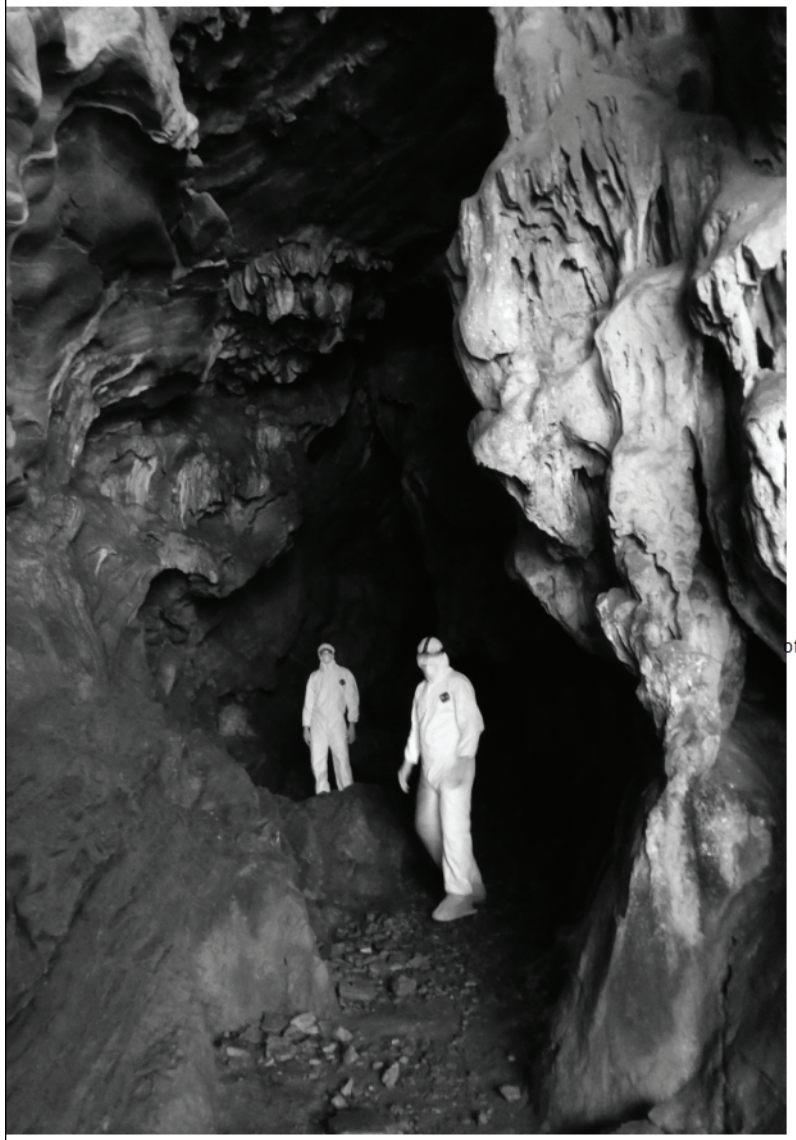
Canada Norway China

Waterfowl breeding hotspots

GLOBAL VIROME PROJECT

Senior Advisory Group

- High-level issuesCross-link to global health architectureProvide guidance on funding strategiesAssess options for leadershipAdvise on program directions & progress



Working Towards a China-Led Virome Project

(b)(6)

EcoHealth Alliance

August 2016

Bellagio Initiative

September 2016

Concept of CNVP from Chinese research groups

February 2017

1st CNVP meeting to identify key partners

September 2017

2nd CNVP meeting

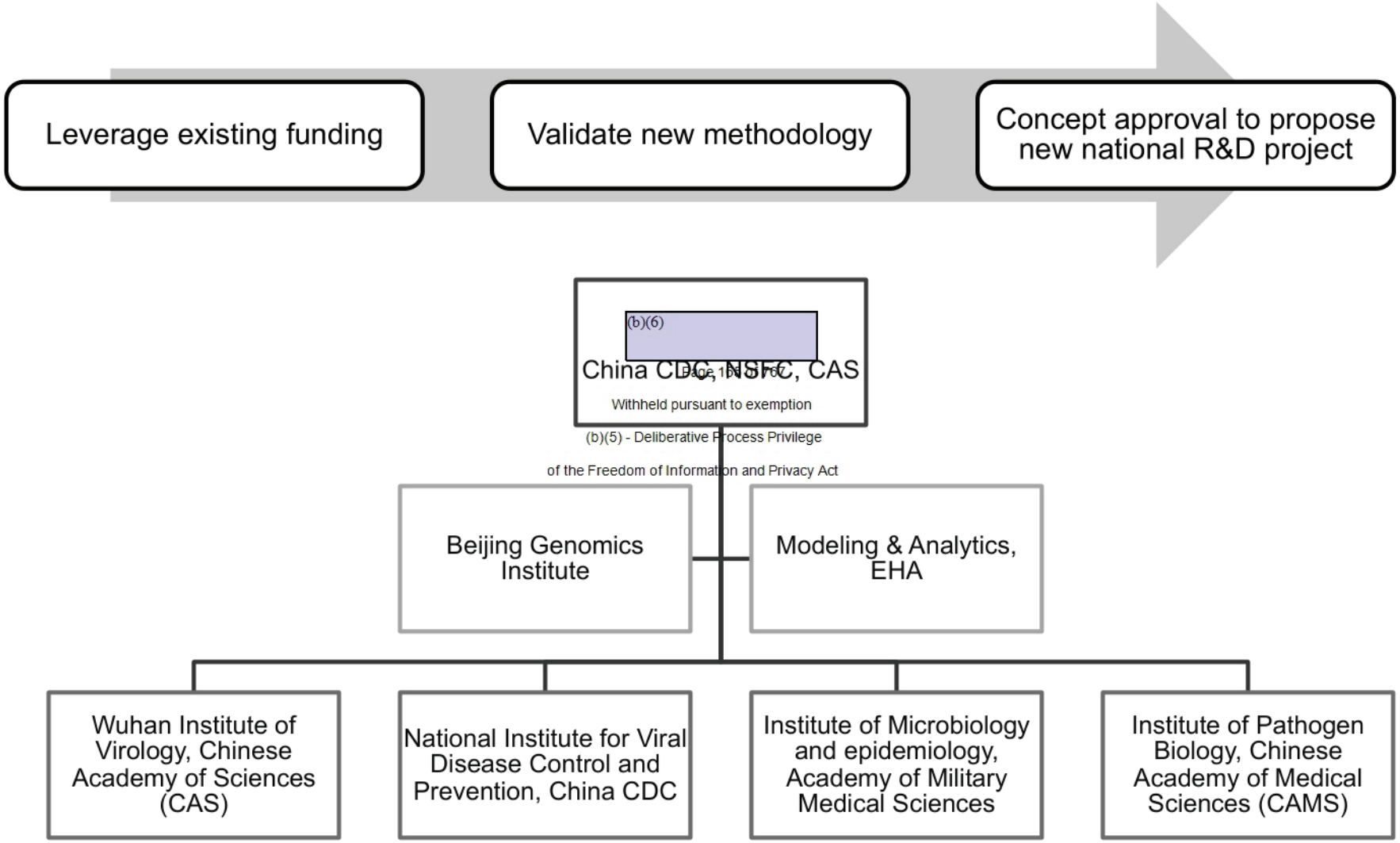
National science and technology major national R&D project of infectious disease prevention and control -- 'Belt and Road'

October 2017- September 2018

Concept of a China-led virome project

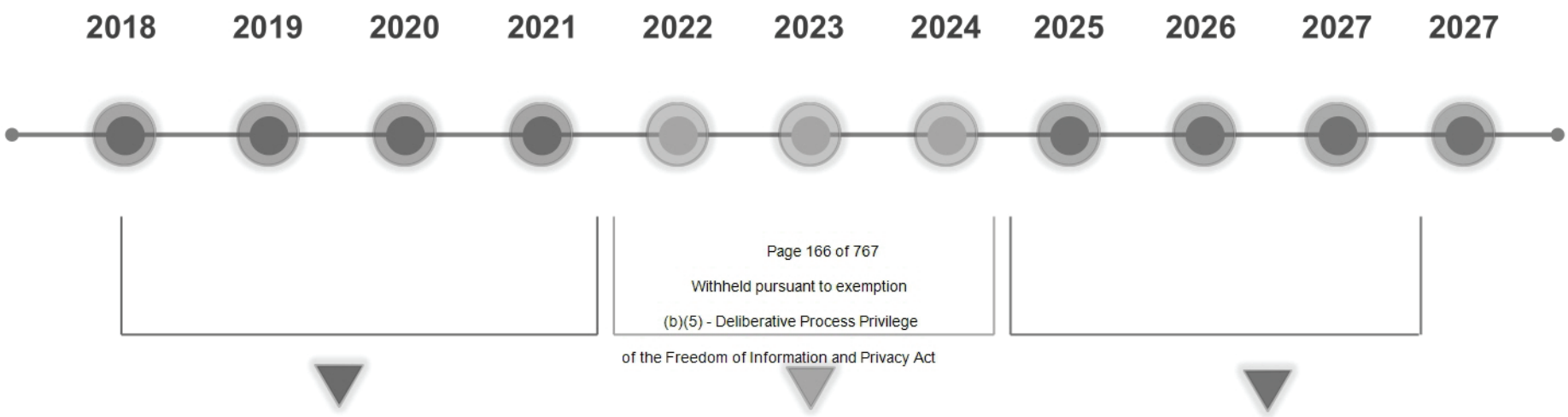
Developing pilot projects utilizing existing funds

Pilot Projects in China



The Way Forward

Small-group meeting in February 2019 for planning and coordination



Phase I – Piloting

- Sampling of more common wild mammal species in China
- Viral database initiated
- Lab diagnostic techniques developed
- Building partnerships in Asian and African countries

Phase II

- Continuing surveillance in China
- Data collection entry into central database
- Continuing development of new diagnostic techniques
- Expansion to collaborate with other countries

Phase III

- Full data collection and analysis
- Data entry into central database
- New diagnostic techniques used and distributed

Thank you!

(b)(6) @ecohealthalliance.org

Roundtable Dialogue Toward Establishing a Thailand National Virome Project

October 24-25, 2018 ~~(TBD)~~

Objectives:

- Further introduce and update status on the Global Virome Project
- Identify and synthesize Thailand's viral discovery and risk analysis expertise
- Discuss Thailand's capacities in the context of the GVP, and build consensus around key goals to be achieved in developing a Thailand National Virome Project

Expected Outputs:

- Summary report and synthesis of Thailand's viral discovery and risk analysis landscape
- Draft roadmap and iterative milestones in developing a Thailand National Virome Project

October 24, 2018

8:30 – 9:00 am	Registration	
I. Introduction		
9:00 – 9:30 am	Opening Remarks -Permanent Secretary : Ministry of Public Health~~, DMSC~~ -Permanent Secretary : Ministry of Science and Technology~~, NSTDA~~	[TBC]
9:30 – 10:45 am	Overview of the Global Virome Project GVP Structure at Global and National Levels - Thematic Areas: ○ Governance ○ Science &Technology ○ Implementation Phased Approach	(b)(6) Requested issues to be covered 1. Background 2. IT infrastructure, Data management & sharing 3. Governance 4. Budget / site 5. Sample repository, sharing and MTA

Commented (b)(6) In order to avoid too much overlap with the topics in section II. below, maybe here (b)(6) can give the overview of the global need and importance of Thailand for incubation phase and future overall success everywhere, as well as the process to date with Steering Committee & BCG. Agree that other topics listed are critical to cover, but they might flow better below. This overview would flow nicely into the next section as described (GVP Structure & Thematic Areas), but I'm not sure an 1:45 minutes is necessary, so have shortened the times to allow for the other topics to be fleshed out in the agenda.

		6. IP 7. Related regulations/int. protocols 8. Experiences &lesson learned from past projects (conflicts, problems, difficulties) 9. Capacity building 10. Q&A
10:45 – 11:15am	Coffee Break	
II. The Mechanics of the Global Virome Project		
11:15 – 11:45 am	GVP Approach to prioritizing sampling sites	(b)(6)
11:45am – 12:15 pm	GVP Implementation • Scientific goals and sampling targets • Capacity strengthening • Experiences & lessons learned globally	
12:15 – 12:45 pm	Viral Discovery in the Global and Asia Regional Contexts: Key Lessons and Experiences Viral Discovery in Thailand: Key Lessons and Experiences	(b)(6)
12:45 – 1:45 pm	Lunch	
1:45 – 2:15 pm	Ethical, legal, societal implications • Sample repository, sharing and MTA • Intellectual Property • Related regulations/int. protocols	(b)(6)
2:10 – 2:30 pm	Proposed plan for GVP Information Management (IM) • IT infrastructure • Data management & sharing	

2:30 – 3:00 pm	Coffee Break	
III.	*Thailand's Viral Discovery & Risk Analysis Landscape (7 min each) (What have been done, not details)*	
3:00 – 3:10 pm	…	(b)(6)
3:10 – 3:20 pm	Chulalongkorn University, Faculty of Medicine, Center for Viral Zoonoses	
3:20 – 3:30 pm	Mahidol University (Tropical Medicine Faculty)	
3:30 – 3:40 pm	Mahidol University (Faculty of Veterinary Science)	
3:40 – 3:50 pm	Ministry of Science and Technology	
3:50 – 4:00 pm	Ministry of Public Health, Department of Medical Sciences, National Institute of Health (NIH)	
	Short break	
4:10 – 4:20 pm	Ministry of Ag and Cooperatives, National Institute of Animal Health	(b)(6)
4:10 – 4:20 pm	Thailand Research Fund	TBC
4:20 – 4:30 pm	CRI	
4:30 – 4:40 pm	DDC&BIDI? One Health Coordinator?	
4:40 – 4:50 pm	AFRIMS or US CDC?/FAO	

Commented (b)(6) Each block is awfully short. Can we extend into next day or shorten topics above?
We should expect delays if we are allocating 10min for presentation and turnover to next speaker.

October 25, 2018

IV.	*Developing a Thailand Virome Project*	
8:30 – 9:00 am	Summary of Thailand's Viral Discovery & Risk Analysis Capacities, Equities, and Expertise	To be presented in a synthesis form, by category (e.g. diagnostics, interface characterization) from previous day's presentations
9:00 – 11:30 am (including	Introduction to Group Deliberations and Group Discussion	

coffee break)	- Moderated Breakout Groups to Discuss Structural Options for a Thailand Virome Project - Suggested breakouts: o Governance o Sample sites/hosts & testing o Data sharing	
11:30 – 12:30 pm	Readout of Group Discussions	List of issues to be discussed should be provided Request for information from the previous meeting for preparation of the breakout session
12:30 –1:30pm	Lunch	
V. Roadmap to a Thailand Virome Project		
1:30 – 3:00 pm	Draft Roadmap Development and Next Steps - Presentation of draft roadmap following group recommendations - Key milestones - Q/A	
3:00 – 3:30 pm	Summary and Closing Remarks	

Commented [(b)(6)]: We suggest shortening planned sections on this day to make room for above inserts & longer presentations

Participating Institutions (tentative invitation issuance):

1. Ministry of Public Health , Department of Medical Sciences (DMSC), National Institute of Health 4 DDC/4 — 8
2. Ministry of Agriculture and Cooperatives , National Institute for Animal Health (NIAH) — 4
3. Ministry of Natural Resources and Environment, Department of National Parks (DNP) — 2
4. Ministry of Science and Technology, National Science Technology Development Agency (NSTDA) — 4
5. Chulalongkorn University, Faculty of Medicine, — 2

Commented [(b)(6)]: